

ADBMS-Query By Example(QBE)

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Introduction

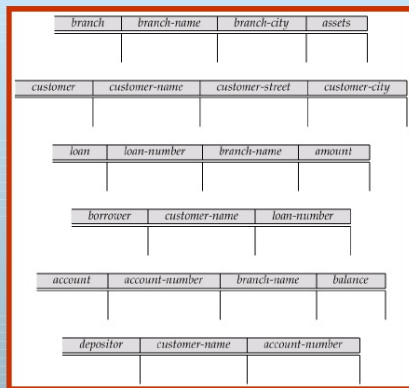
- QBE is a first graphical query language, Developed by IBM
- It differs from SQL in that the user does not have to specify a structured query explicitly; rather, the query is formulated by filling in templates of relations that are displayed on a monitor screen.
- The user does not have to remember the names of attributes or relations, because they are displayed as part of these templates.
- The user does not have to follow any rigid syntax rules for query specification; rather, constants and variables are entered in the columns of the templates to construct an example related to the retrieval or update request.

Two distinct features:

- I) Unlike most query languages and programming languages, QBE has a two dimensional syntax, it means query look like a **tables**. A query in one dimensional is require a single line(eq: SQL). A two dimensional query needs two dimensions for its expression.
- II) QBE queries are expressed “by example ”. Instead of giving a procedure for obtaining the desired answer, the user gives an example of what is desired. The system generalizes this example to the query.

- We express queries in QBE using **skelton tables**
- Rather than messup the display with all skeltons, the user selects those skeltons needed for a given query and fills in the skeltons with **example rows**.
- An example row consist of constants and example elements, which are domain variables.
- Domain variables are preceded by an underscore character(_), as in _x and constants appear without any qualification.

QBE Skeleton Tables for the Bank Example



Queries on One Relation

- To find all the loan numbers at the perryridge branch:

loan	branch_name	loan_number	amount
	perryridge	P. _x	

- SQL: SELECT LOAN_NUMBER FROM LOAN WHERE
BRANCH_NAME=PERRYRIDGE
- P is for printing the variable x

- To display the entire loan relation:

loan	branch_name	loan_number	amount
P.			

- SQL: SELECT *FROM LOAN

- Find the loan numbers of all loans with a loan amount of more than 700

loan	branch_name	loan_number	amount
		P.	>700

- Comparisons can involve only one arithmetic expression on the right hand side of the comparison(eg: $> (-x + -y - 20)$).
- The expressions can include both constants and variables.
- The space on the left hand side of the comparison must be blank
- The arithmetic operation that QBE supports: =, <, <=, >, >= and —