

CPSC 203

DB - Week 3 Lab1-2 Introduction to Databases

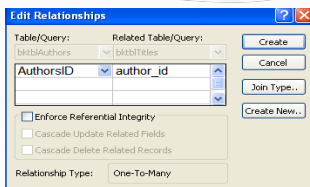
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Relationships

- Create a relationship as follows:
 - One-to-many s.t. field author_id in titles table is a foreign key from field AuthorID in authors table
 - One-to-many s.t. field PublisherID in titles table is a foreign key from field PublisherID in publishers table
- Steps:
 - Database Tools → Relationships
 - Drag the foreign key in the first table to the primary key in the second table

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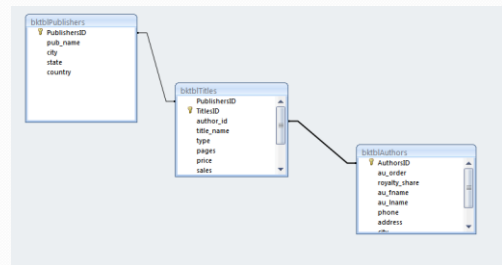
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- Table/Query: is the table in which the field is a primary key
- Related Table/Query: is the table in which the field is a foreign key

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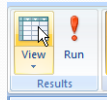
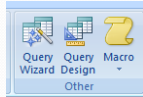


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Queries

- Create → Query Design
- In the view:
 - Database view → Results
 - SQL view → corresponding SQL
 - Design view → design the query
- Use Run! to execute the query
- Don't forget to save it



Design view facilities

Which field to select?

Which table?

Choose ascending, descending if the results are required to be sorted using this field

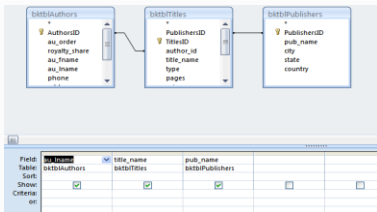
Check if this field will be shown in the results

Used for ANDing and Oring

Field:	
Table:	
Sort:	
Show:	<input type="checkbox"/>
Criteria:	
or:	

Queries

- Make a query "QueryA" to display the author last name, book title, and publisher name



Queries

- Choose view → SQL view

```

Query1
SELECT tbltblAuthors.au_name, tbltblTitles.title_name, tbltblPublishers.pub_name
FROM tbltblPublishers INNER JOIN tbltblAuthors INNER JOIN tbltblTitles ON tbltblTitles.author_id ON tbltblPublishers.PublisherID = tbltblTitles.PublisherID

```

Queries

- Modify the previous query to display the price of the book after the sale as well using this function:
 - Net_price = price – sales /100

```
SELECT bktblAuthors.au_iname, bktblTitles.title_name,
bktblPublishers.pub_name, [price]-[sales]/100 AS net_price
FROM bktblPublishers INNER JOIN (bktblAuthors INNER JOIN
bktblTitles ON bktblAuthors.AuthorsID = bktblTitles.author_id) ON
bktblPublishers.PublishersID = bktblTitles.PublishersID;
```

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Field:	au_iname	title_name	pub_name	net_price: [price]-[sales]/100
Table:	bktblAuthors	bktblTitles	bktblPublishers	
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				
or:				

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- Make a query to display the author phone number and the complete name of the author.

phone	author_name
718-496-7222	Sarah Buchman
415-549-4278	Hallie Hull
415-549-4278	Klee Hull
415-549-4278	Klee Hull
303-986-7020	Wendy Heydemark
650-836-7128	Kellsey
650-836-7128	Kellsey
303-986-7020	Wendy Heydemark
415-549-4278	Hallie Hull
415-549-4278	Klee Hull
650-836-7128	Kellsey
303-986-7020	Wendy Heydemark
212-771-4680	Christian Kellis
718-496-7222	Sarah Buchman
303-986-7020	Wendy Heydemark
415-549-4278	Klee Hull
718-496-7222	Sarah Buchman

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Aggregate Queries

- Make a query to display the number of books for each publisher
 - Create → Query design
 - Where is this information?
 - Publisher name in publisher table
 - No of books can be obtained from titles table
 - Select pub_name to display
 - Click



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- You notice that additional row has been added “total”
- The word “Group by” is written under the pub_name
- Choose “count” for TitlesID field and write its name as “NoOfBooks”

Field:	bktblTitles	NoOfBooks: TitlesID
Table:	bktblPublishers	bktblTitles
Total:	Group By	Count
Sort:		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Iteris:		
or:		

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```
SELECT bktblPublishers.pub_name,
Count(bktblTitles.TitlesID) AS NoOfBooks
FROM bktblPublishers INNER JOIN
bktblTitles ON bktblPublishers.PublishersID =
bktblTitles.PublishersID
GROUP BY bktblPublishers.pub_name;
```

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Adding a condition

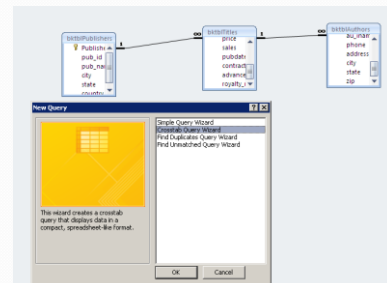
- Modify the previous query to display only publishers who published more than two books

```
SELECT bktblPublishers.pub_name, Count(bktblTitles.TitlesID) AS
NoOfBooks
FROM bktblPublishers INNER JOIN bktblTitles ON
bktblPublishers.PublishersID = bktblTitles.PublishersID
GROUP BY bktblPublishers.pub_name
HAVING (((Count(bktblTitles.TitlesID))>2));
```

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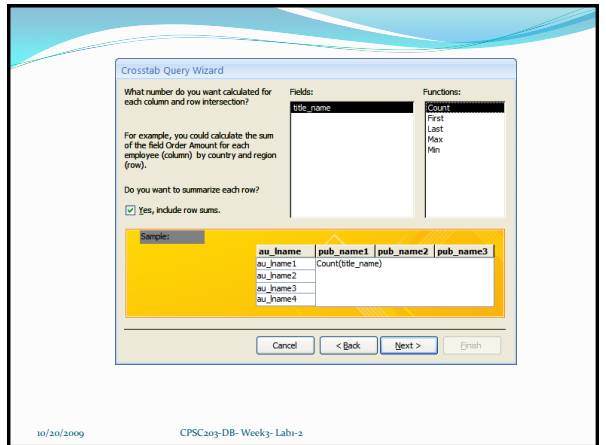
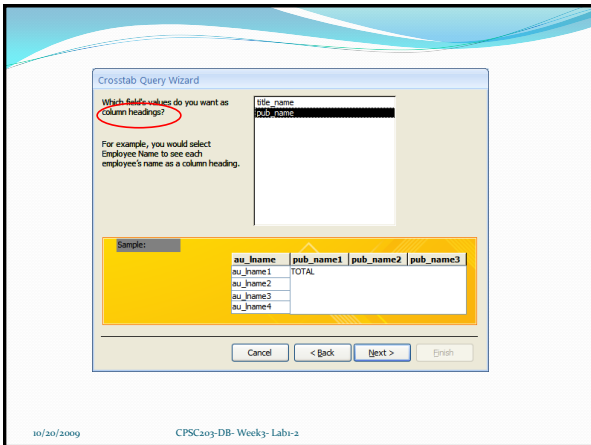
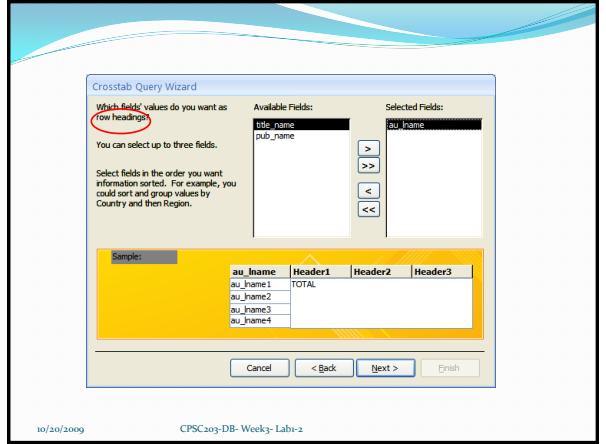
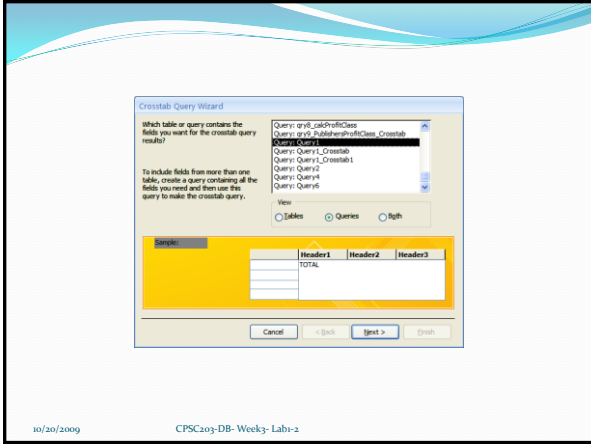
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Crosstab Query



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au_lname	Total Of title_name	Abatis Publishers	Core Dump Books	Schadenfreude Press
Buchman	4	3		1
Heydemark	1		1	
Hull	8	6		2

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If statement

- Make a query based on QueryA by adding another field so that
 - If the net_price of the book ≥ 20 \rightarrow expensive
 - Else if it is ≥ 10 \rightarrow ok
 - Otherwise \rightarrow cheap

class: IIf(netPrice \geq 20," expensive",IIf(netPrice \geq 10," ok", "cheap"))

The same format as excel but use IIF instead of if
Don't forget quotes for string

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Exercise

- Create a new database named Stuff.
- Create a table called Orders with the fields: OrderID, ProductID, SalespersonName, SalesDate, Quantity and SellingPricePerPiece.
 - What is the primary key?
 - Data type for ProductID?
 - Data type for SalespersonName?
 - Data type for SalesDate?

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Exercise

- Create a table called Products with the fields ProductID, PName, PurchaseDate, Supplier and PurchasePricePerPiece.
- What relationships might be required between products and orders tables?
- Set the default quantity in the Orders table to 0 and make pName in products table "required"

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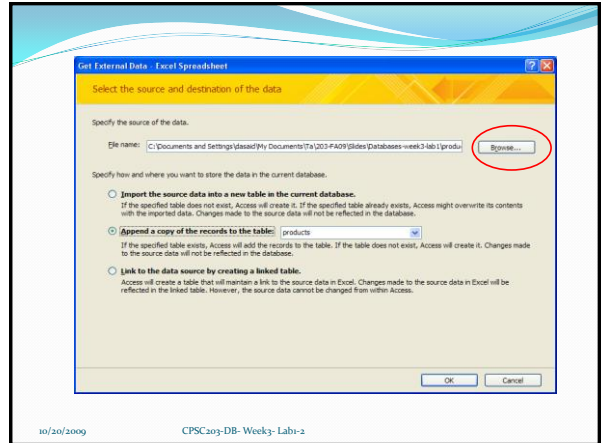
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Exercise

- 6) Now, to save your time, import data for both tables from the excel files provided on the wiki page
Right click of the table → import → excel

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Exercise

- 7) Create a query named query_1 that displays all fields in both tables sorted ascending by the quantity, but limit the query to the Supplier "Lush".

Notes:

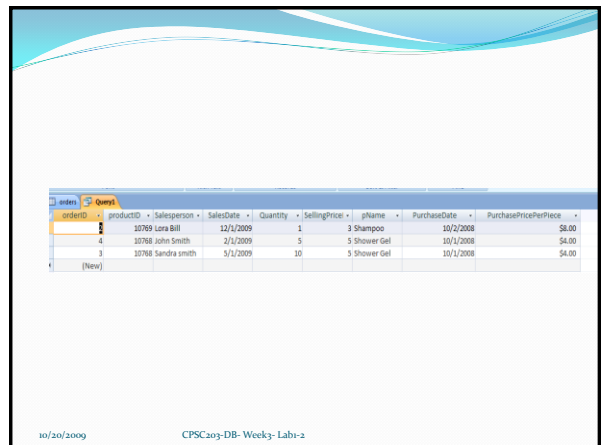
- productID should appear only once in the resulting
- Supplier name should not appear since it is known that it is Lush for all of them

Hint:

You can select all the field in orders table using orders.*, then you select quantity to sort by it, however it shouldn't be shown again in the output

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Exercise

- 8) Create an aggregate query (make sure the Totals button is selected) named query_2. Group the query using SalesPersonName and calculate the Average quantity he/she sells. Rename average quantity to be "Avg"

SalesPersonName	avg
Lohn Smith	3.5
Lora Bill	1
Sandra smith	10

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Exercise

- 9) Create query_3 based on query 1. Then, create a new field called Status. This should display "Profit" if SellingPricePerPiece > PurchasePricePerPiece, "Breakeven" if they were equal and "Loss" otherwise.

Hint:

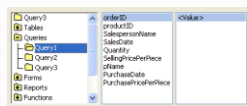
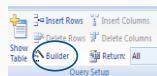
Use Query builder for fast editing of field names

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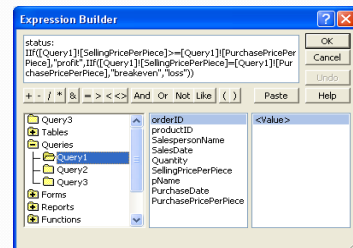
Query Builder

- Choose builder from query setup
- Enter your If statement as usual, however, when you want to enter a field name select it



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Exercise

- Create a report of query_3.