CAS 140 - Beginning Access

Instructional Packet

Portland Community College
Computer Applications/Office Systems Department

Sylvania and Newberg Campus Classes Only
(This instructional packet is not used by other campuses or Distance Learning classes)
CAS 140 Beginning Access
Course Syllabus

Prerequisites: Knowledge of basic Windows features, mouse manipulation, and file management

Credits: 3 credits: (5 class hours including 1 hour TBA per week)

Textbook: Microsoft Access 2013: Complete Concepts and Techniques, Shelly, Cashman, & Pratt. Includes access code for 6-month trial version of Office 365 2013 and access code for SAM.

Instructional Packet: CAS 140 Instructional packet. Available only from the Sylvania Campus student bookstore.

Please note, there is an electronic PDF version of this instructional packet at the following website URL: http://spot.pcc.edu/cas/cas140/

If you choose to print the electronic version, it must be done outside of our classroom. We do not allow printing of the instructional packet in our classrooms.

Supplies: USB drive
All items may be purchased at the student bookstore.

Course Description for Publication: Hands-on microcomputer course covering beginning database management concepts including tables, forms, reports, queries and basic macros. Stresses a working knowledge of database management vocabulary. Emphasizes efficient use of Access toolbars and menus. Database design issues are discussed but not emphasized. Recommended: Placement into RD 115 or WR 115.

Intended Outcome(s) for the Course:
Students will be able to
• Develop the basic database objects for efficient management and organization of information.
• Use critical thinking skills to design and create database objects.
• Use the specialized vocabulary associated with database management.

Competencies, Skills
Students will develop proficiency through reinforcement and assessment on the following skills:
• Students will develop proficiency through reinforcement and assessment on the following skills:
• Creating tables by defining fields composed of various data types and entering text and numeric records.
• Creating and modifying forms including sub-forms.
• Creating, modifying and customizing basic, grouped and summary reports.
• Use queries to update and delete records, sort information and create reports.
• Designing and creating queries using wildcard characters, multiple criteria, joined tables, and calculated fields.
• Create and modify basic switchboard interfaces using simple macros
• Establish relationships between two tables to ensure integrity and accuracy
• Design and create a database management system from scratch using original information.
Students will be familiar with the following skills:

- Using help features.
- Establishing relationships between more than two tables
- Printing mailing labels
- Documenting and compacting databases
- Using additional functions such as combo boxes.
- Using additional field data types such as memo, OLE, and hyperlink fields
- Students may be exposed to additional database management skills/concepts as time allows.

General Information: Beginning database management with Access 2010 is a self-paced course that allows students to progress at their own rate. You will be given a suggested time schedule to assist you in completing the course. To complete this course in one term, it is important that you closely follow this schedule.

This instructional packet is your guide for the course. Always have it available in class so that you are following correct procedures. Reading your textbook and planning your work out of class will allow you to maximize the use of your computer time.

Attendance: Regular attendance is essential in order to meet all requirements. Your instructor may have an attendance policy that will be discussed during the first week of class. In the business world, it is your responsibility to get to your job on time. This is also your responsibility in this classroom.

Your Time Commitment: This course is scheduled for 4 hours each week in a computer classroom. However, in order to complete the course, a minimum of 8-10 hours each week will be required. The "rule of thumb" for college courses is to expect two hours of work outside of class each week for each credit of the course. Depending on your background, you may need additional time outside of class to complete the assignments; this will increase the amount of work you complete, your understanding of the concepts, and your final grade. (Past students have indicated that additional time is necessary.)

TBA Hours (DAY STUDENTS ONLY): As mentioned above, this class is scheduled four hours per week. In addition, you are expected to work at least one additional hour in the open classroom, the Computer Resource Center (CRC), or at home. Your instructor will inform you during the first week of class the additional hours which classrooms are open. You may also use these times to catch up if you fall behind the schedule. The course is designed for a minimum of 50 hours of in-class computer time. This is the minimum time needed to complete the course during the term. Some students may need additional hours to complete the course requirements.

Important Note:

- Students taking this class in the evening will meet two evenings a week for 2 1/2 hours each evening. Your instructor will discuss the use of additional classroom and lab hours.

Tutors Available

- There is a tutor available in the Student Computing Center (SCC) in the library throughout the term. Hours can be found at the following website address:
  http://spot.pcc.edu/computers/tutor_cas.html
Grading Options

- Students must choose their grading option through MyPCC. **Instructors can no longer change the grading options for students. This must be done by the student.**

- Students can change their grade option through MyPCC up until the end of the eighth week of the term (except for Audit grades see below). For example, students can change from Letter Grade to P/NP or from P/NP to Letter Grade up until the end of week eight.

- **Important:** Students who plan to complete a certificate or degree within the Computer Applications and Office Systems program (including website development and design students) must complete all CAS/OS classes with a C or better letter grade. Classes completed with a Pass grade, other than 1-credit classes, will not be counted towards any CAS/OS or Website certificate or degree.

- **Letter grade:** At the completion of this course you will be issued a letter grade based upon the points received for the hands-on exercises and the scores of the performance and objective tests.

- **Pass/No Pass:** You may also elect to take this course as a Pass/No Pass. The course will not apply to a degree program if you choose this grading option. You must complete all assignments and exams. You must select Pass/No Pass through MyPCC by the end of Week 8. To earn a “Pass” grade you must have a “C” average or better.

- **Audit:** You may choose to take this course for an Audit. An Audit means that you are taking the course for your own personal growth and knowledge and you do not need a letter grade or credits. You must complete the assignments but you do not have to take any of the tests. **You must also get your instructor’s signature on a “grade change” form if you plan to take this class as an Audit.** The grade change form, with instructor signature, must be submitted to the registration office before the end of the second week. Once an Audit grade is selected, neither students nor instructors can change from an Audit grade to a letter grade or P/NP grade after the end of the second week of the term.

**Important Note:** Classes taken for Audit grade or Pass/No Pass cannot be counted toward any certificate or degree program.

**Another Important Note:**

- Students may attend this course only if registered. Students who are unable to attend must drop the course online or through the Registration Office. To have tuition charges removed, the course must be dropped by the student before the drop deadline on My PCC and in the Class Schedule. Students who never attend, or stop attending, without dropping may receive a W or a failing grade and will be required to pay for the course and return their financial aid.

- Students who miss two or more class sessions during the first two weeks without communicating with the instructor will be dropped before the end of Week 2.
Grading and Assessment

In order to complete the course and receive a grade, you must complete the following requirements:

Assigned Guided Practice and Self-check Exercises
Analyze, Correct and Improve Exercises
Exam Study Assignments
Three Performance Exams
Final Project

Guided Practice and Self-check Exercises
These exercises are the means to allow you to learn the features of Access and prepare yourself for the exams. These exercises should be self-checked using the self-check answer keys. The self-check answer keys are online. Your instructor will give you the specific URL. These “guided-practice” exercises are required. Students receive points for completeness.

Analyze, Correct and Improve Exercises
These exercises allow students to critically analyze an existing database component to determine if there are errors or if the database object can be improved. These are required and scored.

Exam Study Assignments
The Exam Study Assignments will be used as a review for the Performance Exams so there is no student self-check answer guide for these. They will be assessed by your instructor using the Document Scoring Guide shown below. If necessary, additional practice may be assigned. It is very important that you look over your returned Exam Study Assignments before you take the Performance Exam.

Note: the combined scores of the Guided Practice, Analyze, Correct & Improve and Exam Study Assignments is 40% of the final grade.

Performance Exams
You will have three performance exams. The documents in the exams are similar to those you have completed throughout the course. Test documents are assessed using the Document Scoring Guide shown below. Points will be given for each test document.

Exams are open book/open notes. You will have a maximum of two class periods to complete your tests. Your course grade is based on the three Performance Exams and your Final Project. You may not retake an exam; use the Exam Study Assignments as practice for the exams.

You will fill out a Test Request Form during the class prior to your test date. Place this test request in the box in the classroom. Do not leave the test request in your folder.

Final Project
You must create a relational database that includes a specific list of minimum requirements. All tables, forms, reports, queries, and macros must be saved. The final project will be worth 20 points. Your final project will be assessed according to the listed requirements shown at the end of this packet. Your final project should not simply be a “mirror-image” of the textbook assignments. You must create your own design for this database. Please see the end of this packet for specific requirements.

Note: the combined score of the exams and final project is 60% of the final grade.
CAS 140 Database Document Scoring Guide
(Used for Exercises, Exam Study Assignments, and Performance Exams)

<table>
<thead>
<tr>
<th>Accuracy and Appearance</th>
<th>Error-Free (2 points)</th>
<th>Usable/Needs Editing (1 point)</th>
<th>Unusable (0 points - 1/2 points may also be assigned)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• No data errors. No format errors</td>
<td>• One or two data or formatting error that does not alter the meaning of the document</td>
<td>• Error in table structure, form, report, or query</td>
</tr>
<tr>
<td></td>
<td>• Software features used correctly</td>
<td>• No table structure errors</td>
<td>• More than two data entry error or formatting error</td>
</tr>
<tr>
<td></td>
<td>• This document looks professional in every way</td>
<td>• No design errors in form, report, or query</td>
<td>• Instructions not followed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Software features used correctly</td>
<td>• Software features not used correctly</td>
</tr>
</tbody>
</table>

Additional Grading Information
If you have regular attendance (as defined by your instructor), have regularly submitted assignments, and have received passing scores on tests taken but have not been able to complete all required course work by the end of the term, your instructor may choose to give you a CIPR (Course in Progress Re-register). This means that you may register for the course another term without repeating completed work.

If you stop attending and/or have not completed a satisfactory amount of assignments and do not withdraw from the class, you will receive an F grade. An I (Incomplete) grade for the course will be given only if all work is completed with the exception of one Performance Exam or the final project.

If you choose to take this class as an Audit option or Pass/No Pass option, please discuss this with your instructor within the first week of class.

Course Grade: Your course grade will be determined using the following grading scale (this scale is subject to adjustment)

<table>
<thead>
<tr>
<th>Total Points</th>
<th>Final Grade Based on 113 Weighted Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-check Guided Practice exercises &amp; Preliminary Steps: 14</td>
<td>A = 101+ points</td>
</tr>
<tr>
<td>Analyze, Correct &amp; Improve: 12</td>
<td>B = 90-100 points</td>
</tr>
<tr>
<td>Exam Study Assignments: 60</td>
<td>C = 78-89 points</td>
</tr>
<tr>
<td>Test 1 = 45 points</td>
<td>D = 67-77 points</td>
</tr>
<tr>
<td>Test 2 = 41 points</td>
<td>F = 0-66 points</td>
</tr>
<tr>
<td>Test 3 = 25 points</td>
<td>40% = 34</td>
</tr>
<tr>
<td>Final Project = 20 points</td>
<td>60% = 79</td>
</tr>
<tr>
<td>Total Weighted Points Possible = 113 points</td>
<td>Total Weighted Points Possible = 113 points</td>
</tr>
</tbody>
</table>
Special Needs Students
The Computer Applications Department, in conjunction with the Office for Students with Disabilities, will make every effort to accommodate persons with physical and learning disabilities. We encourage students to contact the Office for Students with Disabilities for assistance in requesting classroom accommodations. Their number is 977-4341.

Academic Honesty
We encourage students to "work together" on completing the hands-on assignments. "Work Together" is defined as analyzing and solving problems in a collaborative manner but submitting separate and independent solutions. You must submit your own, original work. "Working together" is not allowed on tests and some projects as specified by the instructor. Failure to abide by this policy will result in a failing grade for the class.

Weekly Procedures and Instructions for the Textbook and Assignments Follow
Textbook Notes and Weekly Assignments

The textbook is designed with step-by-step exercises to give you immediate practice with features that have been introduced. At the end of each chapter are additional exercises and case problems you must complete for additional practice. Only the exercises and lab problems indicated in this worksheet are required. A Student Answer Key with completed documents is available at an online web site for you to check your own work. In some cases, your work will not look exactly like the suggested work; the Student Key is only a guide. Your instructor will give you the web site address.

Check this instructional packet for any special instructions. Look for this symbol it identifies special instructions or additional important comments concerning the material.

Pay close attention to the information in the margins of the textbook entitled BTW (By the Way)... Q & A...and Consider This. The headings look like this:

<table>
<thead>
<tr>
<th>BTW</th>
<th>Q &amp; A</th>
<th>CONSIDER THIS</th>
</tr>
</thead>
</table>

Viruses: Whenever you use a computer system, there is a risk that viruses may infect your data. Every effort is made to eliminate viruses from our classrooms; however, no system that is used as frequently as this one can remain totally virus free. You may want to make a backup disk of the data files needed for your course. Be sure to practice safe computing at home and at work. Install virus protection software on your home system.

The CAS/OS Department accepts no responsibility for viruses transferred to your storage media or to another system.
Week 1 - Preliminary Steps

Read the supplemental handout on database concepts titled, *Introduction to Database Concepts*. This handout is located in your classroom folder that was given to you on the first day of class. The handout provides some general information about databases.

Data Storage Preparation

Create a new folder on your USB drive following these steps:
1. Open File Explorer
2. Double-click on your USB drive icon
3. From the menu, choose “File/New/Folder”.
4. Name the new folder: **CAS 140**
5. Create another new folder inside the CAS 140 folder and name it: **Database Files**

You should create and save your database files in the “**Database Files**” folder. Throughout the term, you will create and work with various databases.

Your textbook will instruct you on when to create these files.

6. Copy the “**Other Files**” folder from our network server to your USB drive. Follow the steps below to copy the folder:
   A. Double-click on the Data Folder icon located on the Desktop:
   B. On the left side of the screen, scroll down and double-click on the Data on Sy11nwfs01; (T:) icon (see below)
   C. Double-click on the **CAS 140 folder** (see below)
   D. On the right side of screen find the “**CAS 140 Other Files**” folder
   E. Copy the “**Other Files**” folder to your **CAS 140 folder** on your USB drive.

Your USB drive should now contain the following folder structure:

- **CAS 140**
  - Database Files
  - **Other Files**

Have your instructor check your USB drive to make sure it is correct.
Chapter 1 Instructions

Read Chapter 1: Creating and Using a Database
(pages AC2 - AC64)

You will use the following files from the “Other Files folder” on your USB drive:

Bavant Publishing Design
Customer Data.xlsx

Complete All Step-by-Step Exercises in Chapter 1
Make sure that you save your work to your Bavant Publishing Design database in the Database Files Folder on your USB drive. Your database should be named: Bavant Publishing Design

Read the following information as you complete the exercises in Chapter 1. Pay attention to the BTW, Q&A, and “Consider This” sections throughout the chapter.

Pages 2-4 – A “True” Relational Database Management System
A database management system (DBMS) is different from file management software such as the database feature of Excel. In a typical file management system, each department within an organization has its own set of files, often designed specifically for particular applications. In a database management system, many programs and users share the data in a database. With file management software, data only can be retrieved from one file. With a DBMS, data can be retrieved by joining tables that have a common field.

Pages 5-12: Creating and Designing a Database
Make sure you read through these pages carefully. This section provides a good overview of how to create the structure of a database. The information in this section discusses how to design the database that you will be working with throughout this textbook.

A table is composed of a group of related fields. It is important to identify one of the fields as a primary key. The primary key allows you to identify each complete record as a unique and unduplicated item. Sometimes the primary key is the combination of two or more fields. The primary key field cannot be blank and cannot contain a duplicate value. This restriction is called entity integrity. Also, field names cannot begin with a blank space.

If a table is closed without saving, Access will prompt you to save your changes. Tables are not stored as separate files but are stored within the database as objects.
Page 6 Steps #1-6. Make sure that you select the USB drive before saving. Also, double-click the “CAS 140” folder, then double-click the “Database Files” folder on your USB drive.

Page 7 – Be aware that different screen resolutions can affect how the ribbon appears.

Page 8 – When creating a table, each table in a database should have a primary key. ID is an autonumber field that Access creates if there is no primary key. That field is often changed to a different data type and assigned as the primary key.
The “Short Text” data type used to be named “Text” in earlier versions of Access. The “Long Text” data type used be named “Memo” in earlier versions of Access.

Page 21-23: Adding Records. Each record is saved as soon as it is entered. There is no separate save step.

Note: If you are “stuck” in a record and you keep getting an error message about data not completed then you should press the Esc key on your keyboard. This will clear out the partial record.

Page 23 Step 6: Some of the data for the second record is missing in Figure 1-26. Here is all of the data to enter for the second record:

<table>
<thead>
<tr>
<th>BR #</th>
<th>Last Name</th>
<th>First Name</th>
<th>Street</th>
<th>City</th>
<th>State</th>
<th>Postal Code</th>
<th>Start Date</th>
<th>Salary</th>
<th>Bonus Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>Perez</td>
<td>Melina</td>
<td>261 Porter Dr.</td>
<td>Adelphia PA</td>
<td>19156</td>
<td>5/14/2012</td>
<td>$31,500</td>
<td>0.20</td>
<td></td>
</tr>
</tbody>
</table>

Page 25 Step 7: Opening a Database.
Make sure you follow this step to “enable the content”. If you do not do this, some features in Access will not be available to you. You should always enable the content when you open a database UNLESS you are not sure where the database came from. If you are not familiar with the database file then do not enable the content.

Pages 26-27: Adding Additional Records. Access will always order the records in the table by the primary key. The order of the records can be easily changed. Please refer to Fig. 1-29 page 26 for the additional records to be added to the table.

Page 30-31: Printing the Contents of a Table. Ask your instructor if you need to print the table. You may simply have to show your table to your instructor on the computer screen.
Page 31 Step 4 - The margins and page orientation can be changed by using “Print Preview” from the File/Print dialog box. The two different page orientations are “Portrait and Landscape”

Pages 32-37: Creating Additional Tables. A database typically consists of more than one table, and the process of creating a table must be repeated.

The field names and structure including primary key, data type, field size, and notes for the “Client” table are shown in Table 1-5 on page 33.

Page 33-37: Adding Additional Records by Importing Excel Data
It is relatively simple to import an Excel file to an Access table. The key to this process is for the column headings in Excel must be named exactly the same as the field names in Access. Importing data from Excel saves large amounts of time because the records do not have to be keyed in. If they already exist in Excel, then importing the data is the most efficient method.

Page 33 Step 2: You must open the Excel document named: Customer Data.xlsx. This file is located in your “Other Files” folder

Additional Database Objects

Page 40-45: Creating Simple Queries
A query is a “question” that is asked of the database. Chapter 2 provides more in depth coverage of Queries. These page simply introduce you to query objects.

Page 45: Printing a Query. Ask your instructor if you need to print your query. You may simply have to show the query to your instructor on your computer screen.

Pages 45-47: Creating and Using Forms. Forms allow you to create a user-friendly interface for entering records and searching the tables. The form on these pages introduce you to the concept of forms. Chapters 4 and 5 provide more in-depth practice with creating forms.

Pages 48-54: Creating a Report. A report is a feature that allows you to display your records in a professionally formatted style. The “Report Wizard” allows you to create sophisticated reports in a quick and efficient approach. You will create the Customer Financial Report shown on page 48. Ask your instructor if you need to print the report.

Pages 54-55: Database Properties
The “database properties” option allows you to include keywords and other identifiable information that will help you find the database in an efficient manner especially if you have multiple databases.
Exiting Access Properly. A database file can become corrupted if Access is not closed properly. Also, leave your USB drive in the computer disk drive for a few seconds after you have closed Access. This will help reduce the possibility of losing any data or having your file damaged.

Page 56-58: Special Database Operations
Backup and Recovery and compacting and repairing database are important features to understand. A database can become very large and it is important to minimize an lost of data. These functions help to minimize data loss.

Pages 58-63: Database Design Concepts
Read these pages carefully. They contain a great summary of how to design a database correctly without redundancy and error.

This is a good time to review the supplemental handout that was given to you in your folders called, Introduction to Database Concepts.

Review of Table Concepts
Creating a Table
To create a table, you describe the structure of the table to Access by describing the fields within the table.

Field name – Each field in the table must have a unique name. In the Client table, for example, the field names are Client Number, Name, Address, City, State, Zip Code, Billed, Paid, and Tech Number. Always include a primary key field for each table.

Data type – Date type indicates to Access the type of data the field will contain. Some field can contain only numbers. Others, such as Billed and Paid, can contain numbers and dollar signs. Still others, such as Name, and Address, can contain letters.

Description – Access allows you to enter a detailed description of the field.

Field Naming Rules - Keep these rules in mind when you are creating the fields for your databases.

• Names can be up to 64 characters in length.
• Names can contain letters, digits, and spaces, as well as most of the punctuation symbols.
• Names cannot contain periods, exclamation points (!), or square brackets ([ ]).
• The same name cannot be used for two different fields in the same table.
Compacting a Large Database

Please Note: All the tables, reports, and forms created in this project are stored within the database. They will not display as separate files on their disk. Access databases can become very large. You should be aware that an Access database can be compacted. To compact a database, close the currently open database but do not close Access, click the on the “Database Tools” tab and then click “Compact and Repair Database” button. Select the database, click Compact, and save the database using a different name to compact it. If the procedure was successful, delete the original and rename the database to the original name. You may need to do this later in the course.

Chapter 1 – Bavant Publishing Objects

You should have 5 objects from this project. Self-check the answers in the Student Answer Key. Show your instructor the database objects.

Show your instructor: Book Rep table
Show your instructor: Customer table
Show your instructor: Customer Query
Show your instructor: Customer form
Show your instructor: Customer Financial Report

Additional Chapter 1 Exercises and Assignments

Complete the following exercises/assignments at the end of Chapter 1. Only complete the items listed below.

Important: Ask your instructor if you have to print your exercises. You may be asked to simply show your instructor your work on the computer screen.

Complete Analyze, Correct and Improve - Steps 1 and 2 only. Show your instructor the Movie table. pg. 67
Complete In the Lab 1 pg. 68 - 69 Steps 1 -12 (Dartt Offsite Services).
Self-check the answers in the Student Answer Key. Show your instructor the database objects.

IMPORTANT: You will need two files from the “Other Files” folder on your USB:
Lab 1 Dartt Offsite Services.accdb
Lab 1-1 Client Data.xlsx workbook file

Make sure that you save your Dartt Offsite Services database into the Database Files Folder.
You should have 4 objects from this project. Self-check the answers in the Student Answer Key. Show your instructor the database objects.

- Service Rep Table
- Client Table
- Client Query
- Client Financial Report

Exam Study Assignment. Complete Your Turn #2 – Mums Landscaping - Part 1 only (page 72).

You must open the Excel document named: Mums Landscaping.xlsx. This file is located in your “Other Files” folder

Hint: You must analyze the data in the Excel document and you should create 2 tables. One table should be composed of the fields related to the Customer and the other table should be composed of the fields related to the Supervisor. Each table should have a primary key. One of the fields should appear in both tables. Use the designs from the other databases you have created as a model. Ask your instructor for assistance if you need it.

Please complete the following:
Customer table
Supervisor table
Customer Form – (Use the Customer table when you create the form. Refer to pgs. 45-46 for help)
Customer Financial Report – (Use the Customer table. Include totals for the Amount Paid and Balance fields. Refer to pgs. 48-54 for help. Your report should look similar to the image below:

![Customer Financial Report Image]
You should have 4 objects from this project (show these objects to your instructor):

- Customer table
- Supervisor table
- Customer Form
- Customer Financial Report

Make sure that you save your Mums Landscaping database into the Database Files Folder.

Exam Study Assignments Assessment

After completing the case, use the Document Scoring Guide at the beginning of this packet to assess your work. If both the accuracy and appearance are error free, submit the printouts to your instructor. If not, edit the database so that it is error free. If your instructor finds errors, additional exercises may be suggested. Using the Document Scoring Guide to evaluate your work is an excellent preparation for the Performance Exams.
Chapter 2 Instructions

Read Chapter 2: Querying a Database (pages 73 - 129)

Complete All Step-by-Step Exercises in Chapter 2

Make sure that you save your work to your Bavant Publishing database in the Database Files Folder.

Read the following information as you complete the exercises in Chapter 2.

Page 75. Figure 2-1 shows a variety of examples where queries allow you to view a sub-set of the records in a database. Review this figure carefully.

Page 78-80: Creating a Query in Design View. Results of a query do not have to include all the fields in the table. You will learn how to select only the specific fields that need to be displayed. There are different types of queries: select, delete, update, append, make-table, cross-tab, union and cross-through.

This chapter introduces you to the most common type of query, the Simple query, also called the “Select” query. We will learn about some of the other types of queries also.

Think of a query as something similar to doing a search in Google or Bing search engines. The keywords that are used to search for information using Google are called criteria. The same concept “using keywords or criteria” to search your database is how you apply a query to a database.

A query can be a subset of the records from one table or from multiple tables, a subset of the fields in a table or a subset of both records and fields. The order of the fields also can be changed. In addition, you can create temporary fields to perform calculations.

Page 80: Determining Criteria. Criterion is an example of the expected result. This is similar to going to the library and entering an author’s name in a search of an electronic library database.

Page 82 Step 3: Saving a Query. Many queries are “spur of the moment” queries so there is no need to save them. You can always run the query again if you need to. Normally, a query is saved because it saves time from having to rebuild it.

Top of Page 82 Step 3: Show your instructor the Ch2q01 query.

Page 82: Saving a Query. When a query is saved, only the query instructions are saved, not the results. The results will appear each time the “run” command is used. This means that if the tables are modified with new records or old records are deleted, the query will always reflect the updated changes.
**Page 83-85: Using Wildcards.** Wildcard characters are very powerful. They are meant to be used with text data types, although you can sometimes use them successfully with other data types, such as dates.

When using wildcard characters to search for an asterisk (*), question mark (?), number sign (#), opening bracket ([), or hyphen (-), you must enclose the item you’re searching for in brackets. For example, to search for a question mark, type [?] in the Find dialog box.

If you're searching for a hyphen and other characters simultaneously, place the hyphen before or after all the other characters inside the brackets. Access also automatically adds the LIKE operator and quotation marks to criterion that use wildcards.

You can use the following characters in the Find and Replace dialog boxes, or in queries, commands, and expressions, to find such things as field values, records, or file names.

<table>
<thead>
<tr>
<th>Character</th>
<th>Usage</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Matches any number of characters. It can be used as the first or last character in the character string.</td>
<td>wh* - finds what, white, and why if these words begin the line</td>
</tr>
<tr>
<td>?</td>
<td>Matches any single alphabetic character.</td>
<td>B?ll - finds ball, bell, bill, bull</td>
</tr>
<tr>
<td>[ ]</td>
<td>Matches any single character within the brackets.</td>
<td>B[ae]ll - finds ball and bell but not bill or bull</td>
</tr>
<tr>
<td>!</td>
<td>Matches any character not in the brackets.</td>
<td>b[!ae]ll - finds bill and bull but not bell or ball</td>
</tr>
<tr>
<td>-</td>
<td>Matches any one of a range of characters. You must specify the range in ascending order (A to Z, not Z to A).</td>
<td>b[a-c]d - finds bad, bbd, and bcd</td>
</tr>
<tr>
<td>#</td>
<td>Matches any single numeric character.</td>
<td>1#3 - finds 103, 113, 123, etc.</td>
</tr>
</tbody>
</table>

ışı Bottom of Page 84 Step 4: Show your instructor the Ch2q02 query.

**Page 85: Using Criteria for a Field not Included in the Results**

As your textbook states, sometimes a query will use criteria from a field that should remain “hidden”. Steps 1-3 walk you through this type of query.

ışı Page 86 Step 3: You do not have to save this query.

**Page 89: Parameter Queries.** Parameter queries are useful because they allow you to use the same query rather than modifying a query each time the specific value in a criterion changes. You must use **brackets [ ] NOT parentheses ( )** when creating parameter queries. Parameter queries are very useful with reports because Access can prompt the user for the criteria when the report is printed or previewed.
Page 88 Step 4: Show your instructor the Customer-City query.

Page 89: Using numbers in Criteria. Commas and dollar signs should never be entered in a query with numbers. If they are entered, Access displays an error message.

Page 89 Step 3: Show your instructor the Ch2q03 query.

Pages 89-90: Comparison Operators. The order of the greater than or equal to (>=) and less than or equal to (<=) operators is fixed; they cannot be reversed. Comparison operators are used with both numeric and text data. The comparison operator <> also can be used to indicate NOT. Also, remember that if you are using comparison operators in a “number” or “currency” field then you can not include dollar signs or commas:

Not Correct:  >$4000 Not Correct: >4,000 Correct: >4000

Access assumes that the criteria you enter involves equality (exact matches). If you tell Access you want all clients who have a balance of 10 dollars it will only sort out the exact matches of 10 dollars. If you want all those above 10 dollars than you must enter >= 10. The order of the greater than or equal to (>=) and less than or equal to (<=) operators is fixed; they cannot be reversed.

<table>
<thead>
<tr>
<th>Operator</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>=</td>
<td>is equal to</td>
</tr>
<tr>
<td>&gt;</td>
<td>is greater than</td>
</tr>
<tr>
<td>&lt;</td>
<td>is less than</td>
</tr>
<tr>
<td>&gt;=</td>
<td>is greater than or equal to</td>
</tr>
<tr>
<td>&lt;=</td>
<td>is less than or equal to</td>
</tr>
<tr>
<td>&lt;&gt;</td>
<td>is not equal to</td>
</tr>
<tr>
<td>null</td>
<td>empty field</td>
</tr>
</tbody>
</table>

Examples:
<> null  This would display only records where the specific field was not empty
= null   This would display only records where the specific field was empty

Page 90 Step 3: Show your instructor the Ch2q04 query.

Pages 91-92: Using Compound Criteria. In general, you will always get more results when using "OR" and fewer results when using "AND". Remember that the criteria using "AND" is entered on the same line but criteria using "OR" is entered on separate rows.
The following “Venn” diagram gives a good illustration of the difference between using “OR” and using “AND”:

Another type of compound criteria is the “BETWEEN” operator. Here is an example of using BETWEEN:

**Between 5000 and 10000**
The results will display all numbers from 5,001 to 9,999

---

Page 91 Steps 1-3: Compound Query using AND
Show your instructor the Ch2q05 query.

---

Page 92 Steps 1-3: Compound Query using OR
Show your instructor the Ch2q06 query.

---

Page 93-96: Sorting Data in a Query. It’s important that you understand the difference between the major key (also called primary sort key) and the minor key (also called secondary sort key)

Page 94-95: Omitting Duplicates

---

Page 96 Step 4: Show your instructor the Ch2q07 query.

---

Page 96-97: Sorting on Multiple Fields. In the phrase "city within state", the major sort key follows the word within. So "state" is the major sort key and "city" is the minor sort key in this example. Notice that in the query design, the "state" field must be listed before the "city" field.

<table>
<thead>
<tr>
<th>State</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR</td>
<td>Lake Oswego</td>
</tr>
<tr>
<td>OR</td>
<td>Portland</td>
</tr>
<tr>
<td>OR</td>
<td>Salem</td>
</tr>
<tr>
<td>WA</td>
<td>Seattle</td>
</tr>
<tr>
<td>WA</td>
<td>Vancouver</td>
</tr>
</tbody>
</table>

**Hot Tip:** The major sort key must always come before the minor sort key in a Query but there is a way to display those fields in reverse order without receiving an error message. To display "city" before "state" but still sort by "city within state", you would need to add the "state" field again to the design grid and remove the check mark from the first state field (your major sort key). Ask your instructor to show you if you are unsure of this tip. See following example:
Example:
City _______ State
Lake Oswego OR
Portland OR
Salem OR
Seattle WA
Vancouver WA

Page 97 Step 3: Sorting on Multiple Keys Query
Show your instructor the Ch2q08 query.

Page 98: Top Values Query. This type of query allows you to limit the number of records displayed to just the highest group or lowest group. A percentage, such as 5% or 25% also can be used to quantify results. Records must be sorted in either ascending or descending order for the top values query to be meaningful. If you create a top-values query, you should close the query to ensure that the value in the Top Values box is reset to All. This type of query allows you to display, for instance, only the “top 10” or “top 2” or “lowest 5%” of a specific query.

Page 98 Step 3
Show your instructor the Ch2q09 query.

Page 99-102: Joining Tables. Make sure you read through the information on these pages regarding joining tables for a query. This is a useful process to display data from more than one table in the same query. You can then easily create a useful report based upon the query with joined tables.

Page 100 Step 2: Joining Tables. The join line was automatically inserted by Access because the matching fields have the same name. Some other database programs require the user to select the common field names. Access will do this automatically.

Page 101 Step 5
Show your instructor the Rep-Customer query.

Page 102 Step 1: Changing Join Properties. You must make sure your mouse pointer is directly over the middle portion of the “separating line” when you “right-click” to bring up the “join properties” dialog box.

The type of join where “only include rows where the joined fields from both tables are equal” are displayed in the result is called an “inner join”. An inner join is the default join type in Access. By changing the join properties, you are creating an “outer join”. The specific type of join shown in this project (option 2) is a right outer join because all the records in the one table in the relationship will display. Changing the join type to option 3 would create a left outer join because all records in the many table in the relationship would display.
Page 103-104: Creating a Report based on a Joined Query
The steps on these pages walk you through creating a report based upon a joined query. This is a process that is used often when working with databases.

Please note: the ability to create a report or form based on a query is a very powerful feature of Access.

Page 104 Step 3
Show your instructor the Rep-Customer Report.

Pages 105-106: Creating a Form for a Query
Another useful process is to create a form for a query.

Page 106 Step 3:
Show your instructor the Rep-Customer Form.

Pages 107-110: Exporting Access data to Excel and Word
Just as you can import data from Excel and Word you can also export data to Excel and Word. These pages show you how to export a query to an Excel worksheet.

Page 109 Step 5:
Show your instructor the Export-Rep-Customer Query Excel file.

Pages 111-112: Adding Criteria to a Join Query

Page 112 Step 2: you do not have to save this query

Pages 112-115: Using Calculated Fields. When creating a calculated field formula you must remember that all multiplication and division are performed before additions and subtractions. To change the order of precedence, use parentheses. Also, only field names must be enclosed in brackets. If constants, such as, .05 are used in an expression, they are not enclosed in brackets.

To include computed fields in a query you enter a name for the computed field, a colon, and then the expression in one of the columns in the field row. A quick way to get to the zoom dialog box is to press SHIFT+F2 and that will activate it.

<table>
<thead>
<tr>
<th>Examples of How to Enter Computed Fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>StockValue:[SharePrice]*[AmtOfShares]</td>
</tr>
<tr>
<td>LateCharge:[BilledAmt]-[PaidAmt]*.02</td>
</tr>
<tr>
<td>TotalPoints:[test1]+[test2]+[bonus]</td>
</tr>
<tr>
<td>WorthOfInventory:[Units]*1.25</td>
</tr>
<tr>
<td>FreightPercentage:Sum([Freight])/Sum([Subtotal])*100</td>
</tr>
</tbody>
</table>
Page 115 Step 3:
Show your instructor the Ch2q10 query

Formatting Calculated Fields
Once a computed field has been created in a "query design" you can format that field to currency or any other numeric format by right-clicking the computed field, choose Properties/Format. You'll see a list of formats that you can choose from.

Page 115-117: Calculating Statistics. Statistics are also referred to as aggregate functions. Aggregate functions perform a specific mathematical function against a group of records while a calculated field is a mathematical operation performed on individual records. AVG, SUM, STD, and VAR are statistical functions that can be used only with numeric fields. To find the statistical functions you must first choose “Totals” by right-clicking the grid or from the Ribbon. An aggregate function is different from a calculated field.

The COUNT function is another statistic. This function will allow you to count the number of records that match a certain criteria.

Access supports the following list of aggregate functions:

- **COUNT**: Determines the number of items or values.
- **SUM**: Adds the values.
- **AVG** (average): Determines the arithmetic mean of values.
- **MAX** (largest value): Determines the greatest value.
- **MIN** (smallest value): Determines the smallest value.
- **STDEV** (standard deviation): Measures how widely values are dispersed from the average value.
- **VAR** (variance): Squares the standard deviation.
- **FIRST**: Determines the first item or value.
- **LAST**: Determines the last item or value.

Difference between “calculated fields” and “aggregate functions (statistics)”: A calculated field is a mathematical operation performed on individual records. An aggregate function is performed on groups of records.

Page 117 Step 4:
Show your instructor the Ch2q11 query

Page 118 Step 3: Grouped Statistics
Show your instructor the Ch2q12 query

Page 119-121 Crosstab Queries. You can see that a crosstab query presents summary data in a worksheet format.

Page 121 Step 6:
Show your instructor the State-Rep Crosstab query
Additional Query Tips and Tricks

**Use Landscape Orientation.** Most of the time, you will want to use the landscape orientation instead of the portrait orientation when saving or printing queries. Always use print preview before printing.

**To Save Queries Versus Not to Save.** The two most important reasons to save a query are related to whether or if you plan to run the query many times and if you need to use the query when creating a report. In both of these situations, you must first save the query. You may also wish to save a query if you aren’t quite sure it is correct. If it isn’t correct, you can quickly make some changes to the query and run it again. If you do not expect to use the query again there is no reason to save because saved queries take up additional space within your database.

---

**Chapter 2 – Bavant Publishing Design Printouts**

You should have 19 objects from this project. Self-check the answers in the *Student Answer Key.* Show your instructor the database objects.

<table>
<thead>
<tr>
<th></th>
<th>Ch2q01 - pg. 82 Step 3</th>
<th>Ch2q09 - pg. 98 Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ch2q02 – pg. 84 Step 4</td>
<td>Rep-Customer query- pg. 101 Step 5</td>
</tr>
<tr>
<td></td>
<td>Customer-City - pg. 88 Step 4</td>
<td>Rep-Customer Report- pg. 104 Step 3</td>
</tr>
<tr>
<td></td>
<td>Ch2q03 - pg. 89 Step 3</td>
<td>Rep-Customer Form- pg. 106 Step 3</td>
</tr>
<tr>
<td></td>
<td>Ch2q04 - pg. 90 Step 3</td>
<td>Export-Rep-Customer Query (Excel file) pg. 109 Step 5</td>
</tr>
<tr>
<td></td>
<td>Ch2q05 - pg. 91 Step 3</td>
<td>Ch2q10 - pg. 115 Step 3</td>
</tr>
<tr>
<td></td>
<td>Ch2q06 - pg. 92 Step 3</td>
<td>Ch2q11- pg. 117 Step 4</td>
</tr>
<tr>
<td></td>
<td>Ch2q07 - pg. 96 Step 4</td>
<td>Ch2q12- pg. 118 Step 3</td>
</tr>
<tr>
<td></td>
<td>Ch2q08 - pg. 97 Step 3</td>
<td>State-Rep Crosstab - pg. 121 Step 6</td>
</tr>
</tbody>
</table>

---

**Additional Chapter 2 Exercises and Assignments**

**Complete Analyze, Correct and Improve - Steps 1 and 2 only.** Show your instructor the two queries: Corrected Criteria Query and Improved Sort Query - pg. 128

**Complete In the Lab 1 pg. 129 - 131 Steps 1 -12 (Dartt Offsite Services).**

You will have 11 queries. Save all queries and refer to the *Progress Record* at the end of this packet and in your folder for specific items. Self-check the answers in the *Student Answer Key.* Show your instructor the database objects.
Make sure that you save your work to your *Dartt Offsite Services* database in the Database Files Folder.

**Exam Study Assignment.** Complete *Your Turn #2 – Mums Landscaping* - Part 1 only (page 134).

You will have 8 queries. Refer to the Progress Record at the end of this packet for specific items.

___ Save and Print all queries and the report.  Label and turn in all printouts.

You must complete the following Extra Query for the Mums Landscaping database.  Use both tables for this Query.

___ Extra Query: Display the Supervisor first name, Supervisor last name, and the Customer Number fields (you must join the two tables). Answer this question: How many customers does each supervisor have?

(Hint: you must use the “count” statistic. Don’t forget to click the “totals” button from the Ribbon and then “Count” the Customer# field in the Query design.  
Save and Print out all queries or show to your instructor on screen.  Label and turn in all printouts.)

Make sure that you save your work to your *Mums Landscaping* database in the Database Files Folder.

___ Fill out a Test Request Form for Performance Exam 1.

A test request must be completed the class session prior to taking your test. Your test will then be ready for you when you get to class. Test request forms are in your classroom; ask your instructor to show you where they are located.  **Place your completed test request form in the appropriate box. Do not leave the test request in your folder. Be sure you have completed all required information on the form.**

Test documents will be assessed using the Document Scoring Guide. To determine a grade, your documents will be assigned points based upon the requirements of the test problems.  **Test 1 is worth 20 points.**

**Performance Exam 1 is an open-book/open note test.** The test covers Chapters 1 and 2 and may include the following items:

- Creating a Database
- Creating simple reports
- Editing Records
- Creating Queries with Criteria
- Creating simple forms
- Sorting Records
- Using Calculated Fields
- Joining Tables for a query

___ Complete Performance Exam 1

Performance Exam 1 will be completed at the computer. You may use your textbook and samples of your documents as you complete the test. Refer to the Document Scoring Guide in this handout to determine how the test will be assessed.
Chapter 3 Instructions

___ Read Chapter 3: *Maintaining a Database* (pages 138 - 190)

___ Complete All Step-by-Step Exercises in Chapter 3

Make sure that you save your work to your Bavant Publishing Design database in the Database Files Folder.

Read the following information as you complete the exercises in Chapter 3. In this chapter you will using the “Filter” tool to search for data in your database. Filters are similar to queries in that you can use specific criteria to view a subset of your data. There are major differences between filters and queries: 1) Filters are temporary and not saved (you must export the filter to a query if you want to save it). Queries can be saved. 2) Filters can only search a single table at a time. You can’t “join” tables to do perform a filter. Multiple tables can be “joined” when creating a query.

Make sure you read this section. Maintaining a database requires modifying your database for many different reasons. Here are the specific maintenance operations that you will learn in this chapter:
- Update records using a form
- Filter records using various filtering options
- Change the structure of a table
- Make mass changes to a table
- Create validation rules
- Change the appearance of a datasheet
- Specify referential integrity
- Order records in a datasheet

Page 141-143: Updating Records and Creating a Split Form. Adding, changing, and deleting records are all necessary functions to keep a database up-to-date. A “split form” is a useful way to update records because it displays the data as a simple form and in datasheet view at the same time.

Page 143: Adding Records using a Form. Remember that records are ordered by the primary key.

Page 143-144: Searching for a Record. The Find option is a useful feature because often the specific record number of the record of interest is not known, so an option like this is essential. By selecting a field, values are being restricted to that field. Wildcards also can be used when searching for a record.

Page 145: Updating the Contents of a Record. Pressing the ESC key will undo changes to a current record. To replace an existing value with that of the same field in the previous record, press “CTRL + ”.

Page 145-146: Deleting Records. When you delete the records, they are removed permanently from the database. It is very important to backup a database before adding, changing, or deleting records.
Page 146: Filtering Records. There are four types of filters available in Microsoft Access, Filter By Selection, Common Filters, Filter By Form, and Advanced Filter/Sort. You will learn how to use all of these filter in this chapter.

Page 147: The Filter By Selection method: This method produces a subset of the table. This is useful when you need to update a field in several records with the same value.

Page 148: Clearing a Filter: It is a good idea to clear all filters when you are finished using the filter tools. Note that “clearing a filter” is different from “toggling a filter”. The Toggle Filter button redispalyes all records but does not clear any filters that have been applied.

Page 148-149: Using a Common Filter: this is a good filter to use when you want to find specific records that have a common search criteria.

Page 150-151: Filter by Form. Use filter by form to retrieve records based on more than one criteria or value.

Page 151-152: Advance Filters and Sorts: some filters are too complex to use the “filter by form” option. For complex criteria, the Advanced Filter/Sort option can be used.

Page 152: Filters and Queries: Filters and queries are related in the following ways:
- A filter can be applied to the results of a query just as you can to a table
- Filter settings can be saved as a query when you use Advanced Filter/Sort to create the filter
- Filter settings can be restored

Page 153-159: Changing the Database Structure. You can delete fields that are no longer needed. The location of a field in a table also can be changed. To change the location of a field in a table, click the field selector twice, and drag the field to the new location.

New fields can be added simply by opening the table in “design view” and inserting a blank row where you want the new field to appear (see pg. 154 Steps1-2).

Page 154-156: Lookup Field Type: This field type is useful if you want a user to choose from a list of specified items. It helps reduce typographical errors when entering data.

Page 155 Step 1: Notice that the “data type” for the “Customer Type” field still shows “short text” because the lookup entries are all text entries.

Page 156-157: Adding a multivalued field. Multivalued fields allow for fields to have more than one value. This is useful when a field contains abbreviations. The definition of each abbreviation can be included in a multivalue field. Note: Multivalue fields should not be used if the database will later be converted to an SQL Server database. See the “BTW” note on pg. 157.

Multivalued fields and calculated fields make it much easier for the average user but are not practical if you want to export data to other databases.

Page 158-159: Creating a Calculated Field. Calculated or “computed” fields can now be created in Access 2013 tables. In the past, these fields could only be created within queries.
Logical “Yes/No” Field Type: Another specific field type is the “Yes/No” type. This type of field only expects “yes” or “no” entries as a default format. The format can be changed to: “yes/no”, “true/false”, or “on/off”. The default is for the field to display an empty check-box “☐” which is the default for “no”. A “yes” entry would display a marked checkbox “☑”. The check box can be changed to display the text “no” or “yes” or a combo box by clicking on the Lookup tab under the field properties and selecting either check box, text box or combo box.

Making Mass Changes to a Table

Page 160 – 162: Types of Queries - In Chapter 3 you have the opportunity to learn about several types of queries that allow you to make mass changes to a table. In Chapter 2 you worked with select queries and now you are learning action queries that allow you to update and delete table records. An update query allows you to update multiple records at a time making the same change to all records that satisfy some type of criteria. The delete query will allow you to delete multiple records at a time deleting all the records that satisfy some criteria.

Four Basic Types of Queries:

Select - This is the most common and it retrieves information from underlying tables or queries. Theses are independent objects that appear on the query sheet in the database window. The original tables are not changed with select queries.

Action - An action query makes changes to many records at a time in a given table. The four types of action queries are delete, update, append, and make-table. We already talked about update and delete queries. An append query adds a group of records from one or more tables to the end of one or more tables. A make-table query creates a new table from all or part of the data stored in one or more tables.

Crosstab - A crosstab query displays summarized values (sums, counts, averages, or other type of totals) in a cross-tabular format similar to a spreadsheet. Row and column headings are based on fields in the underlying table.

SQL Specific - An SQL(Structured Query Language) query is a query you create by writing specific SQL code. Union, Pass Through, and data definition queries are other, more complex queries, that can only be written with SQL code.

Page 162 - 166: Creating Validation Rules. Validation rules are not only important in controlling the database but they also make it easier to enter data. They are a primary source for reducing data entry errors in a database. For instance when a data type is declared as Number or Currency, Access automatically validates the type of data that can be stored in the field; that is, only numbers can be entered in the field. You can specify required fields, a range of acceptable values, legal values, specific formats, and default values as validation rules.

You should always test the validation rules by making intentional errors. This will allow you to determine if your validation rules are correct.
Page 164 – Required Fields. Required fields are ones that must contain data. In other words, the field can not be left empty for any record or Access will display an error message.

Page 164 – Specify a Range. When a range is specified, only data that falls within that range can be entered into a field.

Page 164: Default Values. Default values can be specified for most data types.

Page 165: Legal or Allowable Values. The use of allowable values is very useful when there are a limited number of values available for a field.

Page 165: Specifying a Format. Formats affect only the appearance of the data and not how it actually is stored.

Page 169-171: Lookup Fields and Multivalued Lookup Fields. A lookup field allows the user to select from a list of values. This is a very practical approach to validating data.

A “lookup” data type for a field in a table structure allows a user to select choices from a dropdown list. Lookup data types are used to help improve the data entry process. The Multivalued Lookup field allows you to include multiple items in the same field. This is similar to a “Long Text” field.

Pages 171-174: Updating Forms and Reports After Changes in the Table Structure. It is important to remember that previously saved forms and reports must be updated to reflect the new changes to the fields and structure of a table.

Pages 175-179: Changing the Appearance of a Datasheet. The format of datasheets can be enhanced with text and background colors, gridlines, and font size changes to make the data more “attractive” when viewing records.

Pages 175: Include Totals in a Datasheet. This feature allows you to quickly perform basic calculations in a numeric or currency type field. The totals will automatically update if records are added or deleted.

Pages 179-181: Using Multivalued Fields in a Query. A query based on a multivalued field can be displayed two ways: on single rows or multiple rows. This lends flexibility to how a user wants to view and use the query.

Pages 181-184: Referential Integrity. Using more than one table in a database eliminates redundancy, but there needs to be some way to link the tables and prevent errors. This is why referential integrity is an important aspect.

This is a key concept in working with multiple tables. Referential Integrity allows you to relate tables by using a common field. This is the only way to obtain grouped reports containing information from more than one table in the same report. Referential integrity is a key characteristic of the relational data model and all relational database management systems must have the ability to enforce referential integrity.

Page 184 Step 5. Show your instructor the Relationship window
**Relationships**

Your textbook will show you how to set up a **one-to-many** relationship between two tables. Many databases have more than two tables and so there may be multiple **one-to-many** relationships. There may also be **one to one** and **many-to-many** relationships as well.

A **one-to-many relationship** is created if only one of the related fields is a primary key or has a unique index.

A **one-to-one relationship** is created if both of the related fields are primary keys or have unique indexes.

A **many-to-many relationship** is really two “one-to-many relationships” with a third table whose primary key consists of two fields which are the foreign keys from the two other tables. The third table is known as a **junction table**.

Relationships and referential integrity are key concepts for designing effective databases. The PCC CIS department offers additional classes on database management that go much deeper with these concepts.

To get a better idea of how relationships can be set up you should check out some of the Access templates. You can analyze the design of these templates. The Access templates can be found under the **Access Welcome screen**.

**Here’s what you should do:**

- Open Access and make sure that no databases are open.
- This is the Access Welcome screen
- Double-click on one of the template icons.

- You will be guided through a **wizard** to set up the template.
- Once the database has been set up, you will be able to analyze and look at the tables, forms, reports, and relationships.
To view the multiple relationships, click the Database Tools tab and then click the Relationships button on the toolbar.

Page 185-186: Using Sub-datasets. There are advantages of being able to display the one-to-many relationship between the tables in your actual datasheets. This gives you a quick way to see how specific records are related to the primary and foreign keys of related tables.

Page 187-188: Ordering Records: It is quite easy to change the order of the records in a table. The default ordering is ascending order on the primary key. This can easily be changed and saved as shown in these steps.

Self-check the answers in the Student Answer Key. Show your instructor the database objects.

- Show your instructor the “relationship” window from Pg. 184 Step 5
- Show your instructor the table structures with the new and updated fields including the validation rules.
- Show your instructor the “update query”

- Show your instructor the “Ch3q01 query”
- Show your instructor the “Ch3q02 query”
- Show your instructor the Customer Split Form
- Show your instructor the revised “Customer Financial Report”

Additional Chapter 3 Exercises and Assignments

- Complete Analyze, Correct and Improve - Steps 1 and 2 only. pg. 194
- Complete In the Lab 1 pg. 195 - 196 Steps 1 -12 (Dartt Offsite Services). Self-check the answers in the Student Answer Key and show your instructor the following items:
- Show your instructor “Client” table to check the Multivalued lookup field, calculated field, filter by form, data for the “Services Needed” field
- Show your instructor the “Service Rep” table to check the field size for last name field
- Show your instructor the relationship window

Refer to the Progress Record at the end of this packet for specific items.

Make sure that you save your work to your Dartt Offsite Services database in the Database Files Folder.
Exam Study Assignment. Complete Your Turn #2 – Mums Landscaping - Part 1 only (page 198-199).

Show your instructor the updated tables that include the “Services Needed” multivalued field, Total Amount field, deleted record, validation rule for Balance field, and the relationship window.

Refer to the Progress Record at the end of this packet for specific items.

Save your work to your Mums Landscaping database in the Database Files Folder.
Chapter 4 Instructions

- Read Chapter 4: Creating Reports and Forms (pages 202 - 249)
- Complete All Step-by-Step Exercises in Chapter 4

Make sure that you save your work to your Bavant Publishing Design database in the Database Files Folder.

Read the following information as you complete the exercises in Chapter 4.

Pages 203-205: Review Figures 4-1- 4-4 on these pages. These are the reports and forms that you will be creating in Chapter 4. Look at them closely to get an idea of how you will proceed with this chapter.

Page 207: Report Design Considerations. Make sure you carefully read the BTW section concerning report design considerations.

In general, reports and forms should be user-friendly and “pleasing to the eye.” Also, users make judgments about the database based on output. If the output is unprofessional, then users may question the accuracy of the underlying data. It may take some time to design your reports so they are professional. You may have to delete and re-create your report many times before getting it “just right”.

Page 207: Report Sections. It is important that you understand the different sections of a report and how they effect the final output. The sections are: Report Header section, Report Footer section, Page Header section, Page Footer section, and Detail section. If a report is grouped then it will also have a Group Header section and Group Footer section.

Page 208-210: Sorting and Grouping an Existing Report. You may find a need to add sorting or grouping for a report that you already created. You can easily do this by changing to “Layout View”, click the “Design” tab, and then click the “Group and ‘Sort” button on the Ribbon. You can then click the “Add Group” or “Add Sort” buttons (at the bottom of the report screen) to select the particular fields for sorting or grouping.

Page 211-213: Adding Totals and Sub-totals. This is an important section where you learn how to add calculations to a report.

Page 215-218: Conditionally Format Columns. This is a nice feature that allows you to “highlight” specific data in a column based upon a set of criteria.

Page 218-219: Filter Records in a Report. This option allows you to quickly change the display of a report so only specific records will print.

Page 221 Steps 1-3: Show your instructor the Customer Financial Report
Page 221-226: Using Multiple Tables in a Report. This section shows you how to use the “report wizard” to create a report that uses more than one table. This is very useful when you have a relationship between multiple tables. You can pick and choose fields from the different tables to create nice, grouped reports. Note that the title of a report also becomes the “object” name of the report.

Page 235: Show your instructor the Clients by Analyst Report

Note About Grouping Reports. Forcing Each Grouped Section to Print on a New Page. It is often desirable to have each grouped section of a report to begin printing on a new page. To do this, you need to click on the “More…” option in the “Grouping section” at bottom left side of the window.

Then click on the arrow next to the phrase “do not keep group together on one page” and change it to “keep whole group together on one page” as shown below.

As you can see in the image above, you can also change various other grouping settings in the “more…” section.

Note: Pages 227 – 233 Report Creation in Layout View and Using Themes. There are no actual step-by-step activities on these pages. Just read and review the information.

When creating a report in Layout View, you will start with a blank report. The field list will display for the specific table and you begin by selecting the fields you want displayed in the report.

Note: In Access 2013, if you create a report using the Report Wizard, you cannot modify the report in Layout view without first placing the entire report in a control layout. It is easier to use Design view to modify a report created using the Report Wizard.

Page 238-241: Using Themes
Themes allow you to quickly and easily create a professional report using a pre-existing theme format. Themes are standardized across Office applications so you can apply the same theme to files created in Word, Excel, and Access. Each theme has a name making it easy to use as a reference in emails and other correspondence. Themes are stored in a file with a .thmx extension in a subfolder within the Program Files folder. You easily can change colors and fonts to create your own themes.
Page 232-233: Summary Reports. You can create summary reports in either Layout view or Design view.

Forms Creation

Page 233-245: Creating, Formatting and Filtering a Form. Follow the steps in the textbook to create and enhance a form.

Forms are used primarily for data entry. An attractive form that is easy to read can help improve the accuracy of data entry. Also, if individuals are going to be using the form for long periods of time, it should be “easy” on the eyes. Many companies have their own standards for designing forms.

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Page 235: Form controls terminology - Like reports it is important that you understand the terminology associated with forms. Controls are the various items on a report. Bound controls are the controls that are used to display data that comes directly from the database. Bound controls have attached labels that will appear automatically. The attached labels can be removed by clicking on them and then pressing delete. An unbound control is not associated with data from the database and are used for items such as the title. A calculated control is used to display data that is calculated from the data in the database. A calculated control is like an unbound control.

Page 243 Step 2: This filter uses the wildcard character * to find only those cities beginning with the letter “G”. The filter is written as G*. Please review the following information related to this specific wildcard character.

<table>
<thead>
<tr>
<th>Character</th>
<th>Usage</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Matches any number of characters. It can be used as the first or last character in the character string.</td>
<td>wh* - finds what, white, and why, etc. if these words begin the line</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*ter – finds water, batter, later, etc. if these words end the line</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>large</em> - finds this series of letters anywhere on the line</td>
</tr>
</tbody>
</table>

Page 244: Do not print. Show your instructor the form; BUT if you wanted to print only one form, you must follow these steps:

- Make sure your form is displayed.
- Click the “File” tab
- Choose “Print” twice
- Make sure you check “Selected Record”
- Then click the “OK” button
Note: you can use the Office Themes tool to enhance the look of a form in the same manner as used with a report.

Page 245-248: Mailing Labels report. Creating and printing mailing labels is a common task when working with databases. The Mailing Label wizard allows you to quickly create a labels report that can be filtered and used with queries.

☞ Page 259: Show your instructor the Labels Customer Report

Note: You should show your instructor the three reports and one form for Bavant Publishing Design in Chapter 4. Self-check the answers in the Student Answer Key. Show your instructor the database objects.

☞ Customer Financial report
☞ Customers by Book Rep report
☞ Customer Financial Form
☞ Labels Customer report

Additional Chapter 4 Exercises and Assignments

☞ Complete Analyze, Correct and Improve - Steps 1 and 2 only. Show instructor Customer Financial Form and Customers by Technician Report pg. 255-256

☞ Complete In the Lab 1 pg. 256 - 259 Steps 1 -7 (Backup Services Database). Self-check the answers in the Student Answer Key and show your instructor the following items:

☞ Let your instructor view the “Client Financial Report”
☞ Let your instructor view the grouped report: “Client by Services Rep”
☞ Let your instructor view the “Client Financial Form”.

Refer to the Progress Record at the end of this packet for specific items.

Make sure that you save your work to your Backup Services database in the Database Files Folder.

Exam Study Assignment. Complete Consider this Your Turn problem #2 – Carel Landscaping Database (page 263).

☞ Step 1A: Show your instructor the report “Customer Financial Report” (should be grouped by “supervisor number”, sorted by “customer number (minor key) within supervisor number (major key)” and use conditional formatting to highlight values in the Balance field that are greater than $800.
Step 1B: Create the second report and name it “Customers by Supervisor Report”. It should be grouped by Supervisor Number and sorted by Customer Number. Include subtotals for the two currency fields. Orientation should be landscape. Show your instructor this report.

Step 1C: Create a form for the Customer table using the fields specified in Step C of your textbook. Name the form: Carel Customer Form. Show this report to your instructor.

Step 1D: Filter the form according to the instructions for Step D and save the form as “Filtered Form”.

Refer to the Progress Record at the end of this packet for specific items.

Make sure that you save your work to your Carel Landscaping database in the Database Files Folder.

Fill out a Test Request Form for Performance Exam 2.
A test request must be completed the class session prior to taking your test. Your test will then be ready for you when you get to class. Test request forms are in your classroom; ask your instructor to show you where they are located. Place your completed test request form in the appropriate box. Do not leave the test request in your folder. Be sure you have completed all required information on the form.

Test documents will be assessed using the Document Scoring Guide. To determine a grade, your documents will be assigned points based upon the requirements of the test problems.

Performance Exam 2 is an open-book/open note test. The test covers Projects 3 and 4 and may include the following items:

- Maintaining a Database
- Validation Rules
- Joining Tables
- Creating Update Queries
- Creating Append Queries
- Relationships (including Referential Integrity)
- Using single-valued and multivalue lookup fields
- Creating reports
- Creating Mailing Labels Reports
- Ordering Records
- Grouping Reports
- Creating Delete Queries
- Creating Forms
- Updating Records
- Filtering Records
- Customizing Forms
- Changing the Table Structure

Complete Performance Exam 2
Performance Exam 2 will be completed at the computer. You may use your textbook and samples of your documents as you complete the test. Refer to the Document Scoring Guide in this handout to determine how the test will be assessed.

Review the Final Project Requirements (last page of this packet). You should begin formulating your ideas for your final project.
Chapter 5 Instructions

Read Chapter 5: *Multi-table Forms with OLE Forms, Hyperlinks, and Subforms* (pages 274 - 326)

You will use the following files from the “Other Files folder” on your USB drive:

**Bavant Publishing Design**
- Melina_Perez.jpg
- Michael_Statnik.jpg
- Robert_Chin.jpg
- Tracy_Rogers.jpg
- Melina Perez Customers.docx
- Melina Perez Potential Customers.xlsx
- Robert Chin Potential Customers.xlsx

Complete All Step-by-Step Exercises in Chapter 5

Read the following information as you complete the exercises in Chapter 5.

Please note that you will be using some of the files in your “Other Files” folder on your USB drive.

Make sure that you save your work to your Bavant Publishing Design database in the Database Files Folder.

Page 269: Special Fields. Make sure you understand what date, long text, OLE Object, attachment and Hyperlink fields are. Valid dates mean that the months must be between 1 and 12, the days between 1 and 31, and you cannot enter an invalid date for a particular month; for example, June 31, 1997. Remember that pressing *CTRL+SEMICOLON (;)* enters the current date in a field.

Adding more fields to the database will have no effect on the reports and forms already created.

Page 269-270: Adding Additional Fields. You will add a few special field types to practice using these special fields.

Page 270-272: Using the Input Mask wizard. An input mask makes data entry easier and controls the values users can enter in text box control. Storing data without the symbols takes up less space. If a format also has been specified for the field, the format takes precedence over the input mask. The Format property affects only how the value is displayed not how it is stored.
Page 274-275: Entering data using an input mask. When you type data in a field for which an input mask has been defined, the data always is entered in Overtype mode. If you use the BACKSPACE key to delete a character, the character is replaced by a blank space.

Page 275: Entering Data in Yes/No fields. The values for a Yes/No field can be set to Yes/No, True/False, On/Off, or it can be set with a checkbox.

Page 276: Entering Data in a Long Text Field. Long text fields are extremely useful because information can be entered in the form of phrases and sentences. Searches, using wildcards, can easily identify the required records using the long text field criteria.

Page 276-277: Changing Column Width and Row Width. Make sure you understand how to drag the boundary lines of the field selector and row selector to change width and height for columns and rows.

Page 278-280: Entering Data OLE Object fields: You can also store sound and full-motion videos in OLE Object fields. Also the quality of a displayed image depends upon the quality of the video driver installed for you monitor. Older monitors will display a lower quality image. Sometimes the graphic files will not display properly because your computer may not have the proper association set up to recognize certain graphic file types.

Note that the pictures are not visible in the table column. You will only see the image file names. You will be able to view the picture files after you finish creating the form on page 295.

Page 279 Steps 2 – 5: Click the Browse button and browse to the “Other Files” folder on your USB drive to find the required picture files.

Page 280-282: Enter Data in Attachment Fields. Common attachments might be Word documents, Excel documents, PowerPoint Presentation files, and PDF files among others.

Page 282: Saving Table Properties. Remember, if the table properties are not saved then the changes are only in effect as long as the table is active. When the table is closed, the table properties will not be saved. You must save the new properties if you want the changes to be permanent.

☞ Page 282: Show your instructor the “Book Rep” table

Multi-table Form Techniques
Page 283–308: Multitable form: The key for making a subform work correctly is to make sure that you have set up a one-to-many relationship between the appropriate tables. The referential integrity rule also has to have been applied. In this situation with the Bavant Publishing Design database, the main form contains data from the one table (Book Rep) and the subform contains data from the many table (Customer).

Page 284-291. Adding and editing Controls. The steps on these pages will take you through adding and formatting the required controls for the multitable form.

Page 292-295: Placing a Subform. Follow these steps to insert the controls from the “Client” table into the subform.
Page 296-304: Modifying a Subform: Make sure you select the correct field handles when resizing fields. You will usually want to point to the control item not the label when attempting to resize. To move multiple fields at once, you should “shift-click” each field. You can also use the mouse to draw a box around multiple fields. This will allow you to quickly select multiple fields to move at the same time.

Page 299: Changing the size mode for pictures. Zoom mode is the best choice for photographs.

Page 304: Changing the Tab Order. If you rearrange the field objects on a form, you may need to change the tab order. Figure 5-66 on Page 305 shows you how to do this.

Page 305: Show your instructor the completed “Book Rep Master” form.

Page 307-308: Object Dependencies. This feature allows you to view how the different forms, tables, reports, etc. depend upon each other. It gives the user more control over maintaining the database and preventing errors.

Page 309–311: Using Date/Time, Long Text, and Yes/No Fields in Queries: Figures 5-74 and 5-75 on pages 310-311 shows a good example of how to use a compound query with date & long text fields. Remember that if you want to include a specific date within a criteria you must use “>=” or “<=” not just “>” or “<”.

Page 310 Step 3: Save this query as “Fluent” and show your instructor the query.

Page 311 Step 6: Save this query as “Sales Goal Yes” and show your instructor the query.

Pages 312-315: Datasheets in Forms. This section gives you some good examples of how to create forms based upon the one-to-many relationship of the tables. You do not have any actual step-by-step instructions to follow on these pages.

Self-check the answers in the Student Answer Key and show your instructor the following items:

Page 310 Step 3: Save this query as “Fluent” and show your instructor the query.

Page 311 Step 6: Save this query as “Sales Goal Yes” and show your instructor the query.

Additional Chapter 5 Exercises and Assignments

Note: We are skipping the “Analyze, Correct, Improve” exercise for this chapter

Complete In the Lab exercise #2 (Backup Services) (pages 321-322).
The pictures you select should be: Pict1.jpg, Pict2.jpg, Pict3.jpg, Pict4.jpg. They are located in the “Other Files” folder on your USB.
Self-check the answers in the Student Answer Key and show your instructor the following items:

- Show your instructor the “Service Rep Table”
- Show your instructor the “Service Rep Master Form”
- Show your instructor the “Service Rep MOS Query”

Refer to the Progress Record at the end of this packet for specific items.

Make sure that you save your work to your Backup Services database in the Database Files Folder.

Exam Study Assignment. Complete Consider this Your Turn problem #2 – Carel Landscaping Database (page 325-326).
Complete Part 1a, 1b, 1c and 1d

Part 1a: the “Notes” field must be a “long text” data type.
Part 1d: save the query as “Supervisor Landscaping Query”

- Show your instructor the Supervisor table
- Show your instructor the Supervisor Master Form.
- Show your instructor the “Supervisor Landscaping Query”

Refer to the Progress Record at the end of this packet for specific items.

Make sure that you save your work to your Carel Landscaping database in the Database Files Folder.
Chapter 6 Instructions


You will use the following files from the “Other Files folder” on your USB drive:

Bavant Publishing Design
  seminar.txt
  seminar offerings.csv

Complete All Step-by-Step Exercises in Chapter 6

Read the following information as you complete the exercises in Chapter 6.

Make sure that you save your work to your Bavant Publishing Design database in the Database Files Folder.

Page 334-335: Additional Tables. Read the “BTW” sections on “copy the structure of a table” and “many to many relationships” (Pg. 335). A many-to-many relationship requires a third table that acts as the junction table between the other two tables.

Page 336-337: Creating the additional tables. To add a table to a database requires two steps. You must design and save the table first, and then enter or import the data. In this example, you are importing data from a text file and a “delimited” file (csv) that have already been created. It is very important that you make sure the field names are spelled correctly and look exactly as in the textbook. When importing existing data into a table the field names must match exactly.

Page 336 Step 2: You will select the “seminar.txt” data file from the “Other Files” folder.

Page 337 Step 7: You will select the “seminar offerings.csv” data file from the “Other Files” folder.

Page 338-339: Relating Several Tables. Steps 1-4 are very important. If the tables are not related correctly, it will not be possible to build the required reports.

Page 339 Step 4: Show your instructor the relationship window.

Page 340-342: Creating Additional Queries. The two queries you are creating will be used for the report and sub-report that will be created in this chapter.
Page 343-361: Creating a Report and Sub-report in Design View. You have already created reports using the Report Wizard and Layout View. This report will be created in “Design View”. The “design view” allows you to create a report from scratch to have complete control over the design, organization and format of the report. When a report is created in Design view, there are only two sections: Page Header and Detail.

Page 346-358: Adding Fields to a Report in Design View. You can add more than one field at a time to the report. To do so, select the first field and then hold the ctrl key down while selecting additional fields. Drag the selected fields to the report design. The fields will be aligned vertically.

Page 359-361: Adding a Sub-report. The sub-report is a separate report that is linked to the main report. When you add a sub-report to a report using the wizard, you initially must include the field in the sub-report that links to the main report. After the sub-report is linked, you can delete the linking field from the sub-report.

Page 363-364: Using the Can Grow Property. This is a very useful tool to easily make the field of a report more readable and professional. If the Can Grow property is set to Yes, data in a field can be spread over several lines.

Page 368-369: Adding Page Number and Date. Access is really adding a Text Box control to the report with an expression for the date and page number. If there is a Report Header section, Access places the page number and date in that section. If there is no Report Header section, then Access places them in the Detail section.

Page 378-382: Adding Totals and Sub-totals. Read the “plan ahead” section at bottom page 386 for determining calculations in a report. These calculations are usually added to the footer section of a report.

Page 384-388: Assigning a Conditional Value. Conditional value helps a report reflect different outcomes without creating multiple reports. The report output will only reflect the specific conditions as identified in the conditional value “argument”.

Self-check the answers in the Student Answer Key and show your instructor the following items:

☞____ Bavant Publishing Design Relationship Window
☞____ Book Rep Master List Report
☞____ Discount Report
☞____ Book Reps and Customers query
☞____ Seminar Offerings and Seminars query
Additional Chapter 6 Exercises and Assignments

Note: We are skipping the “Analyze, Correct, Improve” exercise for this chapter

Complete In the Lab exercise #1 (Backup Services) (pages 399-402). You must use the “service.txt” and “service requests.cxv” file located in your “Other Files” folder. Self-check the answers in the Student Answer Key and show your instructor the following items:

- Show your instructor the “Relationships” Window
- Show your instructor the “Service Rep Report” (this report must use the two queries created in Steps 4 and 5.
- Show your instructor the “Client Discount Report” (this report uses the “Service Reps and Clients” query as the basis for the report.)

Exam Study Assignment. Complete Consider this Your Turn problem #2 – Carel Landscaping Database (page 406). You must use the “Carel Services.txt” and “customers requests.csv” files located in your “Other Files” folder

- Show your instructor the Services Table from Step 1a
- Show your instructor the Customer Request Table from Step 1a
- Show your instructor the Step 1b Query
- Show your instructor the Step 1c Query
- Show your instructor the “Supervisor Master Report” from Step 1d

Make sure that you save your work to your Carel Landscaping database in the Database Files Folder.

Fill out a Test Request Form for Performance Exam 3.

A test request must be completed the class session prior to taking your test. Your test will then be ready for you when you get to class. Test request forms are in your classroom; ask your instructor to show you where they are located. Place your completed test request form in the appropriate box. Do not leave the test request in your folder. Be sure you have completed all required information on the form.

Test documents will be assessed using the Document Scoring Guide. To determine a grade, your documents will be assigned points based upon the requirements of the test problems.
Performance Exam 3 is an open-book/open note test and may include the following items:

<table>
<thead>
<tr>
<th>Queries using memo and date fields</th>
<th>Create and relate additional tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating a customized form with a subform</td>
<td>Create queries for reports</td>
</tr>
<tr>
<td>Adding date, memo, yes/no, and OLE fields to tables</td>
<td>Create Reports in design view</td>
</tr>
<tr>
<td>Creating and modifying forms with subforms</td>
<td>Format report controls</td>
</tr>
<tr>
<td>Using the Input Mask</td>
<td>Add and modify subreports</td>
</tr>
<tr>
<td>Changing tab order in forms</td>
<td>Modify section properties</td>
</tr>
<tr>
<td>Creating reports with sub-reports</td>
<td>Add titles, page numbers, totals and subtotals</td>
</tr>
</tbody>
</table>

Complete Performance Exam 3
Performance Exam 3 will be completed at the computer. You may use your textbook and samples of your documents as you complete the test. Refer to the Document Scoring Guide in this handout to determine how the test will be assessed.

Complete the Final Project (See Next Page)
You must create a relational database with the following minimum requirements. All tables, forms, reports, queries, and macros must be saved.
Final Project Requirements – 20 points:

Create a database using a topic of your choice. Your database should not just be a close copy of one of the textbook databases. You must design your own tables, forms, reports and queries.

You do not have to include all of the items below but you must include most of these. You may also substitute with your own choices to better reflect the data in your database.

- Create at least two tables that can be joined.
  - The tables must have referential integrity
- Include a minimum of five fields for each table.
  - Include at least one number type field and one date type field.
  - Other field types are your choice.
  - Fields should be formatted appropriately.
  - Some of the fields must contain validation rules.
  - Use an input mask on one or more fields
  - Use a “multi-value lookup” field on one or more fields
- Include a minimum of five records in one of the tables and a minimum of ten records in the other table.
- Create at least one form.
  - Include a form with sub-form
- Create reports for each table.
  - One report should include one or more fields from both tables.
  - One report should include grouped information.
  - One report should include a subreport
  - At least one report should have totals and/or subtotals
- Create at least five queries. All queries must be saved.
  - At least one query must include one or more fields from both tables.
- All reports and forms must be customized so they appear professional.
- You must submit your completed database data file and Word document containing a brief explanation of your database and what types of tables, forms, and reports it includes. Your explanation should include a summary of which tables have a relationship and which fields have validation rules.

Your database project will be evaluated for efficient design, creativity, inclusion of most of the above items, and correct use of Access features.

Remember: Your database should not just be a close copy of one of the textbook databases.

Congratulations! You have completed Beginning Access (CAS 140).
<table>
<thead>
<tr>
<th>Week 1</th>
<th>Points Possible</th>
<th>Points Earned</th>
<th>Week 3</th>
<th>Points Possible</th>
<th>Points Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary Step - Instructor must Check Folder Structure on USB</td>
<td>2</td>
<td></td>
<td>Analyze, Correct and Improve - Corrected Criteria Query and Improved Sort Query - Pg. 128</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Chapter 1 - (self-check your answers)</td>
<td>1</td>
<td></td>
<td>In the Lab #1 - Dartt Offsite Services</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Bavant Publishing Book Rep Table</td>
<td>2</td>
<td></td>
<td>Dartt Offsite Services Lab 2-1 Step 1 Query pg. 129</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Bavant Publishing Customer Table</td>
<td>2</td>
<td></td>
<td>Dartt Offsite Services Lab 2-1 Step 2 Query pg. 129</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Bavant Publishing Customer Query</td>
<td>2</td>
<td></td>
<td>Dartt Offsite Services Lab 2-1 Step 3 Query pg. 129</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Bavant Publishing Customer Financial Report</td>
<td>2</td>
<td></td>
<td>Dartt Offsite Services Lab 2-1 Step 4 Query pg. 130</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Analyze, Correct and Improve - Movie table Pg. 67</td>
<td>3</td>
<td></td>
<td>Dartt Offsite Services Lab 2-1 Step 6 Query pg. 130</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>In the Lab #1 - Dartt Offsite Services (self-check your answers)</td>
<td>1</td>
<td></td>
<td>Dartt Offsite Services Lab 2-1 Step 7 Query pg. 130</td>
<td>3</td>
<td></td>
</tr>
<tr>
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<td>2</td>
<td></td>
<td>Dartt Offsite Services Lab 2-1 Step 8 Query pg. 130</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Dartt Offsite Services Client Table</td>
<td>2</td>
<td></td>
<td>Dartt Offsite ServicesLab 2-1 Step 9 Form pg. 130</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Dartt Offsite Services Client Query</td>
<td>2</td>
<td></td>
<td>Dartt Offsite Services Lab 2-1 Step 10 Query pg. 130</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Dartt Offsite Services Client Financial Report</td>
<td>2</td>
<td></td>
<td>Dartt Offsite Services Lab 2-1 State-Services Crosstab Query pg. 130</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**5 hrs.**

<table>
<thead>
<tr>
<th>Week 2</th>
<th>Points Possible</th>
<th>Points Earned</th>
<th>Week 3</th>
<th>Points Possible</th>
<th>Points Earned</th>
</tr>
</thead>
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**Chapter 3 - (self-check your answers)**

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**Week 6**

**Chapter 4 - (self-check your answers)**

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**Week 7**

**TEST 2 (41 pts)**

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**Week 8**

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