

Univerza v Ljubljani  
Fakulteta za računalništvo  
in informatiko

Predmet:  
Osnove podatkovnih baz

Modul:  
Poizvedovanje s QBE

Gradivo:  
v.2015

15.4.  
2016

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Fakulteta za računalništvo  
in informatiko

## Vsebina

- Kaj je QBE
- Poizvedovanje s QBE v MS Access
- QBE orodja za MySQL

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## QBE – Query-By-Example...

- Vizualen način dostopa do podatkov s podajanjem primerov...povemo, kaj nas zanima.
- QBE originalno razvil IBM v 70' letih. Včasih zelo popularen. Ponujajo mnogi SUPB.
- Možno prehajanje iz vizualne v tekstovno poizvedbo in obratno.

## Primer QBE v MS ACCESS...

- QBE v MS Access uporabnikom omogoča:
  - Poizvedovati po podatkih ene ali več tabel.
  - Določiti stolpce, ki jih želimo imeti v odgovoru (projekcija).
  - Določiti kriterije za izbiro vrstic (selekcija).
  - Izvajati izračune nad podatki v tabelah.
  - Dodajati in brisati zapise.
  - Spreminjati vrednosti v poljih.
  - Kreirati nove tabele in stolpce.
  - Izvajati posebne poizvedbe.

## Primer QBE v MS ACCESS...

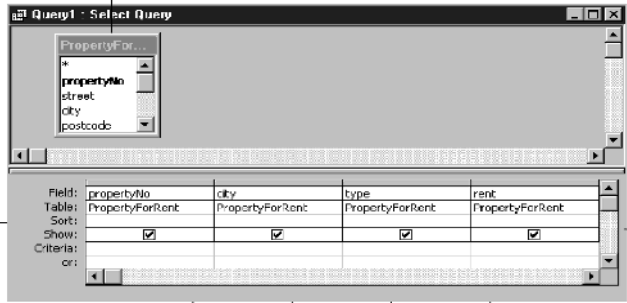
- Primeri iz Accessa

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### Poizvedba SELECT

(a) PropertyForRent field list

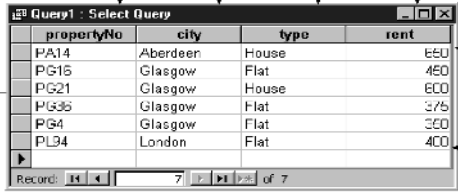


CDBL grid

Field: propertyNo city type rent  
 Table: PropertyForRent PropertyForRent PropertyForRent PropertyForRent  
 Sort:  
 Show: ☒ ☒ ☒ ☒  
 Criteria:  
 or:

Selected propertyNo, city, type, and rent fields displayed as columns

(b)



Datasheet

propertyNo	city	type	rent
PA14	Aberdeen	House	650
PG16	Glasgow	Flat	450
PG21	Glasgow	House	600
PG36	Glasgow	Flat	375
PG4	Glasgow	Flat	300
PL34	London	Flat	400

Record: 1 of 7

(c)

```

SELECT PropertyForRent.propertyNo, PropertyForRent.city, PropertyForRent.type, PropertyForRent.rent
FROM PropertyForRent;
  
```

## Poizvedba SELECT, določitev kriterija

(a)

QBE grid

Field:	propertyNo	city	type	rent
Table:	PropertyForRent	PropertyForRent	PropertyForRent	PropertyForRent
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		"Glasgow"		Between 350 And 450
or:				

Criteria on same row so combined using And operator

Criteria using And operator

(b)

Datasheet

Query1 : Select Query

propertyNo	city	type	rent
PG4	Glasgow	Flat	350
PG36	Glasgow	Flat	375
PG16	Glasgow	Flat	450

Record: 4 of 4

Records that satisfy criteria

(c)

```
SELECT PropertyForRent.propertyNo, PropertyForRent.city, PropertyForRent.type, PropertyForRent.rent
FROM PropertyForRent
WHERE (((PropertyForRent.city)="Glasgow") AND ((PropertyForRent.rent) Between 350 And 450));
```

## Poizvedba SELECT, stik tabel

(a)

PrivateOwner field list

PropertyForRent field list

Join line representing 1:1 relationship

QBE grid

Field:	fName	lName	propertyNo	city
Table:	PrivateOwner	PrivateOwner	PropertyForRent	PropertyForRent
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				
or:				

(b)

Datasheet

Query1 : Select Query

fName	lName	propertyNo	city
Tina	Murphy	PG4	Glasgow
Joe	Keogh	PA14	Aberdeen
Caro	Farrel	PL94	London
Caro	Farrel	PG21	Glasgow
Tony	Shaw	PG36	Glasgow
Tony	Shaw	PG16	Glasgow

Record: 7 of 7

Selected PrivateOwner fields displayed as columns

Selected PropertyForRent fields displayed as columns

(c)

```
SELECT PrivateOwner.fName, PrivateOwner.lName, PropertyForRent.propertyNo, PropertyForRent.city
FROM PrivateOwner INNER JOIN PropertyForRent ON PrivateOwner.ownerNo = PropertyForRent.ownerNo;
```

Poizvedba  
SELECT,  
izračunana  
polja

(a)

Field: propertyNo city type Yearly Rent: [rent]\*12  
 Table: PropertyForRent PropertyForRent PropertyForRent  
 Sort:  
 Show: ☒ ☒ ☒ ☒  
 Criteria:  
 or:

Expression to create a new field called Yearly Rent and to calculate a value for each property

Selected propertyNo, city, and type fields displayed as columns

Creates new column called Yearly Rent

(b)

Query1 : Select Query

propertyNo	city	type	Yearly Rent
PA14	Aberdeen	House	7800
PG16	Glasgow	Flat	5400
PG2*	Glasgow	House	7200
PG36	Glasgow	Flat	4500
PG4	Glasgow	Flat	4200
PLB4	London	Flat	4800

Record: 7 of 7

(c)

```
SELECT PropertyForRent.propertyNo, PropertyForRent.city, PropertyForRent.type, [rent]*12 AS (Yearly Rent)
FROM PropertyForRent;
```

Poizvedba  
SELECT,  
uporaba  
agregatorov

(a)

QBE grid

Field: city propertyNo  
 Table: PropertyForRent PropertyForRent  
 Total: Group By Count  
 Sort:  
 Show: ☒ ☒  
 Criteria:  
 or:

Group By on city field displayed as column

Count on propertyNo field displayed as column

(b)

Datasheet

Query1 : Select Query

city	CountOfpropertyNo
Aberdeen	2
Glasgow	4
London	1

Record: 1 of 3

(c)

```
SELECT PropertyForRent.city, Count(PropertyForRent.propertyNo) AS CountOfpropertyNo
FROM PropertyForRent
GROUP BY PropertyForRent.city;
```

## Poizvedba SELECT, uporaba parametrov

(a)

Field:	fName	lName	propertyNo	city
Table:	PrivateOwner	PrivateOwner	PropertyForRent	PropertyForRent
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	[Enter Owner's First Name]	[Enter Owner's Last Name]		

Expression to create prompt for fName field

Expression to create prompt for lName field

(b)

Enter Parameter Value

Enter Owner's First Name

Carol

OK Cancel

Enter Parameter Value

Enter Owner's Last Name

Farrel

OK Cancel

(c)

Query1 : Select Query

fName	lName	propertyNo	city
Carol	Farrel	FL94	London
Carol	Farrel	PG21	Glasgow

Record: 3 of 3

Records that satisfy criteria

(d)

```
SELECT PrivateOwner.fName, PrivateOwner.lName, PropertyForRent.propertyNo, PropertyForRent.city
FROM PrivateOwner INNER JOIN PropertyForRent ON PrivateOwner.ownerNo = PropertyForRent.ownerNo
WHERE (((PrivateOwner.fName)=[Enter Owner's First Name]) AND ((PrivateOwner.lName)=[Enter Owner's Last Name]));
```

## Posebne vrste SELECT poizvedb

Query2 : Select Query

Field:	Booking.*
Table:	Booking
Sort:	
Show:	<input checked="" type="checkbox"/>
Criteria:	

SQL View

Datasheet View

PivotTable View

PivotChart View

Show Table...

Parameters...

Query Type

SQL Specific

Relationships...

Properties...

Select Query

Crosstab Query

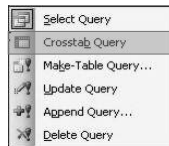
Make-Table Query...

Update Query

Append Query...

Delete Query

## Poizvedba Crosstab



(a)

Field:	fName	lName	type	propertyNo
Table:	Staff	Staff	PropertyForRent	PropertyForRent
Total:	Group By	Group By	Group By	Count
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				
or:				

Group By on fName, lName, and type fields displayed as columns

Count on propertyNo field displayed as column

(b)

Query1 : Select Query

fName	lName	type	CountOfpropertyNo
Ann	Beech	Bungalow	43
Ann	Beech	Cottage	4
Ann	Beech	Flat	45
Ann	Beech	Mid-Terrace	26
Ann	Beech	Semi-Detached	33
David	Ford	Bungalow	7
David	Ford	Cottage	2
David	Ford	Flat	14
David	Ford	Semi-Detached	42
Mary	Howe	Bungalow	45
Mary	Howe	Cottage	4
Mary	Howe	Flat	31
Mary	Howe	Mid-Terrace	2
Mary	Howe	Semi-Detached	7

Record: 1 of 14

(c)

```
SELECT Staff.fName, Staff.lName, PropertyForRent.type, Count(PropertyForRent.propertyNo) AS CountOfpropertyNo
FROM Staff INNER JOIN PropertyForRent ON Staff.staffNo = PropertyForRent.staffNo
GROUP BY Staff.fName, Staff.lName, PropertyForRent.type;
```

(a)

Field:	fName	lName	type	propertyNo
Table:	Staff	Staff	PropertyForRent	PropertyForRent
Total:	Group By	Group By	Group By	Count
Crosstab:	Row Heading	Row Heading	Column Heading	value
Sort:				
Criteria:				
or:				

fName and lName fields provide values for row heading columns

type field provide values for column heading columns

propertyNo field provides values for property type columns

(b)

Query1 : Crosstab Query

fName	lName	Bungalow	Cottage	Flat	Mid-Terrace	Semi-Detached
Ann	Beech	43	4	45	26	33
David	Ford	7	2	14		42
Mary	Howe	45	4	31	2	7

Record: 1 of 3

(c)

```
TRANSFORM Count(PropertyForRent.propertyNo) AS CountOfpropertyNo
SELECT Staff.fName, Staff.lName
FROM Staff INNER JOIN PropertyForRent ON Staff.staffNo = PropertyForRent.staffNo
GROUP BY Staff.fName, Staff.lName
PIVOT PropertyForRent.type;
```

## Kreiranje novih tabel

(a) Name of new table

Make Table

Make New Table

Table Name: StaffCut

Location of new table

Current Database

Another Database:

By Name:

(b) Make-table DB-grid

Field	StaffNo	IName	IName	position	salary
Staff	Staff	Staff	Staff	Staff	Staff

Relevant fields of Staff table for new StaffCut table

(c) Microsoft Access

You are about to paste 6 row(s) into a new table.

Once you click Yes, you can't use the Undo command to reverse the changes. Are you sure you want to create a new table with the selected records?

Yes No

(d) StaffCut: Table

StaffNo	IName	IName	position	salary
SG37	John	White	Manager	30000
SG37	Ann	Beech	Assistant	12000
SG14	David	Ford	Supervisor	18000
SA8	Mary	Howe	Assistant	9000
SG5	Susan	Brand	Manager	24000
SL41	Julie	Lee	Assistant	9000

Records: 14 of 6

Selected columns copied from Staff table

(e) SELECT StaffStaffNo, StaffIName, StaffIName, Staff position, Staff salary INTO StaffCut FROM Staff;

## Brisanje zapisov

Select Query  
Crosstab Query  
Make-Table Query...  
Update Query  
Append Query...  
Delete Query

(a) Target table for deletion

Delete QBE grid

Field	PropertyForRent.*	city
Table:	PropertyForRent	PropertyForRent
Deleted:	From	Where
Criteria:		"Glasgow"
or:		

Criterion for properties in Glasgow

(b) Microsoft Access

You are about to delete 4 row(s) from the specified table.

Once you click Yes, you can't use the Undo command to reverse the changes. Are you sure you want to delete the selected records?

Yes No

If Yes

(c) PropertyForRent: Table

propertyNo	street	city	postcode
PA14	16 Holthead	Aberdeen	AB7 5SU
PL94	5 Argyll Street	London	NW2

Records: 14 of 2

PropertyForRent datasheet minus deleted records (properties in Glasgow)

Deletion cascades to related table if referential integrity is set and cascade deletes are allowed

Viewing: Table

clientNo	propertyNo	viewDate	comment
CR55	PA14	24-May-01	too small
CR62	PA14	14-May-01	no dining room

Records: 14 of 2

Viewing datasheet minus deleted records (viewings of properties in Glasgow)

(d) DELETE PropertyForRent.\*, PropertyForRent.city FROM PropertyForRent WHERE (((PropertyForRent.city)="Glasgow"));



**Spreminjanje zapisov**

Select Query  
Crosstab Query  
Make-Table Query...  
Update Query  
Append Query...  
Delete Query

(a) target table for update

Field: rent  
Table: PropertyForRent  
Update To: [rent]\*1.1  
Criteria: or:

Update To row  
Update QBE grid  
Expression to update values in rent field by 10%

(b) Microsoft Access

**You are about to update 6 row(s).**  
Once you click Yes, you can't use the Undo command to reverse the changes. Are you sure you want to update these records?  
Yes No

If Yes

(c) Query1 : Select Query

propertyNo	street	city	rent
PA14	16 Holhead	Aberdeen	715
PG16	5 Novar Drive	Glasgow	495
PG21	18 Dale Road	Glasgow	660
PG36	2 Manor Road	Glasgow	412
PG4	6 Lawrence Street	Glasgow	365
PL94	6 Argyll Street	London	440

Record: 1 of 6

Values updated in rent column by 10%

(d) UPDATE PropertyForRent SET PropertyForRent.rent = [rent]\*1.1;


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## QBE orodja za MySQL


- phpMyAdmin 
- dbForge Studio for MySQL  Active Database Software  
<http://www.devart.com/dbforge/mysql/>
- FlySpeed SQL Query   
<http://www.activedbsoft.com/index.html>
- SQLyog MySQL   
<https://www.webyog.com/>
- ...

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## dbForge Studio for MySQL



Administration and maintenance  
 Query Builder  
 Database projects  
 Database synchronization  
 Intelligent SQL coding  
 Code Debugger  
 Database Designer  
 Export/Import  
 Reporting and analysis  
 Query Profiler  
 More features...

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FlySpeed SQL Query - [Order Products\*]

Connection Query Edit Tools View Window Help

New Query Northwind Execute

Northwind

- Queries
  - Order Products
- Tables
  - Employees
  - Customers
  - Categories
  - Order Details
  - Orders
  - Products
  - Shippers
  - Suppliers
  - Table1
- System Tables
- Views
  - Ten Most Expensive Products
  - Sales by Category
  - Quarterly Orders
  - Products by Category
  - Products Above Average Price
  - Product Sales for 1997
  - Orders Qry
  - Order Subtotals
  - Order Details Extended

Connections

Order Details Northwind

Query

Main

Products

Order Details


Orders

Output	Expression	Aggregate	Alias	Sort Type	Sort Order	Grouping	Criteria
<input checked="" type="checkbox"/>	Products.ProductName			Ascending	1	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	[Order Details].Quantity					<input type="checkbox"/>	> 1000
<input checked="" type="checkbox"/>	Orders.OrderDate					<input type="checkbox"/>	


Select

```


1 Products.ProductName,
2 [Order Details].Quantity,
3 Orders.OrderDate
4
5 From
6 (Products Inner Join
7   [Order Details] On Products.ProductID = [Order Details].ProductID
8   Inner Join
9   Orders On Orders.OrderID = [Order Details].OrderID
  
```


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## FlySpeed SQL Query




**FlySpeed DB Migrate**



**FlySpeed Data Export**



**FlySpeed SQL Query**

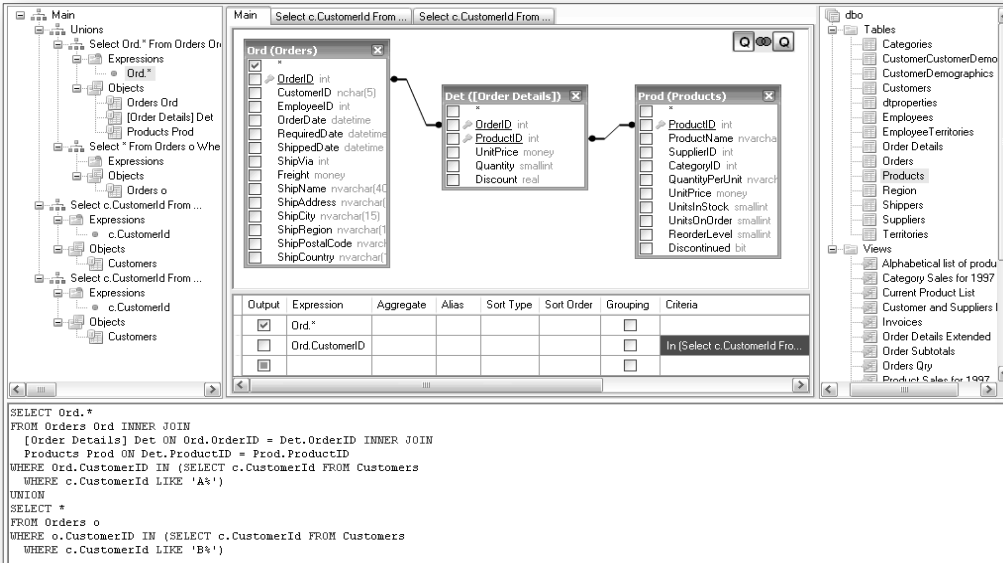


**Active Query Builder**

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## FlySpeed SQL Query



```

SELECT Ord.*
FROM Orders Ord INNER JOIN
[Order Details] Det ON Ord.OrderID = Det.OrderID INNER JOIN
Products Prod ON Det.ProductID = Prod.ProductID
WHERE Ord.CustomerID IN (SELECT c.CustomerID FROM Customers
WHERE c.CustomerID LIKE 'A%')
UNION
SELECT *
FROM Orders o
WHERE o.CustomerID IN (SELECT c.CustomerID FROM Customers
WHERE c.CustomerID LIKE 'B%')
  
```