

CIS120/17 Course Page

www.pgrocer.net/PFGCIS120.html

Programming: Logic, Design and Implementation CIS120/17

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Examples
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Audio/lectures

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Weekly schedule
Assignment summary

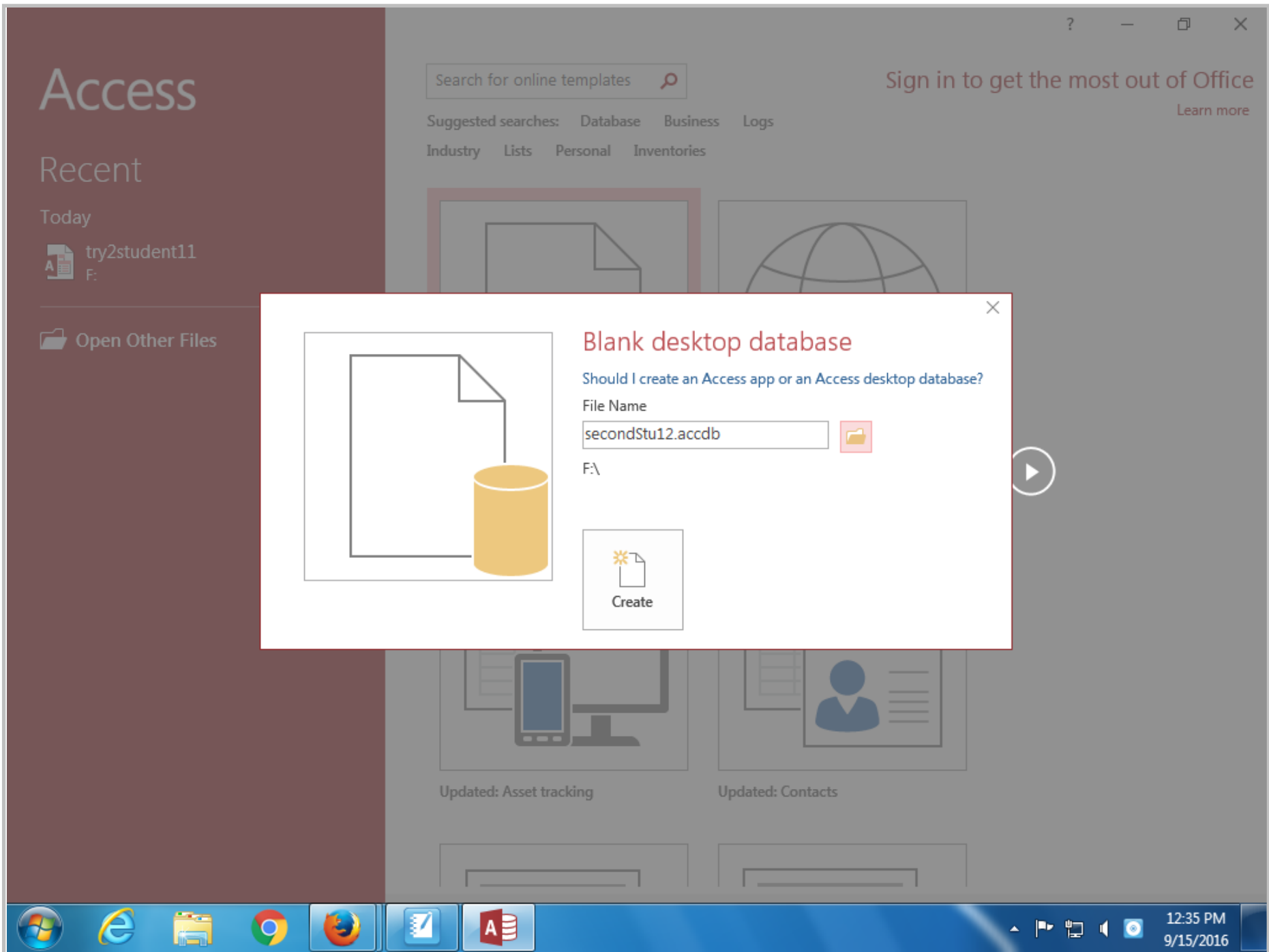
Links:
Links & Tutorials

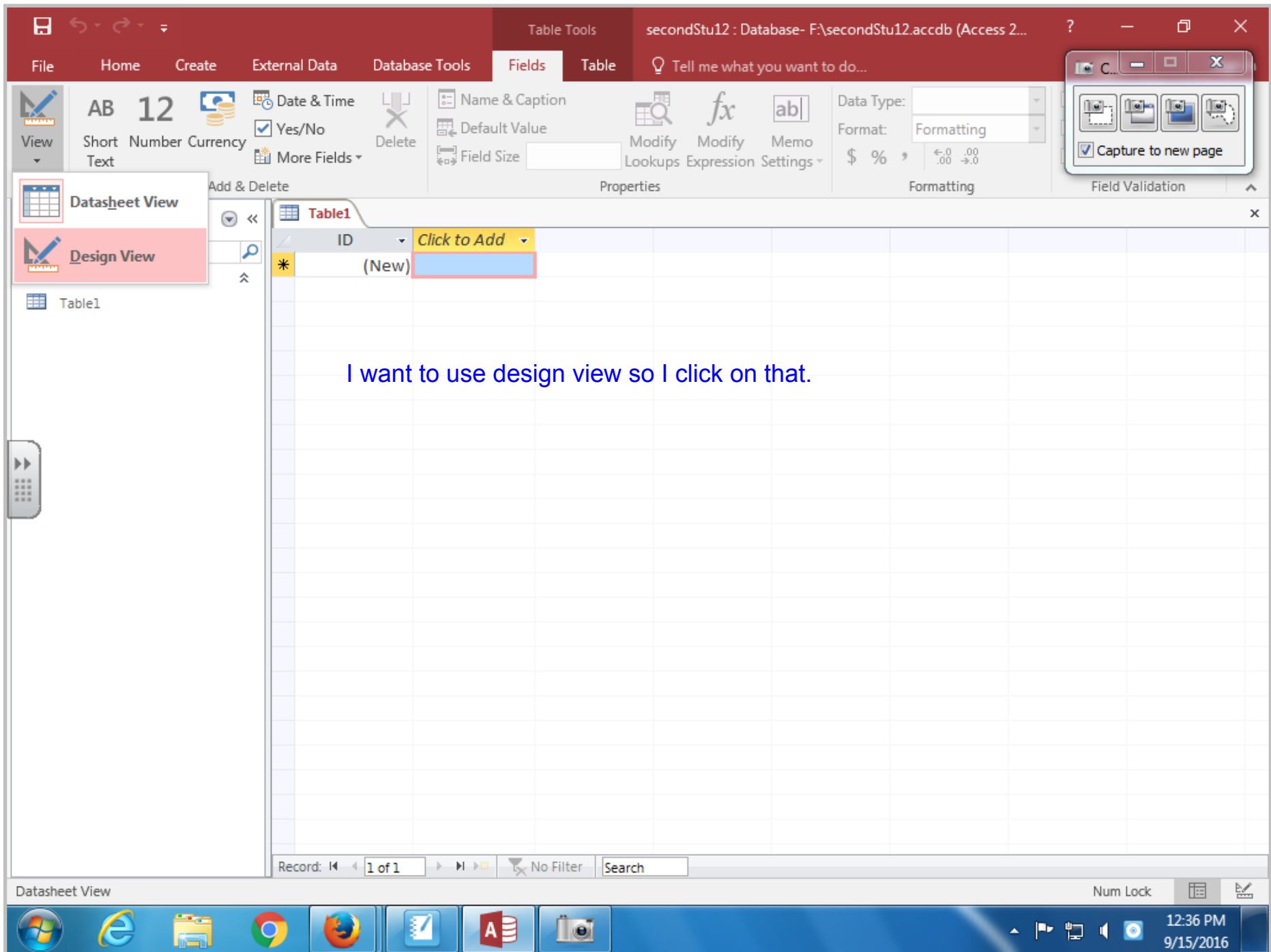
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Week #2
Week of
September 12th

semester.
If you want to download WINSCP at home, you can find it at this address.
WINSCP
Our next topic will deal with databases, and specifically we will use Access 2013: so be sure to download it if you want a copy at home. Otherwise, you are welcome to use our labs.
Access2013 example and explanation:
Sample Access 2013 database Note there is an accompanying Smartboard explaining this database under presentations
Access 2013 example explanation - database is under examples
Note I am also linking to an Access2010 example that works fine under Access 2013.
Sample Access 2010 database Note there is an accompanying Presentation explaining this database under presentations
Access 2010 example explanation - database is under examples
The databases we created in class last year:
Created in 11:00 class last year (student.accdb)
Created in 12:30 class last year (studb.accdb)
Assignments:
First: Upload your web page introducing yourself to the cisweb server and send me the address. Extra credit if you experiment with linking and try links that involve subfolders going back and forth and a link to an outside page.
Second: Quiz #1 (Quizzes are usually three day quizzes that are due three days after they are posted.) This quiz will not have that close a deadline - you need to pass it in by September 22nd.
Third: Access Database Assignment on BCC College ResourcesThis assignment must be done with the user interface we have looked at in class, it should not be done with SQL - next weeks assignment will deal with SQL.
I am attaching a list of the resources that I found that you can use in preparing your database.
College Resources - some things to help as you put data in the database Note that I did not find something for all fields - it is acceptable to leave some data blank but you should find some data on your own as well.
Note: Assignments are not due until the week after they are assigned. You are welcome to pass them in early.
Check back!

12:27 PM
9/15/2016





Microsoft Access 2013 interface showing the Design view of a table named "Student".

Table Tools - Design Tab:

- Views: View, Primary Key, Builder, Test Rules, Validation Rules, Modify Lookups
- Property Sheet: Property Sheet, Show/Hide
- Indexes: Indexes, Show/Hide
- Macros: Create Data Macros, Rename/Delete Macro
- Relationships: Relationships, Object Dependencies

Table Design Grid:

Field Name	Data Type	Description (Optional)
idno	Short Text	
stuname	Short Text	

Field Properties (General tab):

Field Size	50
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	No
Allow Zero Length	Yes
Indexed	No
Unicode Compression	Yes
IME Mode	No Control
IME Sentence Mode	None
Text Align	General

Field Properties (Lookup tab):

The maximum number of characters you can enter in the field. The largest maximum you can set is 255. Press F1 for help on field size.

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

Taskbar: Windows 8.1, Internet Explorer, File Explorer, Google Chrome, Firefox, Microsoft Word, System tray (12:38 PM, 9/15/2016).

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 201...)

File Home Create External Data Database Tools Design Tell me what you want to do... Sign in

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

Views Tools Show/Hide Field, Record & Table Events Relationships

All Access Obj... Search... Tables Student

Student

Field Name	Data Type	Description (Optional)
idno	Short Text	
stuname	Short Text	
major	Short Text	

Field Properties

General Lookup

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

The maximum number of characters you can enter in the field. The largest maximum you can set is 255. Press F1 for help on field size.

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

12:39 PM 9/15/2016

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 201...)

File Home Create External Data Database Tools Design Tell me what you want to do... Sign in

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

All Access Obj... Search... Tables Student

Field Name	Data Type	Description (Optional)
idno	Short Text	
stuname	Short Text	
major	Short Text	
gpa	Number	

Field Properties

General	
Field Size	Single
Format	
Decimal Places	Auto
Input Mask	
Caption	
Default Value	0
Validation Rule	
Validation Text	
Required	No
Indexed	No
Text Align	General

The size and type of numbers to enter in the field. The most common settings are Double and Long Integer. If this field will be joined to an AutoNumber field in a many-to-one relationship, this setting must be Long Integer.

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

12:39 PM 9/15/2016

Microsoft Access 2013 interface showing the Design view of a table named "Student".

Table Tools - Design

File Home Create External Data Database Tools Design Tell me what you want to do... Sign in

Views Tools Show/Hide Field, Record & Table Events Relationships

All Access Objects

Search... Tables Student

Field Name	Data Type	Description (Optional)
idno	Short Text	
stuname	Short Text	
major	Short Text	
gpa	Number	
nocrs	Number	

Field Properties

General	
Field Size	Integer
Format	
Decimal Places	Auto
Input Mask	
Caption	
Default Value	0
Validation Rule	
Validation Text	
Required	No
Indexed	No
Text Align	General

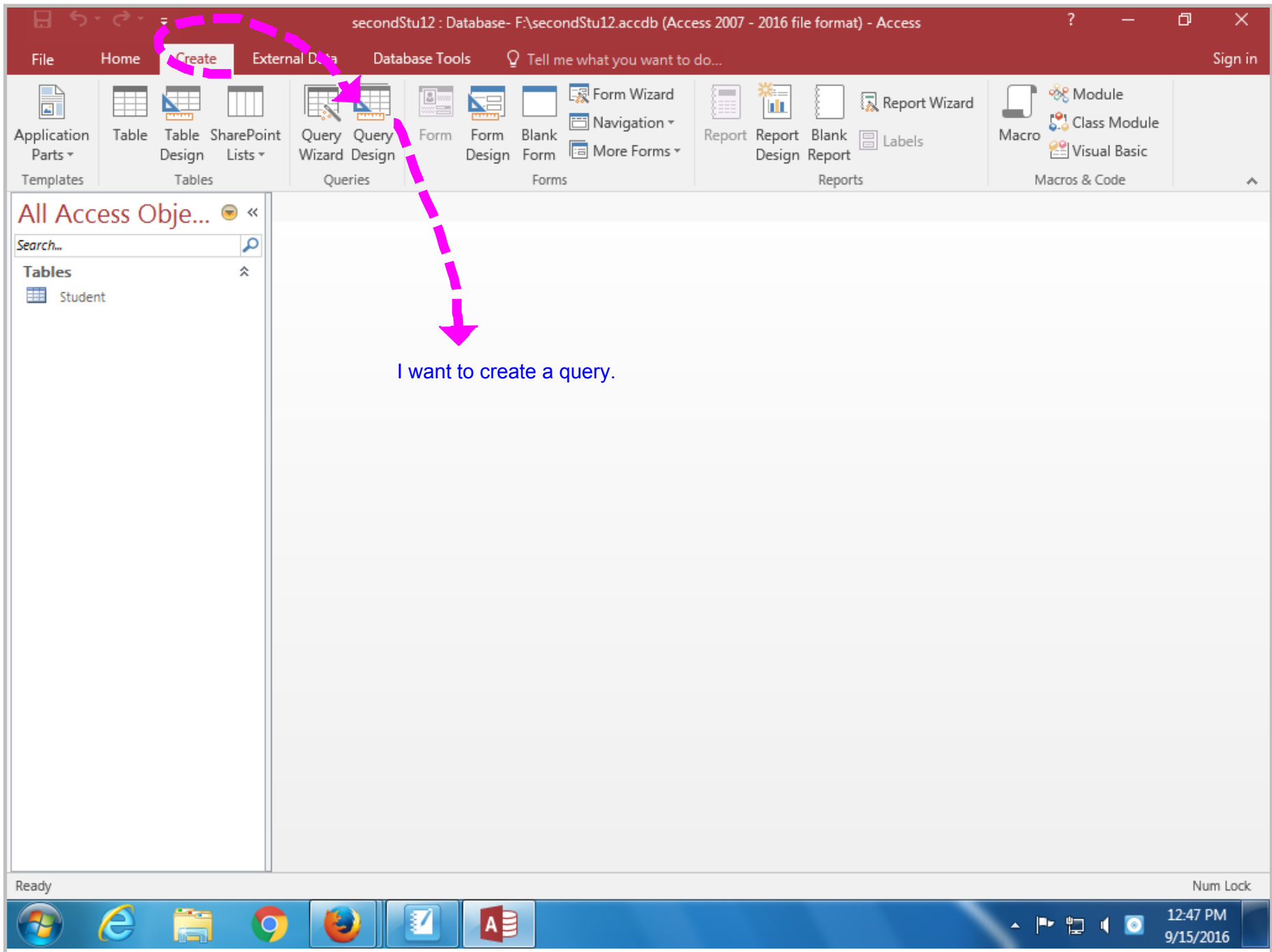
The size and type of numbers to enter in the field. The most common settings are Double and Long Integer. If this field will be joined to an AutoNumber field in a many-to-one relationship, this setting must be Long Integer.

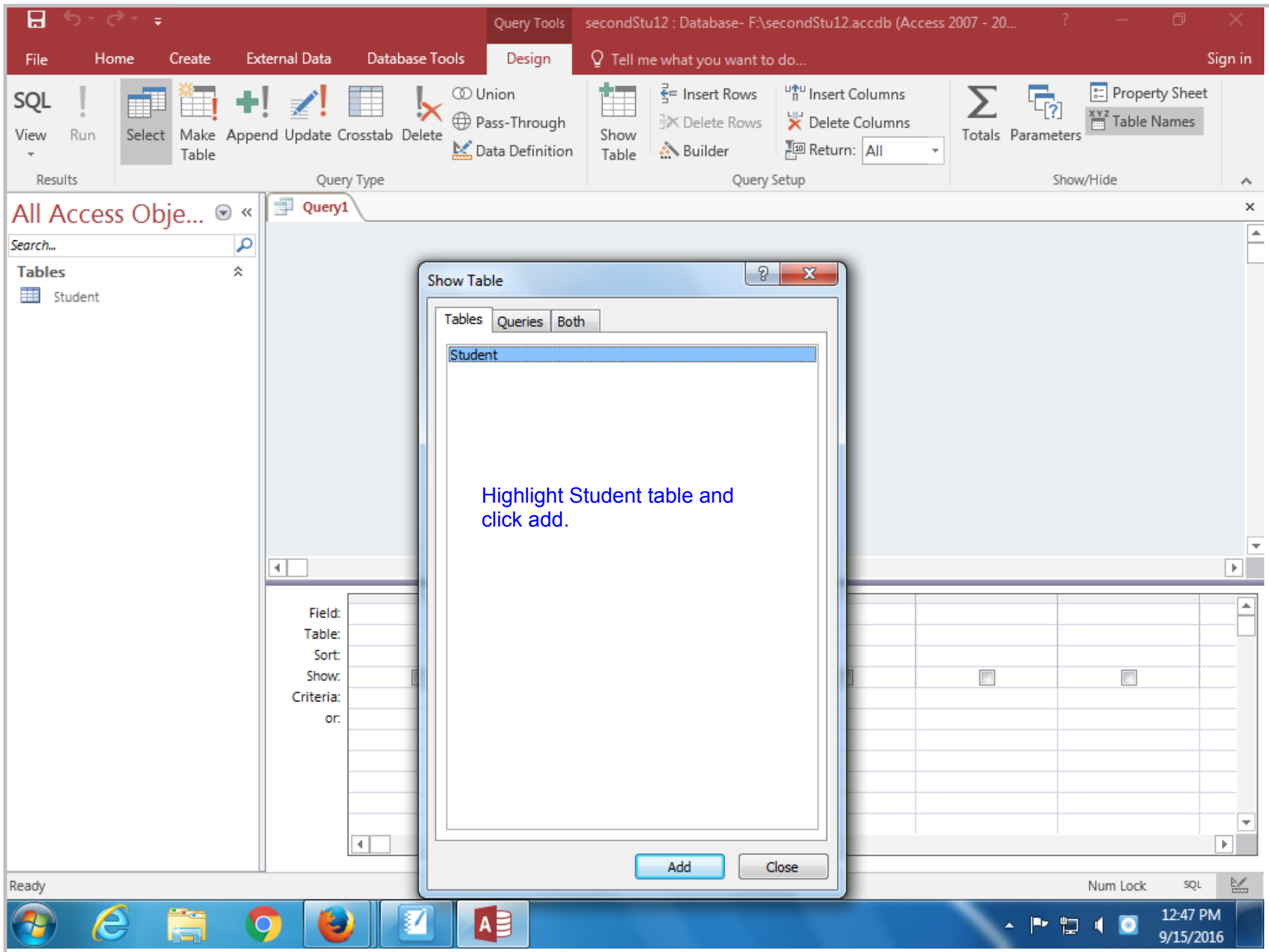
Design view. F6 = Switch panes. F1 = Help. Num Lock

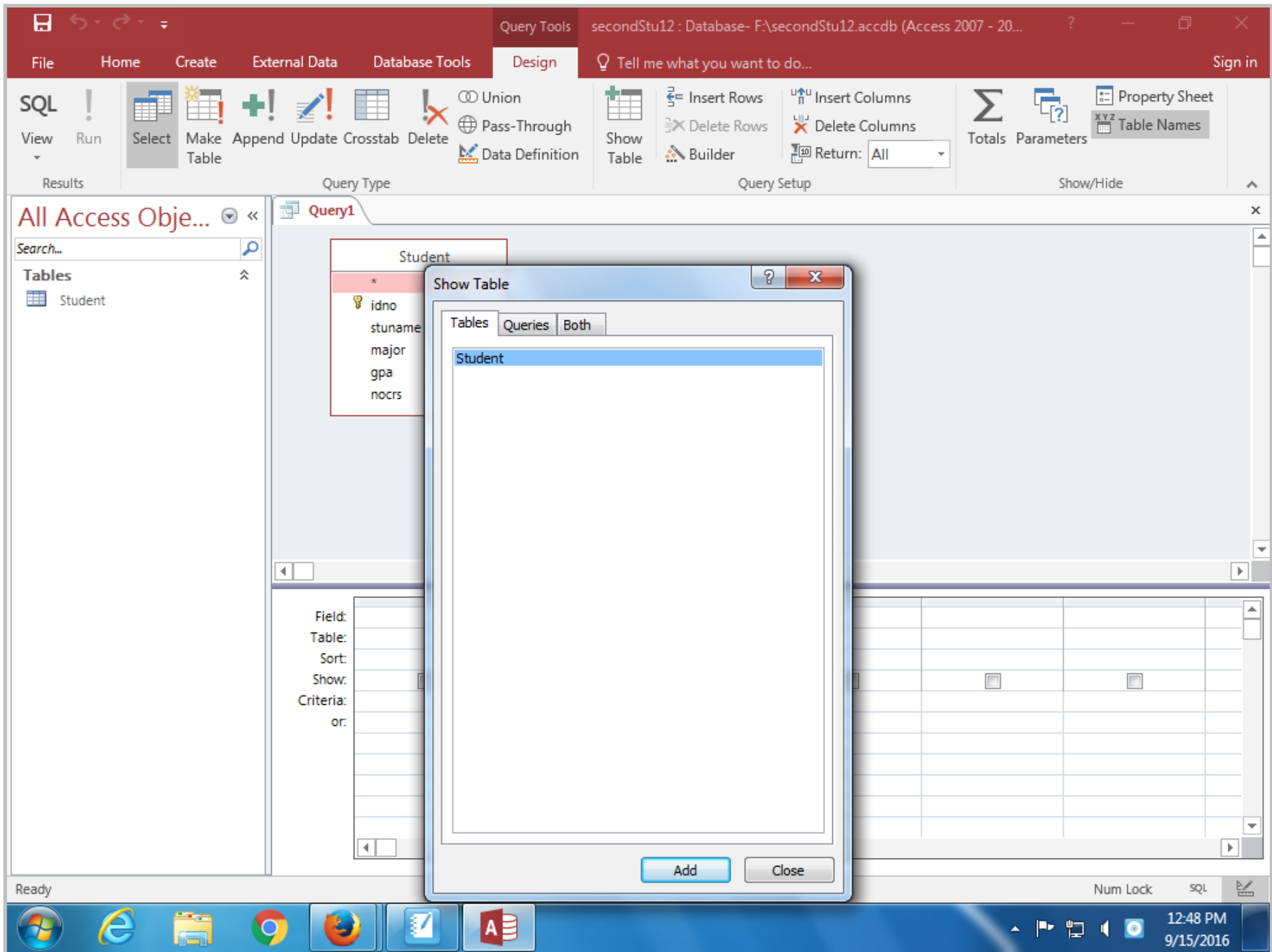
Windows Taskbar: 12:40 PM 9/15/2016

Microsoft Access 2013 interface showing the 'Student' table in Datasheet View. The ribbon includes 'Table Tools' and 'Table' tabs. The table contains 7 records, with the last record (idno 24680) highlighted in blue. The 'nocrs' field for this record is highlighted in red, and the text 'Entering the data' is overlaid on the grid.

idno	stuname	major	gpa	nocrs	Click to Add
11111	John Doe	CI	3.5	10	
12121	Susan Ash	CI	3.7	20	
12345	Linda French	CI	2.5	15	
13579	Robert Atkins	BU	2.8	14	
22222	Bill Costa	CI	2.9	10	
23456	Tom Smith	BU	3	12	
24680	Jane Brooks	EN	2.8	10	
*			0	0	







Microsoft Access 2010 interface showing the Design view of a query named "Query1". The ribbon includes File, Home, Create, External Data, Database Tools, and Design. The Design view shows the "Student" table with fields: idno (primary key), stuname, major, gpa, and nocrs.

The Design grid below shows the query design:

Field:	idno	stuname	major	gpa	nocrs		
Table:	Student	Student	Student	Student	Student		
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"/>
Criteria:			>C				
or:							

A blue arrow points to the "Criteria" row under the "major" column, where the text ">C|" is entered. A blue text box above the grid explains: "Entering C| on the criteria line under major means I only want records where a C| is in major."

The status bar at the bottom shows "Ready", "Num Lock", and "SQL" mode.

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Tell me what you want to do... Sign in

View Paste Cut Copy Format Painter Filter Ascending Descending Remove Sort Selection Advanced Toggle Filter Refresh Save Delete More Find Spelling More Find Text Formatting

All Access Objects

Search...

Tables

- Student

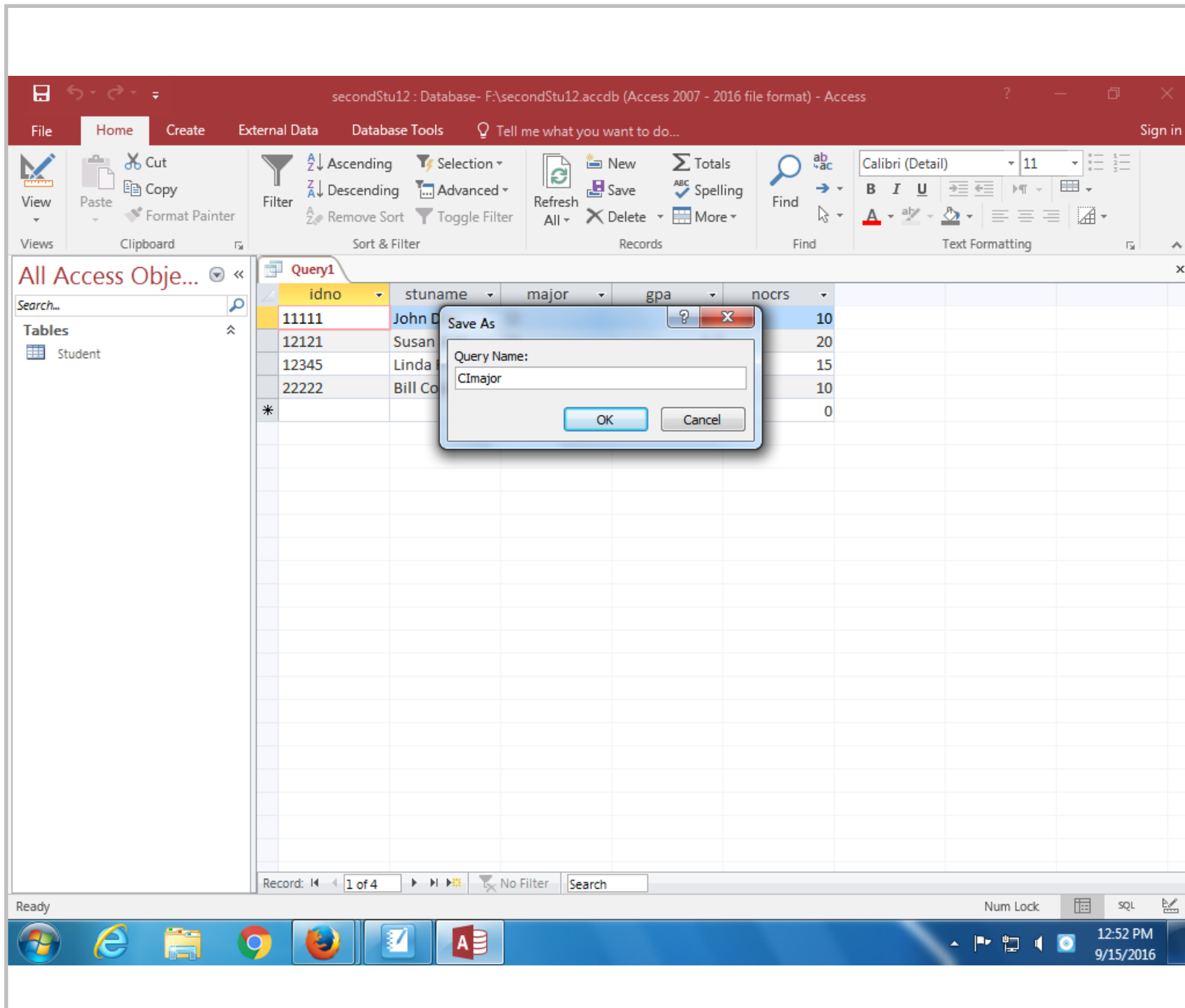
Query1

idno	stuname	major	gpa	nocrs
11111	John Doe	CI	3.5	10
12121	Susan Ash	CI	3.7	20
12345	Linda French	CI	2.5	15
22222	Bill Costa	CI	2.9	10
*			0	0

Record: 1 of 4 No Filter Search

Ready Num Lock SQL

12:50 PM 9/15/2016



secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 20...)

File Home Create External Data Database Tools Design

View Run Select Make Table Append Update Crosstab Delete Union Pass-Through Data Definition Show Table Builder Return: All Totals Parameters Property Sheet Table Names

All Access Obj... << Clmajor

Search...

Tables Student

Queries Clmajor

Student

- * idno
- stuname
- major
- gpa
- nocrs

Logic flowchart

If major equals CI than I display the record.

Field:	idno	stuname	major	gpa	nocrs		
Table:	Student	Student	Student	Student	Student		
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"/>	
Criteria:			"CI"				
or:							

Ready Num Lock SQL

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 20...)

File Home Create External Data Database Tools Design Tell me what you want to do... Sign in

View Run Select Make Table Append Update Crosstab Delete Union Pass-Through Data Definition Show Table Insert Rows Delete Rows Insert Columns Delete Columns Return: All Totals Parameters Property Sheet Table Names

Results Query Type Query Setup Show/Hide

Query1

Student

- * idno
- stuname
- major
- gpa
- nocrs

Now I have two criteria and an AND relationship. Both have to be true to display a record. Note that both are on the criteria line.

Field: idno stuname major gpa

Table: Student Student Student Student

Sort:

Show:

Criteria: "CI" >3

or:

Ready Num Lock SQL

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Tell me what you want to do... Sign in

View Paste Cut Copy Format Painter Filter Ascending Descending Remove Sort Selection Advanced Toggle Filter Refresh All New Save Delete Records Find Text Formatting

All Access Objects

Search...

Tables

- Student

Queries

- Cmajor

Query1

idno	stuname	major	gpa
11111	John Doe	CI	3.5
12121	Susan Ash	CI	3.7
*			0

CI and > 3

Record: 1 of 2 No Filter Search

Ready Num Lock SQL

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 20...)

File Home Create External Data Database Tools Design Tell me what you want to do... Sign in

View Run Select Make Table Append Update Crosstab Delete Union Pass-Through Data Definition Show Table Insert Rows Delete Rows Insert Columns Delete Columns Builder Return: All Totals Parameters Property Sheet Table Names

Results Query Type Query Setup Show/Hide

All Access Obj... Query1

Search... Tables Student Queries Clandgr3 CImajor

Student

- * idno
- stuname
- major
- gpa
- nocrs

major = CI

gpa > 3

Display

Display

Field:	idno	stuname	major	gpa	nocrs		
Table:	Student	Student	Student	Student	Student		
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"/>
Criteria:			"CI"				
or:				>3			

Ready Num Lock SQL

Now I want two things in an OR relationship. Either of them can be true. Note that one is on the criteria line and one on the or line.

Microsoft Access 2007 - 2010 interface showing a query design view for a query named "Query1". The database is "secondStu12 : Database- F:\secondStu12.accdb".

The ribbon includes: File, Home, Create, External Data, Database Tools, and Design. The Design ribbon has options for Union, Pass-Through, Data Definition, Insert Rows, Delete Rows, Insert Columns, Delete Columns, Show Table, Builder, Totals, Parameters, Property Sheet, and Table Names.

The left pane shows "All Access Objects" with a search bar and lists Tables (Student) and Queries (Clandgr3, CImajor).

The main area shows the "Query1" design grid with a table "Student" and handwritten red annotations:

- A diamond-shaped filter labeled "major = CI" with a "Y" on the right and an "N" on the top-left.
- A diamond-shaped filter labeled "gpa > 3" with a "Y" on the right and an "N" on the top-left.
- A trapezoidal shape labeled "display" connected to the "major = CI" filter.
- A trapezoidal shape labeled "display" connected to the "gpa > 3" filter.
- A large "OR" written in red to the right of the filters.

The design grid below the annotations is as follows:

Field:	idno	stuname	major	gpa	nocrs
Table:	Student	Student	Student	Student	Student
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Criteria:			"CI"		
or:				>3	

Ready Num Lock SQL

Microsoft Access 2013 interface showing the Student table in Datasheet View. The ribbon includes File, Home, Create, External Data, Database Tools, Fields, and Table. The ribbon tabs are Filter, Sort & Filter, Records, Find, and Text Formatting. The ribbon icons include View, Paste, Copy, Format Painter, Filter, Selection, Advanced, Refresh, Save, Delete, Totals, Spelling, More, Find, and Text Formatting options.

The left pane shows the All Access Objects list with Tables and Queries sections. The Student table is selected in the Tables section.

The main area displays the Student table data in Datasheet View. The table has columns: idno, stuname, major, gpa, nocrs, and Click to Add. The data is as follows:

idno	stuname	major	gpa	nocrs	Click to Add
11111	John Doe	CI	3.5	10	
12121	Susan Ash	CI	3.7	20	
12345	Linda French	CI	2.5	15	
13579	Robert Atkins	BU	2.8	14	
22222	Bill Costa	CI	2.9	10	
23456	Tom Smith	BU	3	12	
24680	Jane Brooks	EN	3.2	10	
*			0	0	

The record for Jane Brooks (idno 24680) is highlighted in blue. A red box highlights the gpa value of 3.2. A pink dashed arrow points from the top of the table to the text "This is the whole student table." below the table.

Record: 7 of 7 | No Filter | Search

Datasheet View | Num Lock

Windows taskbar shows the time 1:01 PM on 9/15/2016.

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Tell me what you want to do... Sign in

View Paste Cut Copy Format Painter Filter Sort & Filter Records Find Text Formatting

All Access Objects

Search...

Tables

- Student

Queries

- Clandgr3
- CImajor

Query1

idno	stuname	major	gpa	nocrs
11111	John Doe	CI	3.5	10
12121	Susan Ash	CI	3.7	20
12345	Linda French	CI	2.5	15
22222	Bill Costa	CI	2.9	10
24680	Jane Brooks	EN	3.2	10
*			0	0

The major EN has a gpa > 3

The ones with gpa under 3 are all CI.

CI or >3

Record: 1 of 5 No Filter Search

Datasheet View Num Lock SQL

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 20...)

File Home Create External Data Database Tools Design Tell me what you want to do... Sign in

View Run Select Make Table Append Update Crosstab Delete Union Pass-Through Data Definition Show Table Builder Insert Rows Delete Rows Insert Columns Delete Columns Return: All Totals Parameters Property Sheet Table Names

Results Query Type Query Setup Show/Hide

All Access Obj... Search... Tables Student Queries Clandr3 Clmajor Clorg3

Query1

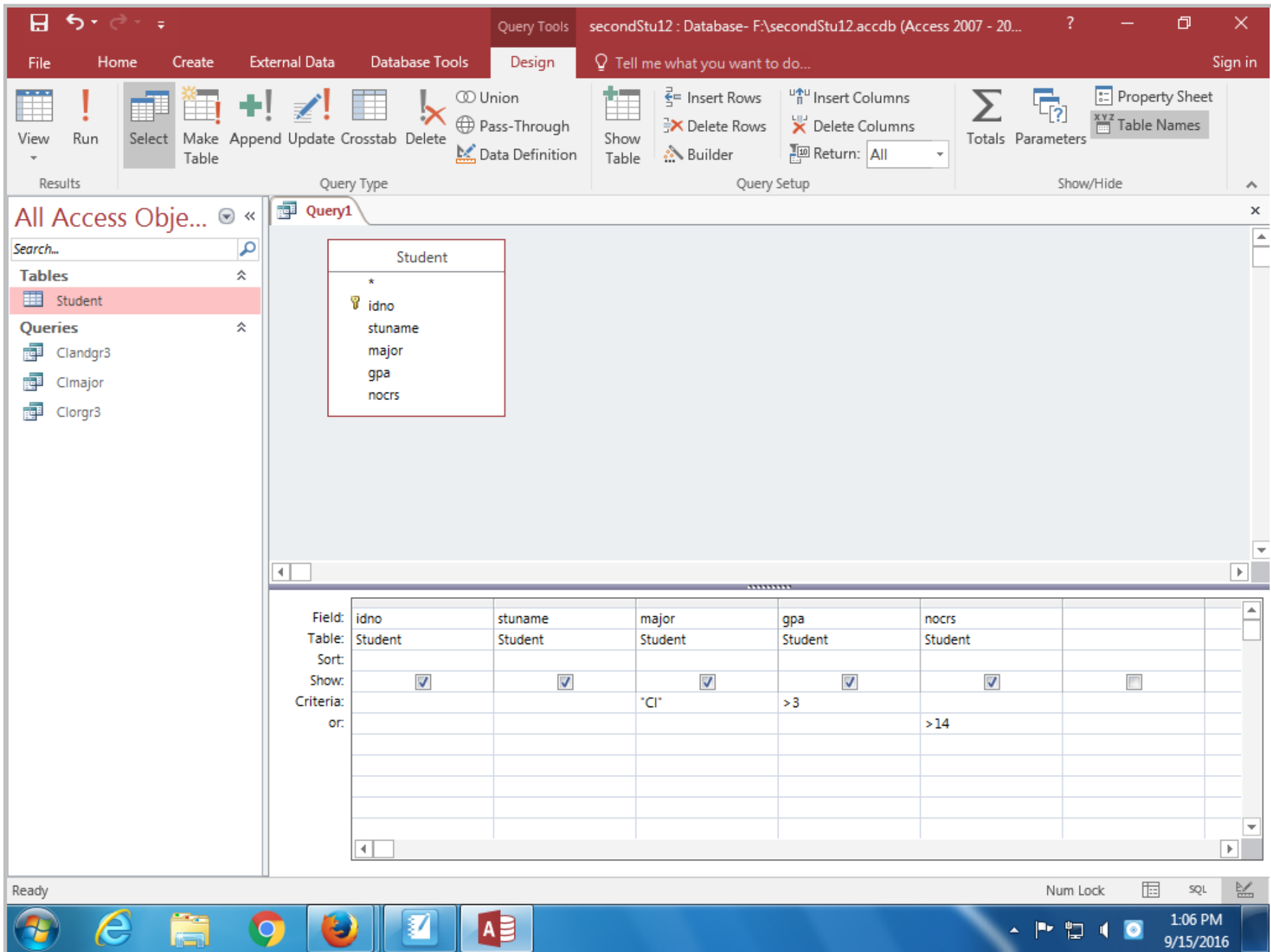
Student

- * idno
- stuname
- major
- gpa
- nocrs

Major C1 and gpa > 3
OR
nocrs > 14

Field:	idno	stuname	major	gpa	nocrs
Table:	Student	Student	Student	Student	Student
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Criteria:			C1	> 3	> 14
or:					

Ready Num Lock SQL



secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Tell me what you want to do... Sign in

View Paste Copy Cut Format Painter Filter Sort & Filter Records Find Text Formatting

All Access Objects

Search...

Tables

- Student

Queries

- Clandgr3
- Clmajor
- Clorg3

Query1

idno	stuname	major	gpa	nohrs
11111	John Doe	CI	3.5	10
12121	Susan Ash	CI	3.7	20
12345	Linda French	CI	2.5	15
22222	Bill Costa	CI	2.9	17
*			0	0

CI > 3
and
714

major CI and gpa > 3

Record: 1 of 4 No Filter Search

Ready Num Lock SQL

Microsoft Access Query Design View for 'Query1' in the 'secondStu12' database. The design grid shows fields from the 'Student' table: idno, stuname, major, gpa, and nocrs. Handwritten blue and red flowcharts are overlaid on the design grid, illustrating the logic of the query. The blue flowchart shows a path from the 'Student' table through a 'CI' filter, a 'gpa > 3' filter, and a 'display' box. The red flowchart shows a path from the 'Student' table through a 'major CI' filter, a 'no crs > 14' filter, and a 'display' box. A text box in the center reads 'Either flowchart works.' The design grid below the flowcharts shows the following criteria:

Field	Table	Sort	Show	Criteria	or
idno	Student		<input checked="" type="checkbox"/>		
stuname	Student		<input checked="" type="checkbox"/>		
major	Student		<input checked="" type="checkbox"/>	"CI"	
gpa	Student		<input checked="" type="checkbox"/>	> 3	
nocrs	Student		<input checked="" type="checkbox"/>	> 14	

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Tell me what you want to do... Sign in

View Paste Cut Copy Format Painter Filter Ascending Descending Remove Sort Selection Advanced Toggle Filter Refresh All Delete More Find Find Text Formatting

All Access Objects

Search...

Tables

- Student

Queries

- Clandgr3
- Clmajor
- Clmgr3

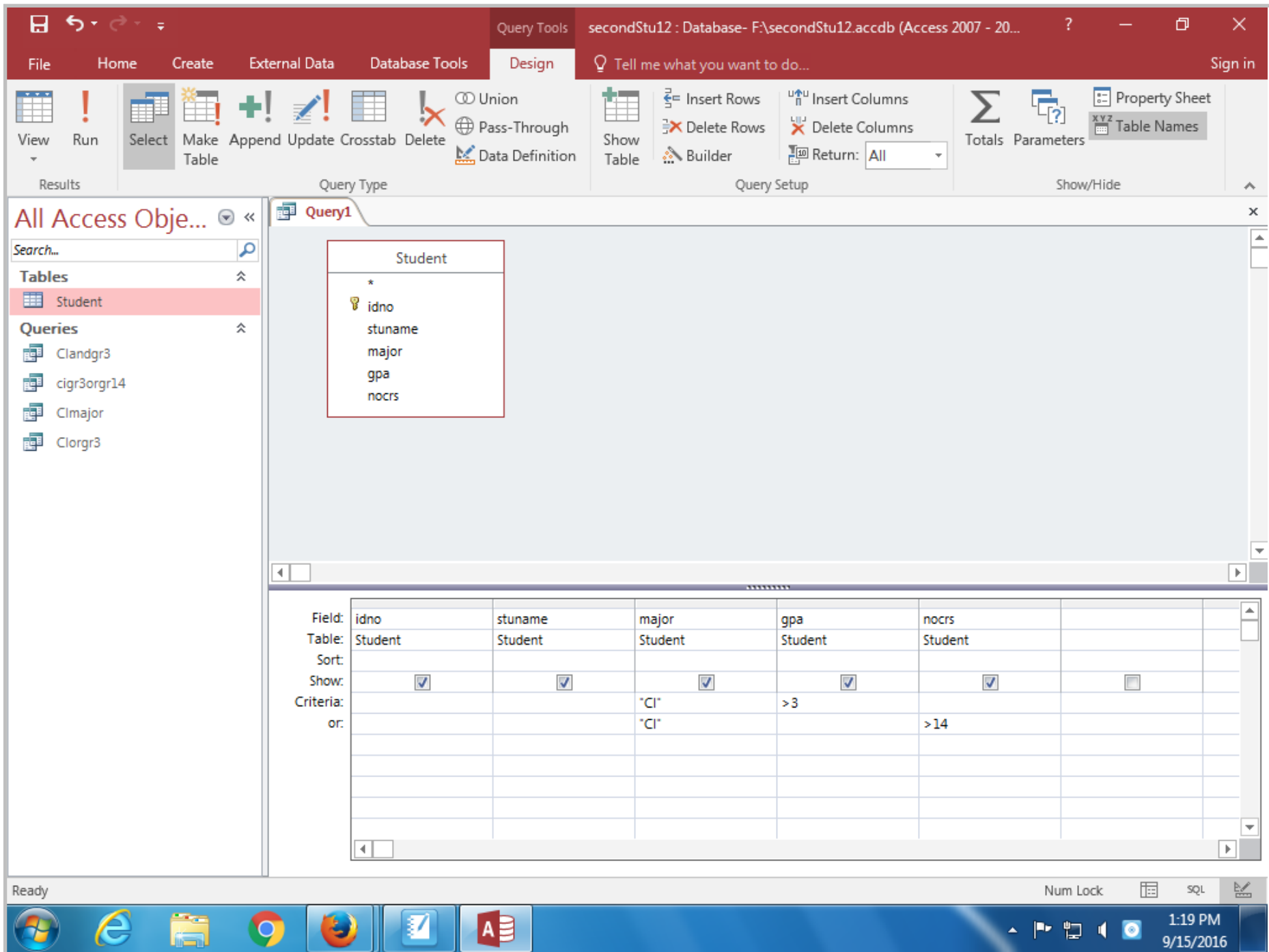
Query1

idno	stuname	major	gpa	nocrs
11111	John Doe	CI	3.5	10
12121	Susan Ash	CI	3.7	20
12345	Linda French	CI	2.5	15
22222	Bill Costa	CI	2.9	17
*			0	0

Record: 1 of 4 No Filter Search

Ready Num Lock SQL

1:15 PM 9/15/2016



secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Tell me what you want to do... Sign in

View Paste Cut Copy Format Painter Filter Ascending Descending Selection Advanced Refresh Save Delete Records Find Text Formatting

All Access Obj... Query1

idno	stuname	major	gpa	nocrs
11111	John Doe	CI	3.5	10
12121	Susan Ash	CI	3.7	20
12345	Linda French	CI	2.5	15
22222	Bill Costa	CI	2.9	17
*			0	0

Handwritten notes: $CI \rightarrow gpa > 3$
 $CI \rightarrow nocrs > 14$

Record: 1 of 4 No Filter Search

Ready Num Lock SQL

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 20...)

File Home Create External Data Database Tools Design Tell me what you want to do... Sign in

View Run Select Make Append Update Crosstab Delete Union Pass-Through Data Definition Show Table Builder Insert Rows Delete Rows Insert Columns Delete Columns Return: All Totals Parameters Property Sheet Table Names

Results Query Type Query Setup Show/Hide

All Access Obj... << Query1

Search... Tables Student Queries Clandgr3 cigr3orgr14 Clmajor Clorgr3

Student

- * idno
- stuname
- major
- gpa
- nocrs

Field: idno stuname major gpa disp nocrs
 Table: Student Student Student Student Student Student
 Sort:
 Show:
 Criteria: *CI' >3 >14
 or:

Ready Num Lock SQL

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 20...)

File Home Create External Data Database Tools Design Tell me what you want to do... Sign in

View Run Select Make Table Append Update Crosstab Delete Union Pass-Through Data Definition Show Table Insert Rows Delete Rows Insert Columns Delete Columns Return: All Totals Parameters Property Sheet Table Names

Results Query Type Query Setup Show/Hide

All Access Obj... << Query1 x

Search...

Tables >>

- Student

Queries >>

- Clandgr3
- cigr3orgr14
- Clmajor
- Clorgr3

Student

- * idno
- stuname
- major
- gpa
- nocrs

CI and either
gpa > 3
nocrs > 14
idno > 20000

Next problem

Field:	idno	stuname	major	gpa	nocrs		
Table:	Student	Student	Student	Student	Student		
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"/>
Criteria:			"CI"	>3			
or:			"CI"		>14		

Ready Num Lock SQL

Microsoft Access 2010 interface showing the Design view of a query named "Query1". The ribbon includes File, Home, Create, External Data, Database Tools, and Design. The Design view shows the "Student" table with fields: idno, stuname, major, gpa, and nocrs. Handwritten blue annotations include "Short text" pointing to idno, "numbers" pointing to gpa and nocrs, and "20000" in quotes with "text not number" written below it. The Criteria row shows: idno > "20000", major "CI", gpa > 3, and nocrs > 14. The status bar at the bottom shows "Ready", "Num Lock", and "SQL".

Student	
*	
idno	
stuname	
major	
gpa	
nocrs	

Short text

numbers

"20000"
text not number

3
14

Logic works best comparing like fields so since idno is a text field we need 20000 to be a text field which means it is in quotes.

gpa and nocrs are numbers so 3 and 14 are not in quotes

Field:	idno	stuname	major	gpa	nocrs
Table:	Student	Student	Student	Student	Student
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Criteria:			"CI"	> 3	
or:	> "20000"		"CI"		> 14

secondStu12 : Database- F:\secondStu12.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Tell me what you want to do... Sign in

View Paste Cut Copy Format Painter Filter Sort & Filter Records Find Text Formatting

All Access Objects

Search...

Tables

- Student

Queries

- Clandgr3
- cigr3orgr14
- Clmajor
- Clorg3

Query1

idno	stuname	major	gpa	nocrs
11111	John Doe	CI	3.5	10
12121	Susan Ash	CI	3.7	20
12345	Linda French	CI	2.5	15
22222	Bill Costa	CI	2.9	17
*			0	0

Short text ←

Number →

Numbers are against the right wall.

Short text and other text fields are aligned against the left wall.

Record: 1 of 4 No Filter Search

Ready Num Lock SQL