



WEEK 6

QUERY BY EXAMPLE (QBE)

CS3319

STUDENT OBJECTIVES

- Upon completion of this video, you should be able to:
 - Use Query By Example to create a query in MS Access without writing SQL
 - Use Query By Example to create a query the computes an aggregate function
 - Use Query By Example to create a unmatched query

QUERY BY EXAMPLE (QBE)

- User friendly language developed by IBM
- Based on the domain calculus
- To use it you fill in templates of your tables with the restrictions you are after
- Giving examples of what you want
- The user doesn't have to know SQL, just fills in templates of tables on the screen
- MS Access built upon IBM's success to use visual representation of queries.

VISUAL TOOLS FOR QUERY BY EXAMPLE USING MICROSOFT ACCESS

Example: One table only with a projection and a selection:

The query is:

Find all the data about all employees whose last name is Simpson.

QBE in MS Access:

Field: employee.*
Table: employee
Sort:
Show: ☒
Criteria: =Simpson
or:

Original Table and the Query Results:

	SSN	LastName	MiddleInitia	FirstName	BDate	Address	Sex	Salary	SuperSSN	DeptNumber
▶	1	Simpson	P	Bart	2/2/95	London	M	\$1,000.00	2	G8H
	2	Smithers	J	Waylan	1/1/60	Springfie	M	\$2,000.00	4	S7G
	3	Beuvieau	P	Patty	3/3/59	Toronto	F	\$4,000.00	6	Y5J
	4	Burns	P	Montgomer	7/7/20	Toronto	M	\$5,000.00		S7G
	6	Simpson	J	Lisa	6/6/90	London	F	\$1,000.00	2	S7G
	12	Simpson	J	Homer	8/8/61	Toronto	M	\$2,000.00	2	G8H
*	0							\$0.00	0	

Record: 1 of 6

	SSN	employee	MiddleInitia	FirstName	BDate	Address	Sex	Salary	SuperSSN	DeptNumber	Field0
▶	1	Simpson	P	Bart	2/2/95	London	M	\$1,000.00	2	G8H	Simpson
	6	Simpson	J	Lisa	6/6/90	London	F	\$1,000.00	2	S7G	Simpson
	12	Simpson	J	Homer	8/8/61	Toronto	M	\$2,000.00	2	G8H	Simpson

Record: 1 of 3

SQL generated by MS
Access for QBE above

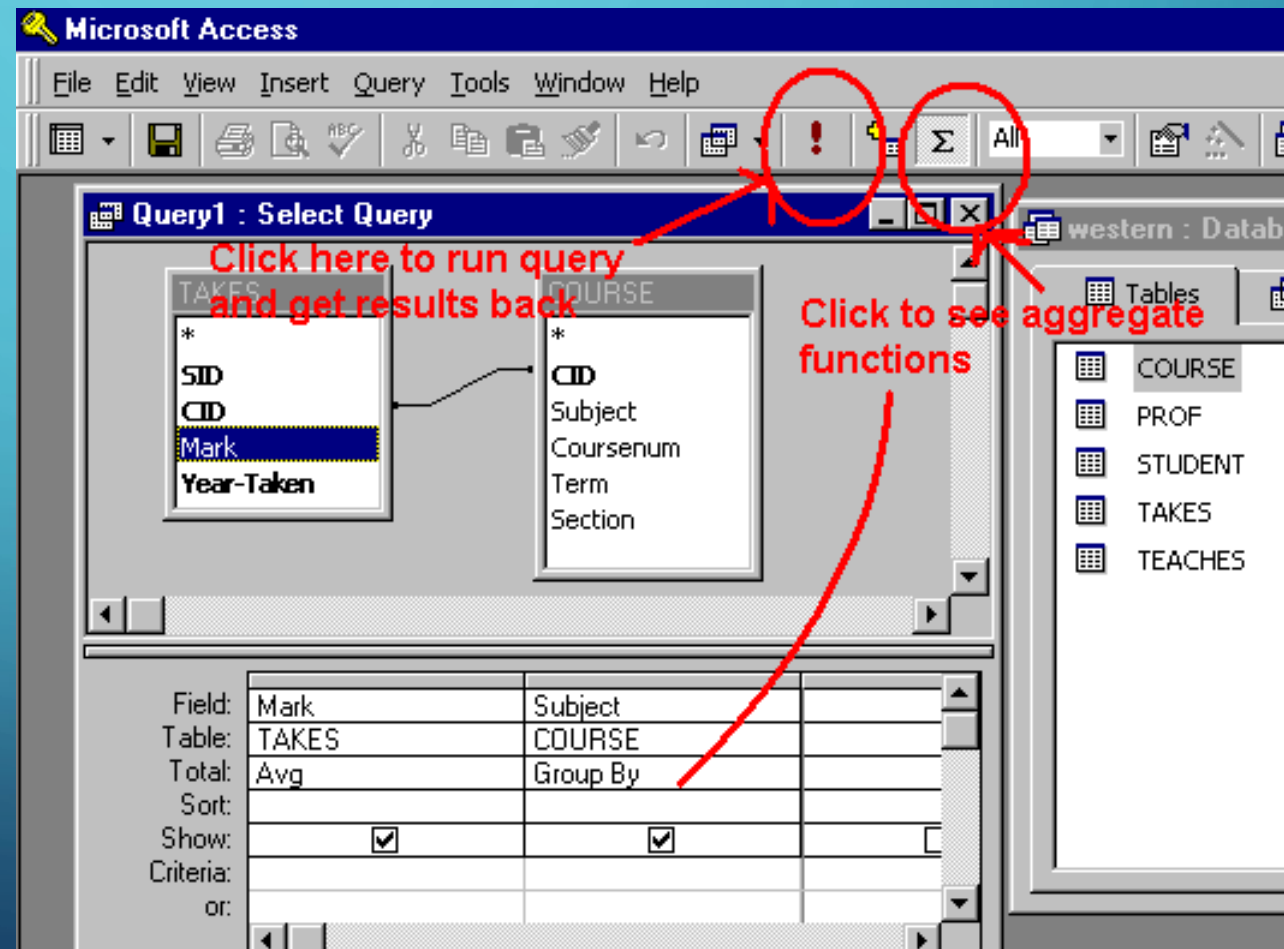
```
Query1 : Select Query
SELECT employee.*, employee.LastName
FROM employee
WHERE (((employee.LastName)='Simpson'));
```

The background is a blue gradient with decorative white circuit-like lines in the corners. These lines consist of straight segments and small circles, resembling a stylized electronic circuit board.

LET'S TRY IT OUT IN MS ACCESS

AGGREGATE FUNCTIONS:

- To do things like totals, averages, maximums, etc...



Results from Query:

Query1 : Select Query		
	AvgOfMark	Subject
▶	66.92	Computer Scier
	55.3846153846	English
	67.7	French
	70.4545454545	Geology
	74.4285714286	History
	72.7142857143	Journalism
	69.5714285714	Kinesiology
	74.25	Mathematics
	80.1428571429	Music
	89	Zoology

Record: 1 of 10

SQL Generated by the Query:

```
Query1 : Select Query
SELECT Avg[TAKES.Mark] AS AvgOfMark, COURSE.Subject
FROM COURSE INNER JOIN TAKES ON COURSE.CID = TAKES.CID
GROUP BY COURSE.Subject;
```


UNMATCHED QUERY

- Query: *Find the students who don't take any courses*

STUDENT Without Matching TAKES : Select Query

STUDENT

- *
- SID
- Lastname
- Firstname
- Street
- City

TAKES

- *
- SID
- CID
- Mark
- Year-Taken

Field: SID Lastname Firstname SID
Table: STUDENT STUDENT STUDENT TAKES
Sort:
Show: ☒ ☒ ☒ ☐ ☐
Criteria:
or: Is Null |

Results from Query:

STUDENT Without Matching TAKES : Select Query			
	SID	Lastname	Firstname
▶	1000345	DeSando	Pietro
	3218949	Greaves	Ian
*			

SQL Generated by the Query:

```
STUDENT Without Matching TAKES : Select Query
SELECT DISTINCTROW [STUDENT].[SID], [STUDENT].[Lastname], [STUDENT].[Firstname]
FROM STUDENT LEFT JOIN TAKES ON [STUDENT].[SID] = [TAKES].[SID]
WHERE ([TAKES].[SID] Is Null);
```

ORACLE: QUERY BY EXAMPLE

The screenshot shows the Oracle Argus Insight web application interface. At the top, there is a navigation bar with 'Home', 'Tools', 'Help', and 'Logout'. Below this is a secondary navigation bar with 'Home', 'Create Query', 'Query Results', and 'Case Series Reports'. The main content area is titled 'QUERY BY EXAMPLE LIBRARY'. On the right side of this area, there are two status fields: 'Active Query Name: < Not Saved >' and 'Active Case Series: < Not Saved >'. Below these fields is a table titled 'Choose Query'. The table has columns for Name, Description, Last Modified, User Full Name, Category, and Associated Report. The first row of data shows 'COI - US' for both Name and Description, '27-DEC-11' for Last Modified, 'insighttest' for User Full Name, and 'General' for Category. The Associated Report column is empty. At the bottom of the interface, there is a row of buttons: 'New', 'Modify', 'Delete', 'Associate', 'Disassociate', a checkbox labeled 'Limit Query to Active Case Series', and 'Execute'.

Name	Description	Last Modified	User Full Name	Category	Associated Report
COI - US	COI - US	27-DEC-11	insighttest	General	

