

```
1 </DOCTYPE html>
2 <html>
3 <head>
4 <title>Portfolio</title>
5 <style type = "text/css">
6 body
7 {
8   background-color: beige;
9   color: navy;
10 }
11 hi
12 {
13   text-align: center;
14   font-size: 3em;
15 }
16 </style>
17 </head>
18 <body>
19 <h1>Portfolio</h1>
20 <a href="portfolioresume.html">Click here to see resume</a><br>
21 <a href="portfoliocourses.html">Click here to see courses</a><br>
22 <a href="computingskills.html">Click here to see evidence of my computing skills</a><br>
23 </body>
24 </html>
```

first.accdb

This is what you put in when you want to download a database.  
first.accdb

It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back! Refresh Firefox...

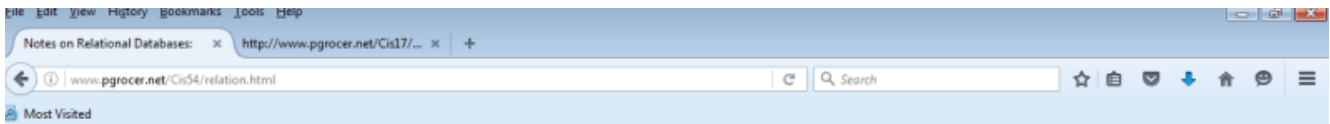
```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <title>Portfolio</title>
5 <style type = "text/css">
6 body
7 {
8     background-color: beige;
9     color: navy;
10 }
11 h1
12 {
13     text-align: center;
14     font-size: 3em;
15 }
16 </style>
17 </head>
18 <body>
19 <h1>Portfolio</h1>
20 <a href="portfolioresume.html">Click here to see resume</a><br>
21 <a href="portfoliocourses.html">Click here to see courses</a><br>
22 <a href="computingskills.html">Click here to see evidence of my computing skills</a><br>
23 </body>
24 </html>
```

Put it up on cisweb in your area.

CISweb

first, acclb

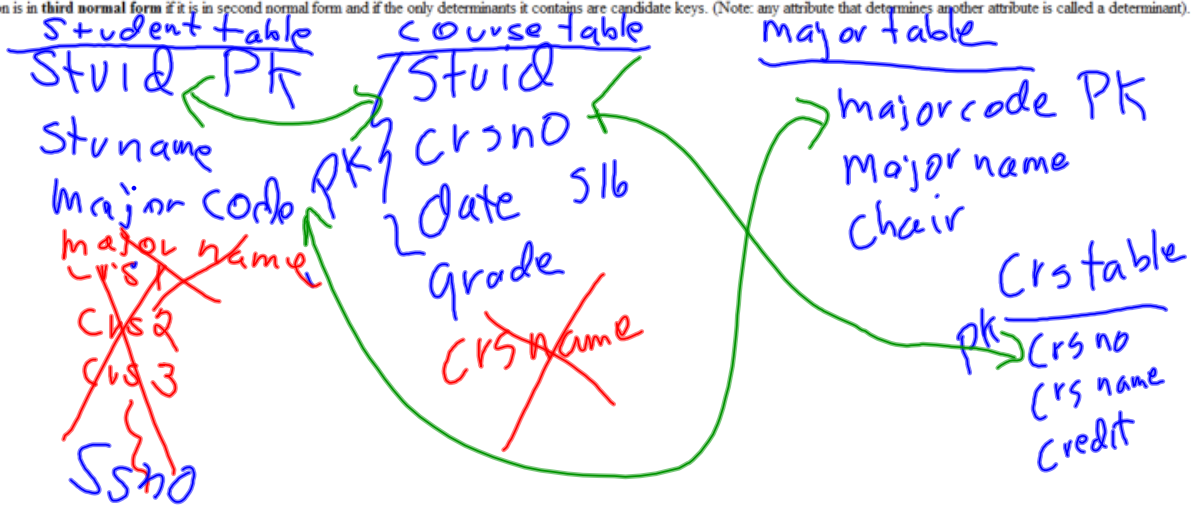
It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back! Refresh Firefox...



**Notes on Relational Databases:**

A database can consist of multiple tables/files. These tables/files are related to each other in some way so that the programmer or developer can access information from multiple table/files at the same time. A database management system is the database and its functionality. In today's PC environment, the model of relating the table/files within a database is the relational database model. Things that must be considered in a relational database:

- Analyze the data and determine how to design the files - consider whether the data is in a one to one relationship, a one to many relationship or a many to many relationship.
- Consider functional dependence: An attribute B, is functionally depended on another attribute, A if a value for A determines a single value for B at any one time.
- The primary key has all attributes in the table functionally dependent upon it - to simplify you can think of the primary key as the minimum collection of fields that will get you one and only one record from the table/file.
- We must also consider the rules of normalization and establish the relationships so that the database is in third normal form.
- A relation is in **first normal form** if it does not contain repeating groups. *crs*
- A relation is in **second normal form** if it is in first normal form and no non-key attribute is dependent on only a portion of the primary key. (Note: an attribute is a non-key attribute if it is not a part of the primary key).
- A relation is in **third normal form** if it is in second normal form and if the only determinants it contains are candidate keys. (Note: any attribute that determines another attribute is called a determinant).



It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back! Refresh Firefox... x

**I want to keep the following information:**

Information about the student:

- StudentId
- StudentName
- StudentCity
- StudentState
- StudentGPA

Information about the department:

- DeptCode (department the student is enrolled in as in CI)
- DepartmentName
- DepartmentChair

Information about the courses available at the college:

- CourseNumber
- CourseName
- NumCredits

- And then I want to keep information about the student taking a course including the semester and year they took it and the grade.
- SemYr
- Grade

When I talked about in class was major instead of dept. Major and dept are meaning the same thing in this example. Major CI or dept CI.

End of document. ■

The screenshot shows the Microsoft Access Design view for a table named 'Student'. The ribbon includes FILE, HOME, CREATE, EXTERNAL DATA, DATABASE TOOLS, and DESIGN. The DESIGN ribbon has groups for Views, Tools, Property Sheet, Create Data Macros, Rename/Delete Macro, Relationships, and Object Dependencies. The 'All Tables' pane on the left lists 'Student : Table' as the selected table. The main area is a table design grid with columns for Field Name, Data Type, and Description (Optional). The fields are: StudentId (Short Text), StudentName (Short Text), StudentCity (Short Text), StudentState (Short Text), DeptCode (Short Text), and StudentGPA (Number). Below the grid is the 'Field Properties' section with a 'General' tab and a 'Lookup' property. A status bar at the bottom right contains the text: 'The field description is optional. It helps you describe the field and is also displayed in the status bar when you select this field on a form. Press F1 for help on descriptions.'

Field Name	Data Type	Description (Optional)
StudentId	Short Text	
StudentName	Short Text	
StudentCity	Short Text	
StudentState	Short Text	
DeptCode	Short Text	
StudentGPA	Number	

The screenshot shows the Microsoft Access interface in Design view for a table named 'StudentCourse'. The ribbon includes 'TABLE TOOLS' and 'DESIGN'. The 'All Tables' pane on the left lists 'Student', 'Department', 'StudentCourse', and 'Course'. The main area displays a table with the following fields:

Field Name	Data Type	Description (Optional)
StudentId	Short Text	
CourseNumber	Short Text	
SemYr	Short Text	
Grade	Short Text	

A blue text box is overlaid on the table, stating: "Studentid is short text of 5 characters. I will use Studentid in the Student table and the Student Course table and so they should both be Short Text and 5 characters."

Below the table is the 'Field Properties' pane, showing the 'General' tab with the following settings:

Property	Value
Field Size	5
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	Yes
Allow Zero Length	Yes
Indexed	No
Unicode Compression	No
IME Mode	No Control
IME Sentence Mode	None
Text Align	General

A small note at the bottom right of the field properties pane reads: "The data type determines the kind of values that users can store in the field. Press F1 for help on data types."

student4tableexample-1 : Database- F:\student4tableexample-1.accdb (Access 2007 - 2013 file format) - Access

FILE HOME CREATE EXTERNAL DATA DATABASE TOOLS DESIGN

View Primary Key Builder Test Validation Rules Delete Rows Property Indexes Sheet Show/Hide Create Data Macros Rename/Delete Macro Relationships Object Dependencies

All Tables

Field Name	Data Type	Description (Optional)
Studentid	Short Text	
CourseNumber	Short Text	
SemYr	Short Text	
Grade	Short Text	

CourseNumber is ShortText of 6 and should be the same in the Course table.

Field Properties

General	Lookup
Field Size	6
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	Yes
Allow Zero Length	Yes
Indexed	No
Unicode Compression	Yes
IME Mode	No Control
IME Sentence Mode	None
Text Align	General

The data type determines the kind of values that users can store in the field. Press F1 for help on data types.

Design view. F6 = Switch panes. F1 = Help.

NUM LOCK 11:34 AM 4/26/2016

The screenshot shows the Microsoft Access interface with the 'StudentCourse' table open in Datasheet View. The table has the following data:

StudentId	CourseNuml	SemYr	Grade	Click to Add
11111	CIS120	S10	A	
11111	MAR111	S10	B	
12345	CIS121	F09	B	
22222	ACC111	F09	B	
22222	CIS122	F09	C	
23456	CIS120	F09	A	
23456	CIS121	F09	A-	
33333	ACC111	F09	F	
33333	ACC111	S10	C	
33333	MAR111	S10	C	

The interface includes a ribbon with 'TABLE TOOLS' (FIELDS, TABLE) and 'TABLE TOOLS - RECORDS' (New, Save, Delete, Refresh, Find, Replace, Go To, Select). A task pane on the left shows 'All Tables' with a tree view including 'Student', 'Department', 'StudentCourse', and 'Course'. The status bar at the bottom indicates 'Record: 1 of 10' and the system tray shows the time as 11:35 AM on 4/26/2016.



The screenshot shows the Microsoft Access Design view for a table named 'Course'. The ribbon includes FILE, HOME, CREATE, EXTERNAL DATA, DATABASE TOOLS, and TABLE TOOLS. The TABLE TOOLS ribbon is active, showing options like Primary Key, Insert Rows, Delete Rows, Property Indexes Sheet, Create Data Macros, Rename/Delete Macro, Relationships, and Object Dependencies. The 'All Tables' pane on the left lists 'Student', 'Department', 'StudentCourse', and 'Course'. The 'Course' table is selected, and its design grid is visible with the following fields:

Field Name	Data Type	Description (Optional)
CourseNumber	Short Text	
CourseName	Short Text	
NumCredits	Number	

The 'Field Properties' pane at the bottom shows the 'General' tab for the selected field. The 'Field Size' is set to 6. Other properties include Format, Input Mask, Caption, Default Value, Validation Rule, Validation Text, Required (Yes), Allow Zero Length (Yes), Indexed (Yes (No Duplicates)), Unicode Compression (No), IME Mode (No Control), IME Sentence Mode (None), and Text Align (General). A note on the right states: 'The data type determines the kind of values that users can store in the field. Press F1 for help on data types.'

Design view. F6 = Switch panes. F1 = Help. NUM LOCK 11:35 AM 4/26/2016

The screenshot shows the Microsoft Access interface with the 'Course' table open in Datasheet View. The table has three columns: CourseNuml, CourseNami, and NumCredits. The data is as follows:

CourseNuml	CourseNami	NumCredits
ACC111	Accounting I	4
CIS120	Programming I	3
CIS121	Operating Syst	3
CIS122	Internet Devel	3
MAR111	Marketing	3

The interface includes a ribbon with 'TABLE TOOLS' (FIELDS and TABLE tabs), a task pane on the left showing 'All Tables', and a status bar at the bottom indicating 'Record: 14 of 5'.

studentTableexample-1 : Database - F:\studentTableexample-1.accdb (Access 2007 - 2013 file format) - Access

FILE HOME CREATE EXTERNAL DATA DATABASE TOOLS TABLE TOOLS DESIGN

View Primary Key Builder Test Validation Rules Insert Rows Delete Rows Property Indexes Sheet Show/Hide Create Data Macros Field, Record & Table Events Rename/Delete Macro Relationships Object Dependencies Relationships

All Tables

- Student
  - Student : Table
- Department
  - Department : Table
- StudentCourse
  - StudentCourse : Table
- Course
  - Course : Table

Field Name	Data Type	Description (Optional)
StudentId	Short Text	
StudentName	Short Text	
StudentCity	Short Text	
StudentState	Short Text	
DeptCode	Short Text	
StudentGPA	Number	

DeptCode is 2 characters and therefore should be the same in the Department.

Field Properties

General Lookup

Field Size	2
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	No
Allow Zero Length	Yes
Indexed	Yes (Duplicates OK)
Unicode Compression	Yes
IME Mode	No Control
IME Sentence Mode	None
Text Align	General

The data type determines the kind of values that users can store in the field. Press F1 for help on data types.

Design view. F6 = Switch panes. F1 = Help.

NUM LOCK 11:36 AM 4/26/2016

The screenshot shows the Microsoft Access interface in Query Design view. The ribbon includes FILE, HOME, CREATE, EXTERNAL DATA, DATABASE TOOLS, and DESIGN. The DESIGN ribbon has options like Union, Pass-Through, Data Definition, Show Table, Insert Rows, Delete Rows, Insert Columns, Delete Columns, Builder, and Returns. The 'All Tables' pane on the left lists tables: Student, Department, StudentCourse, and Course. The main workspace shows two tables: 'Student' with fields StudentId, StudentName, StudentCity, StudentState, and DeptCode; and 'StudentCourse' with fields StudentId, CourseNumber, SemYr, and Grade. A 'Show Table' dialog box is open, showing a list of tables with 'StudentCourse' selected. A blue text annotation says 'I need to link these two tables based on the StudentId field.' The bottom of the screen shows the Windows taskbar with the time 11:37 AM on 4/26/2016.

The screenshot shows the Microsoft Access interface in Query Design view. The ribbon includes FILE, HOME, CREATE, EXTERNAL DATA, DATABASE TOOLS, and QUERY TOOLS. The QUERY TOOLS ribbon has sub-tabs for DESIGN and QUERY SETUP. The DESIGN tab contains various tools like Union, Pass-Through, Data Definition, Show Table, Insert Rows, Delete Rows, Insert Columns, Delete Columns, Builder, and Return. The QUERY SETUP tab has Totals, Parameters, and Table Names. The main workspace shows two tables: 'Student' and 'StudentCourse'. The 'Student' table has fields: StudentId, StudentName, StudentCity, StudentState, and DeptCode. The 'StudentCourse' table has fields: StudentId, CourseNumber, SemYr, and Grade. A relationship line connects the 'StudentId' field in the 'Student' table to the 'StudentId' field in the 'StudentCourse' table. A blue text annotation says: "To make the link drag StudentId from the student table on top of StudentId on the StudentCourse table." The bottom of the screen shows the Windows taskbar with the date and time: 11:38 AM 4/26/2016.

The screenshot shows the Microsoft Access interface with the 'Query Design' view selected. The 'All Tables' pane on the left lists 'Student', 'Department', 'StudentCourse', and 'Course'. The design grid for 'Query1' is as follows:

Field	StudentId	StudentName	CourseNumber	SemYr	Grade				
Table:	Student	Student	StudentCourse	StudentCourse	StudentCourse				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:									
or:									

Bring down the fields you want - note you can also use the criteria and or line just as we did earlier in the semester.

The screenshot shows the Microsoft Access interface for a database named 'studenttableexample-1'. The ribbon includes 'FILE', 'HOME', 'CREATE', 'EXTERNAL DATA', and 'DATABASE TOOLS'. The 'DATABASE TOOLS' ribbon is active, showing options for filtering, sorting, and finding records. On the left, the 'All Tables' pane lists 'Student', 'Department', 'StudentCourse', and 'Course' tables. The main window displays a table with the following data:

StudentId	StudentName	CourseNum	SemYr	Grade
11111	Jane Costa	CIS120	S10	A
11111	Jane Costa	MAR111	S10	B
123456	John Doe	CIS121	F09	B
22222	David Smith	ACC111	F09	B
22222	David Smith	CIS122	F09	C
23456	Linda Brown	CIS120	F09	A
23456	Linda Brown	CIS121	F09	A-
33333	James Souza	ACC111	F09	F
33333	James Souza	ACC111	S10	C
33333	James Souza	MAR111	S10	C

The status bar at the bottom indicates 'Record: 14 of 10' and 'No Filter'. The Windows taskbar at the very bottom shows the system tray with the time '11:40 AM' and date '4/26/2016'.

The screenshot shows the Microsoft Access interface in Query Design view. The ribbon includes FILE, HOME, CREATE, EXTERNAL DATA, DATABASE TOOLS, and QUERY TOOLS. The QUERY TOOLS ribbon has sub-tabs for DESIGN and QUERY SETUP. The DESIGN tab contains options like Union, Pass-Through, Data Definition, Insert Rows, Delete Rows, Insert Columns, Delete Columns, Totals, Parameters, and Table Names. The QUERY SETUP tab has a Return dropdown set to 'All'. The 'All Tables' pane on the left lists tables: Student, Department, StudentCourse, and Course. The main design area shows two tables: 'Student' with fields StudentId, StudentName, StudentCity, StudentState, and DeptCode; and 'StudentCourse' with fields StudentId, CourseNumber, SemYr, and Grade. A text annotation reads 'If I do not link I get every combination.' Below the design area is a table grid with columns for fields from both tables. The first row shows the field names, and the second row has checkboxes for 'Show' and 'Criteria'.

Field:	StudentId	StudentName	CourseNumber	SemYr	Grade				
Table:	Student	Student	StudentCourse	StudentCourse	StudentCourse				
Sort:									
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:									
or:									



student4tableexample-1 : Database- F:\student4tableexample-1.accdb (Access 2007 - 2013 file format) - Access

FILE HOME CREATE EXTERNAL DATA DATABASE TOOLS

Filter Ascending Selection Filter Descending Advanced Refresh Save Spelling Find Replace Go To Select

Views Clipboard Sort & Filter Records Find Text Formatting

All Tables

- Student
  - Student : Table
- Department
  - Department : Table
- StudentCourse
  - StudentCourse : Table
- Course
  - Course : Table

StudentId	StudentName	CourseNum	SemYr	Grade
11111	Jane Costa	CIS120	S10	A
12345	John Doe	CIS120	S10	A
22222	David Smith	CIS120	S10	A
23456	Linda Brown	CIS120	S10	A
33333	James Souza	CIS120	S10	A
11111	Jane Costa	MAR111	S10	B
12345	John Doe	MAR111	S10	B
22222	David Smith	MAR111	S10	B
23456	Linda Brown	MAR111	S10	B
33333	James Souza	MAR111	S10	B
11111	Jane Costa	CIS121	F09	B
12345	John Doe	CIS121	F09	B
22222	David Smith	CIS121	F09	B
23456	Linda Brown	CIS121	F09	B
33333	James Souza	CIS121	F09	B
11111	Jane Costa	ACC111	F09	B
12345	John Doe	ACC111	F09	B
22222	David Smith	ACC111	F09	B
23456	Linda Brown	ACC111	F09	B
33333	James Souza	ACC111	F09	B
11111	Jane Costa	CIS122	F09	C
12345	John Doe	CIS122	F09	C
22222	David Smith	CIS122	F09	C
23456	Linda Brown	CIS122	F09	C
33333	James Souza	CIS122	F09	C
11111	Jane Costa	CIS120	F09	A
12345	John Doe	CIS120	F09	A
22222	David Smith	CIS120	F09	A
23456	Linda Brown	CIS120	F09	A
33333	James Souza	CIS120	F09	A
11111	Jane Costa	CIS121	F09	A-
12345	John Doe	CIS121	F09	A-
22222	David Smith	CIS121	F09	A-
23456	Linda Brown	CIS121	F09	A-
33333	James Souza	CIS121	F09	A-
11111	Jane Costa	ACC111	F09	F
12345	John Doe	ACC111	F09	F
22222	David Smith	ACC111	F09	F

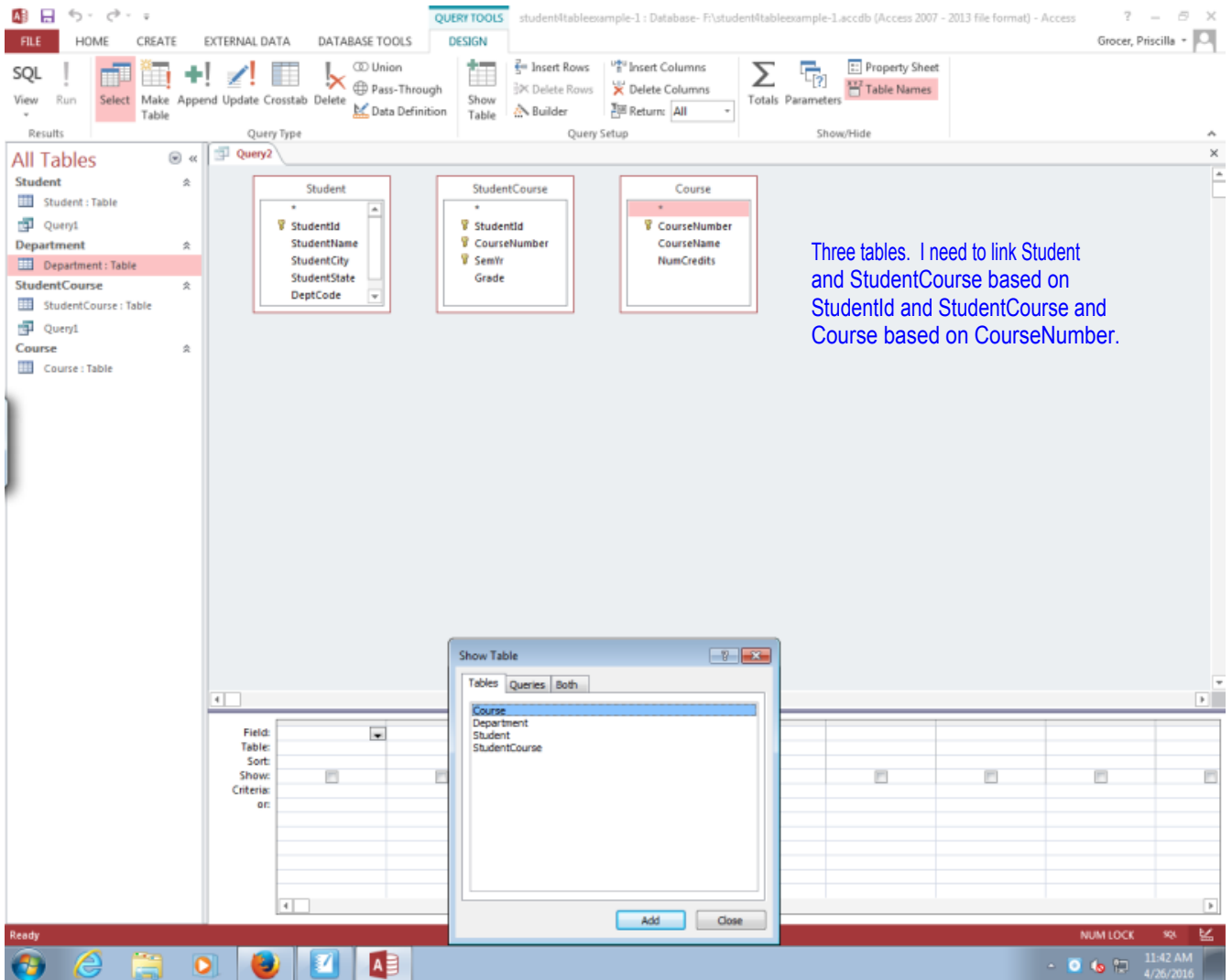
Record: 14 of 50

Ready NUM LOCK 11:40 AM 4/26/2016

Every possible combination.

The screenshot shows Microsoft Access in Design view for a query named 'Query1'. The design grid is as follows:

Field:	StudentId	StudentName	CourseNumber	SemYr	Grade				
Table:	Student	Student	StudentCourse	StudentCourse	StudentCourse				
Sort:									
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:									
on:									



student\tableexample-1 : Database- F:\student\tableexample-1.accdb (Access 2007 - 2013 File format) - Access

QUERY TOOLS

DESIGN

Query Type: Query Setup

Query2

Student

- StudentId
- StudentName
- StudentCity
- StudentState
- DeptCode

StudentCourse

- StudentId
- CourseNumber
- SemYr
- Grade

Course

- CourseNumber
- CourseName
- NumCredits

Field:	StudentId	CourseNumber	CourseName	Grade				
Table:	Student	StudentCourse	Course	StudentCourse				
Sort:								
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:								
or:								

Ready

NUM LOCK 11:43 AM 4/26/2016

student4tableexample-1 : Database- F:\student4tableexample-1.accdb (Access 2007 - 2013 file format) - Access

FILE HOME CREATE EXTERNAL DATA DATABASE TOOLS

Filter Ascending Descending Selection Advanced Refresh All Save Delete More

Records

Find Replace Go To Select

Calibri 11

B I U

Text Formatting

All Tables

- Student
  - Student : Table
  - Query1
- Department
  - Department : Table
- StudentCourse
  - StudentCourse : Table
  - Query1
- Course
  - Course : Table

StudentId	CourseNuml	CourseNaml	Grade
11111	CIS120	Programming I	A
11111	MAR111	Marketing	B
123	CIS121	Operating Syst	B
22222	ACC111	Accounting I	B
22222	CIS122	Internet Devel	C
23456	CIS120	Programming I	A
23456	CIS121	Operating Syst	A
33333	ACC111	Accounting I	F
33333	ACC111	Accounting I	C
33333	MAR111	Marketing	C

Record: 14 of 10

NUM LOCK

11:43 AM 4/26/2016

The screenshot shows the Microsoft Access interface in Design view for a query named 'Query3'. The 'All Tables' pane on the left lists the following tables and their fields:

- Student**: StudentId, StudentName, StudentCity, StudentState, DeptCode
- Department**: DeptCode, DepartmentName, DepartmentChair
- StudentCourse**: StudentId, CourseNumber, SemYr, Grade
- Course**: CourseNumber, CourseName, NumCredits

The design view shows the following relationships:

- A one-to-many relationship between **Student** and **StudentCourse** on the **StudentId** field.
- A one-to-many relationship between **StudentCourse** and **Course** on the **CourseNumber** field.
- A one-to-many relationship between **Department** and **Student** on the **DeptCode** field.

A blue text annotation is present in the design view: "And now I will also link DeptCode on Student to DeptCode on the Department." This indicates a relationship that is not yet fully defined in the diagram.

The bottom of the screenshot shows the Windows taskbar with the system tray displaying the time as 11:45 AM on 4/26/2016.

Microsoft Access interface showing a query design grid for 'Query3'. The design grid includes tables Student, Department, StudentCourse, and Course. The 'Field' row shows fields: StudentId, StudentName, DeptCode, DeptCode, DepartmentName, CourseNumber, CourseName, and Grade. The 'Table' row shows the source table for each field: Student, Student, Student, Department, Department, StudentCourse, Course, and StudentCourse. The 'Show' row has checkboxes for each field, all of which are checked. The 'Criteria' and 'on' rows are empty.

Field:	StudentId	StudentName	DeptCode	DeptCode	DepartmentName	CourseNumber	CourseName	Grade
Table:	Student	Student	Student	Department	Department	StudentCourse	Course	StudentCourse
Sort:								
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:								
on:								

studentTablesample-1 : Database- F:\studentTablesample-1.accdb (Access 2007 - 2013 file format) - Access

FILE HOME CREATE EXTERNAL DATA DATABASE TOOLS

Filter Ascending Descending Selection Advanced Remove Sort Toggle Filter Refresh All Delete More Find Go To Select

Calibri 11 Bold Italic Underline Text Formatting

All Tables

- Student
  - Student : Table
  - Query1
  - Query2
- Department
  - Department : Table
- StudentCourse
  - StudentCourse : Table
  - Query1
  - Query2
- Course
  - Course : Table
  - Query2

Studentid	StudentNar	Student_Deg	Department	Department	CourseNum	CourseNam	Grade
11111	Jane Costa	CI	CI	Computer Info	CIS120	Programming I	A
123	John Doe	CI	CI	Computer Info	CIS121	Operating Syst	B
22222	David Smith	BU	BU	Business Admi	ACC111	Accounting I	B
22222	David Smith	BU	BU	Business Admi	CIS122	Internet Devel	C
23456	Linda Brown	CI	CI	Computer Info	CIS120	Programming L	A
23456	Linda Brown	CI	CI	Computer Info	CIS121	Operating Syst	A
33333	James Souza	BU	BU	Business Admi	ACC111	Accounting I	F
33333	James Souza	BU	BU	Business Admi	ACC111	Accounting I	C
33333	James Souza	BU	BU	Business Admi	MAR111	Marketing	C

Record: 14 of 10

Ready NUM LOCK 11:45 AM 4/26/2016



student4tableexample-1 : Database- F:\student4tableexample-1.accdb (Access 2007 - 2013 file format) - Access

FILE HOME CREATE EXTERNAL DATA DATABASE TOOLS

Filter Ascending Descending Selection Advanced Refresh Save Spelling Find Replace Go To Select

Views Clipboard Sort & Filter Records Find Text Formatting

**All Tables**

- Student
  - Student : Table
  - Query1
  - Query2
- Department
  - Department : Table
- StudentCourse
  - StudentCourse : Table
  - Query1
  - Query2
- Course
  - Course : Table
  - Query2

Studentid	StudentName	Student.DeptCode	Department.DeptCode	DepartmentName	CourseNum	CourseName
11111	Jane Costa	CI	CI	Computer Information System	CIS120	Programming L A
11111	Jane Costa	CI	CI	Computer Information System	MAR111	Marketing B
12345	John Doe	CI	CI	Computer Information System	CIS121	Operating Syst B
22222	David Smith	BU	BU	Business Administration	ACC111	Accounting I B
22222	David Smith	BU	BU	Business Administration	CIS122	Internet Devel C
23456	Linda Brown	CI	CI	Computer Information System	CIS120	Programming L A
23456	Linda Brown	CI	CI	Computer Information System	CIS121	Operating Syst A
33333	James Souza	BU	BU	Business Administration	ACC111	Accounting I F
33333	James Souza	BU	BU	Business Administration	ACC111	Accounting I C
33333	James Souza	BU	BU	Business Administration	MAR111	Marketing C

Record: 14 of 10

Ready NUM LOCK 11:47 AM 4/26/2016

The screenshot displays the Microsoft Access interface. The top ribbon shows the 'QUERY TOOLS' tab with the 'DESIGN' view selected. The 'All Tables' pane on the left lists the tables: Student, Department, StudentCourse, and Course. The main area shows the 'Query3' design grid with the following fields and relationships:

- Student** (Primary Key): StudentId, StudentName, StudentCity, StudentState, DeptCode
- Department** (Primary Key): DeptCode, DepartmentName, DepartmentChair
- StudentCourse** (Primary Key): StudentId, CourseNumber, SemYr, Grade
- Course** (Primary Key): CourseNumber, CourseName, NumCredits

Relationships are shown as lines connecting the primary keys to the foreign keys in the other tables. The 'Query3' data table is shown below the design grid with the following columns and criteria:

Field:	StudentId	StudentName	DeptCode	DeptCode	DepartmentName	CourseNumber	CourseName	Grade
Table:	Student	Student	Student	Department	Department	StudentCourse	Course	StudentCourse
Sort:								
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			"CI"					"A"
or:								

Testing DeptCode = "CI" and Grade = "A"

The screenshot shows the Microsoft Access interface. The title bar indicates the file path: studentTableexample-1 : Database- F:\studentTableexample-1.accdb (Access 2007 - 2013 file format) - Access. The ribbon includes FILE, HOME, CREATE, EXTERNAL DATA, and DATABASE TOOLS. The DATABASE TOOLS ribbon is active, showing options for Filter, Sort & Filter, Records, Find, and Text Formatting. The left-hand pane shows a list of tables and queries under 'All Tables', including Student, Department, StudentCourse, and Course. The main window displays a query named 'Query3' with the following data:

StudentId	StudentName	Student.DeptCode	Department.DeptCode	DepartmentName	CourseNum	CourseName
11111	Jane Costa	CI	CI	Computer Information System	CIS120	Programming L A
23456	Linda Brown	CI	CI	Computer Information System	CIS120	Programming L A

The status bar at the bottom shows 'Record: 1 of 2' and the system tray includes the date and time: 11:50 AM 4/26/2016.

The screenshot displays the Microsoft Access interface in Design View for a query named 'Query3'. The design grid is as follows:

Field:	StudentId	StudentName	DeptCode	DeptCode	DepartmentName	CourseNumber	CourseName	Grade
Table:	Student	Student	Student	Department	Department	StudentCourse	Course	StudentCourse
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			"CI"					"B"
on:								

Blue text annotation: DeptCode of "CI" OR Grade of "B"

Windows taskbar: Ready, NUM LOCK, 11:50 AM, 4/26/2016

studenttableexample-1 : Database- F:\studenttableexample-1.accdb (Access 2007 - 2013 file format) - Access

FILE HOME CREATE EXTERNAL DATA DATABASE TOOLS

Filter Ascending Selection - Descending Advanced - Refresh All - Save Delete - More - Find Go To - Select - Replace

Calibri 11

Views Clipboard Sort & Filter Records Find Text Formatting

All Tables

- Student
  - Student : Table
  - Query1
  - Query2
  - Query3
- Department
  - Department : Table
  - Query3
- StudentCourse
  - StudentCourse : Table
  - Query1
  - Query2
  - Query3
- Course
  - Course : Table
  - Query2
  - Query3

Studentid	StudentNmr	Student.DeptCode	Department.DeptCode	DepartmentName	CourseNuml	CourseNami	Gr
11111	Jane Costa	CI	CI	Computer Information Syster	CIS120	Programming L	A
11111	Jane Costa	CI	CI	Computer Information Syster	MAR111	Marketing	B
12345	John Doe	CI	CI	Computer Information Syster	CIS121	Operating Syst	B
22222	David Smith	BU	BU	Business Administration	ACC111	Accounting I	B
23456	Linda Brown	CI	CI	Computer Information Syster	CIS120	Programming L	A
23456	Linda Brown	CI	CI	Computer Information Syster	CIS121	Operating Syst	A

CI or B

Record: 1 of 6

The screenshot shows the Microsoft Access interface in Design view for a query named 'Query3'. The database contains four tables: Student, Department, StudentCourse, and Course. The relationships are as follows: Student is linked to Department (DeptCode), StudentCourse is linked to Student (StudentId) and Department (DeptCode), and StudentCourse is linked to Course (CourseNumber). The query design grid at the bottom shows the following fields and criteria:

Field:	StudentId	StudentName	DeptCode	DepartmentName	CourseNumber	SemYr	Grade	CourseName
Table:	Student	Student	Department	Department	StudentCourse	StudentCourse	StudentCourse	Course
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			"C"		"CIS120"		"B"	
or:			"C"		"CIS120"			

DeptCode has to be "C" and in edition either a Grade of "B" or a CourseNumber of "CIS120"

The screenshot shows the Microsoft Access Query Design View for a query named 'Query4'. The design grid shows four tables: Student, Department, StudentCourse, and Course. Lines connect Student to StudentCourse (on StudentId), Student to Department (on DeptCode), and StudentCourse to Course (on CourseNumber). A handwritten note in green says 'CI + either (CIS120 or B)'. Below the design view is a table grid with columns for StudentId, StudentName, DeptCode, DepartmentName, CourseNumber, Semlr, Grade, and CourseName. The 'Criteria' row has the following values: StudentId (checkbox checked), StudentName (checkbox checked), DeptCode ('CI'), DepartmentName (checkbox checked), CourseNumber ('CIS120'), Semlr (checkbox checked), Grade ('B'), and CourseName (checkbox checked).

Field:	StudentId	StudentName	DeptCode	DepartmentName	CourseNumber	Semlr	Grade	CourseName
Table:	Student	Student	Department	Department	StudentCourse	StudentCourse	StudentCourse	Course
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			'CI'		'CIS120'		'B'	
on:			'CI'					

The screenshot shows the Microsoft Access interface. The title bar reads "studentTableexample-1 : Database- F:\studentTableexample-1.accdb (Access 2007 - 2013 file format) - Access". The ribbon includes FILE, HOME, CREATE, EXTERNAL DATA, and DATABASE TOOLS. The main window displays a query named "Query3" with the following data:

StudentId	StudentName	DeptCode	Department	CourseNum	SemYr	Grade	CourseName
11111	Jane Costa	CI	Computer Info	CIS120	S10	A	Programming L
123456	John Doe	CI	Computer Info	CIS121	F09	B	Operating Syst
23456	Linda Brown	CI	Computer Info	CIS120	F09	A	Programming L

The left-hand pane shows a list of tables and queries under categories: Student, Department, StudentCourse, and Course. The status bar at the bottom indicates "Records: 14 | 1 of 4" and "No Filter". The Windows taskbar at the bottom shows the system tray with the time "11:56 AM" and date "4/26/2016".



