

Univerza v Ljubljani
Fakulteta za računalništvo
in informatiko



Predmet: Osnove podatkovnih baz

Modul:
Poizvedovanje s QBE

Gradivo:
v.2015



Vsebina

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



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

Poizvedba SELECT

(a)

PropertyForRent
field list

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:				
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	350
	PL94	London	Flat	400

Record: 7 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

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

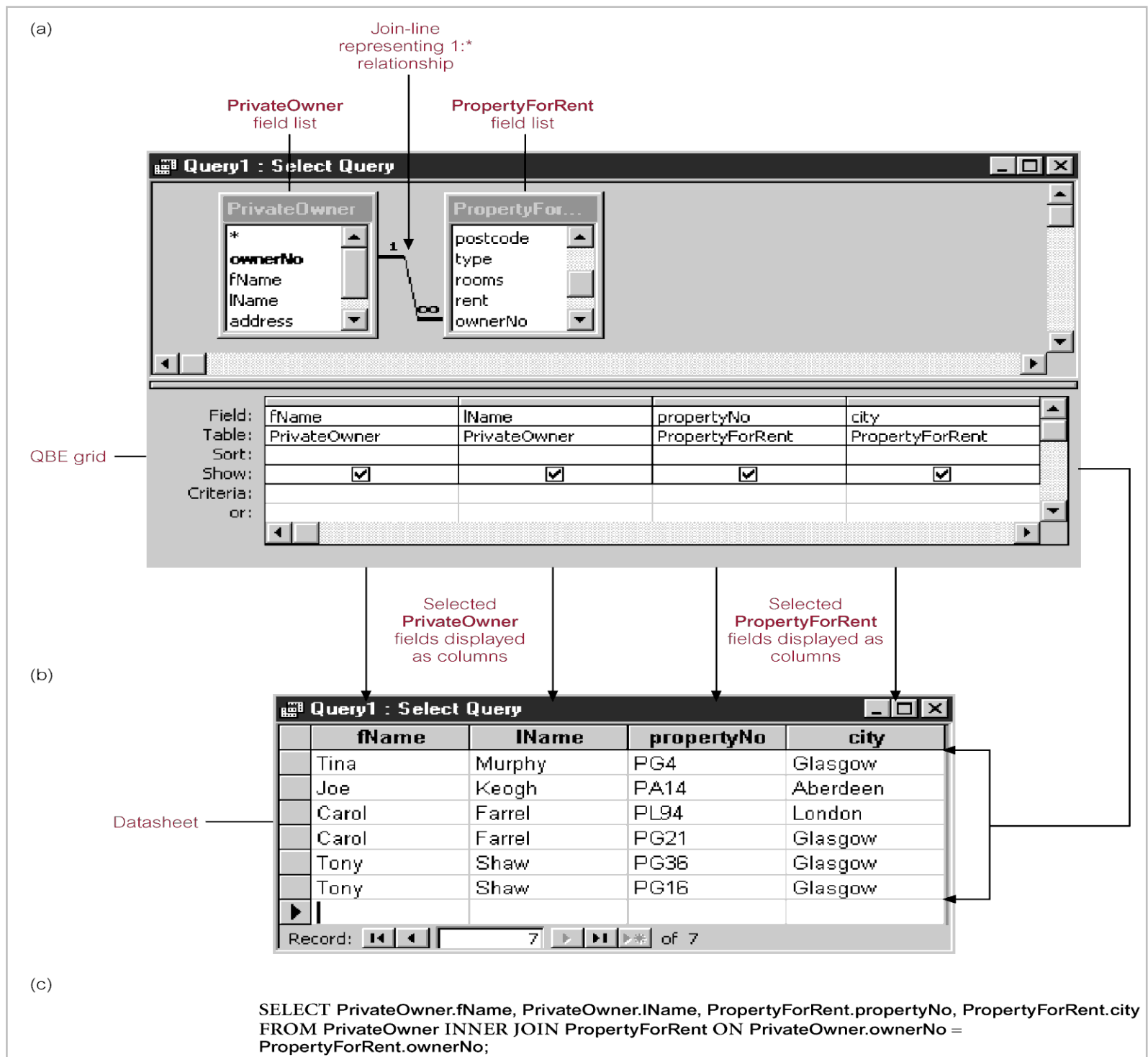
Record: 4 of 4

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



Poizvedba SELECT, izračunana polja

(a)

Field:	propertyNo	city	type	Yearly Rent: [rent]*12
Table:	PropertyForRent	PropertyForRent	PropertyForRent	
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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)

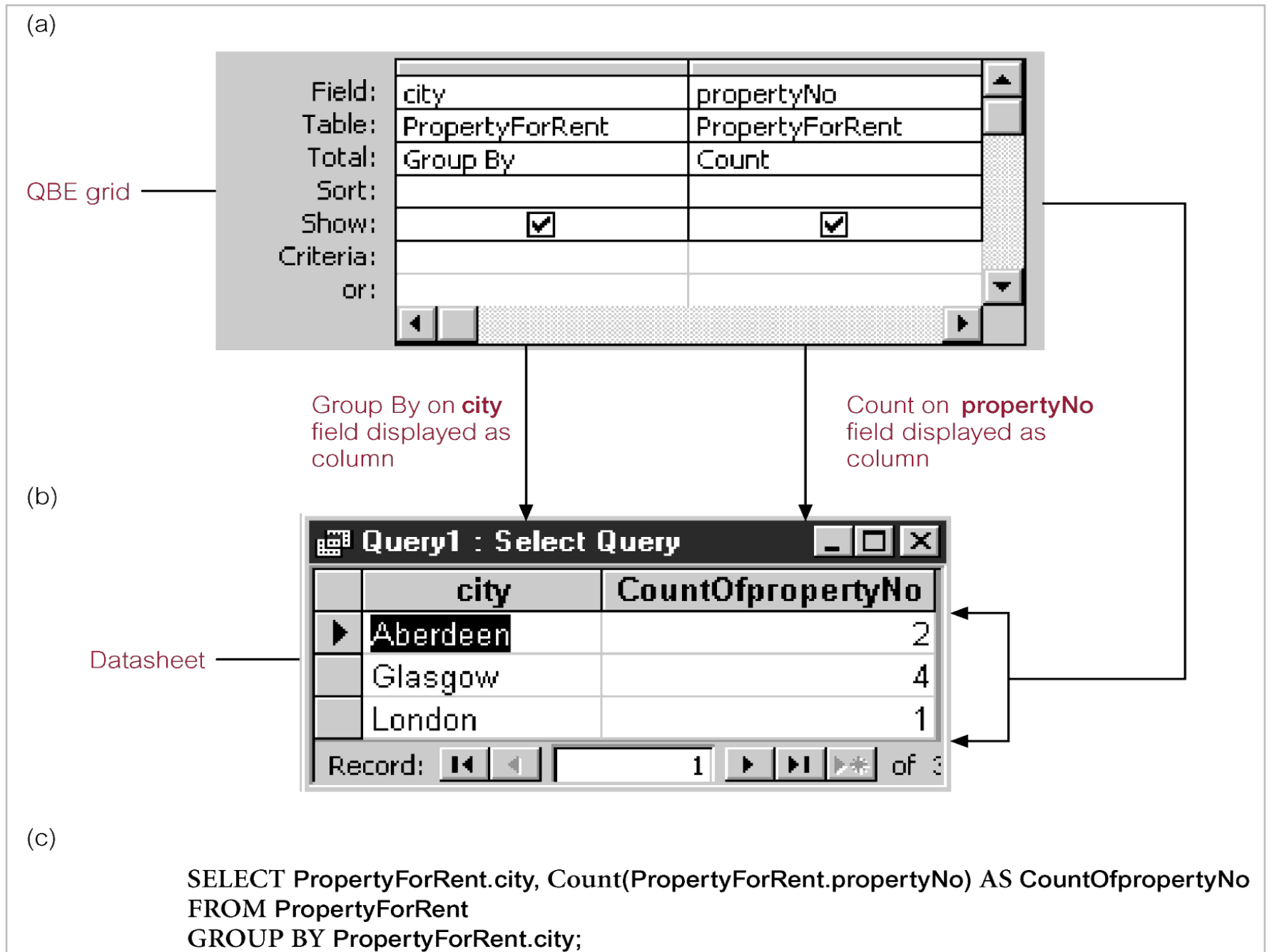
propertyNo	city	type	Yearly Rent
PA14	Aberdeen	House	7800
PG16	Glasgow	Flat	5400
PG21	Glasgow	House	7200
PG36	Glasgow	Flat	4500
PG4	Glasgow	Flat	4200
PL94	London	Flat	4800

Record: 7 of 7

(c)

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

Poizvedba SELECT, uporaba agregatov



Poizvedba SELECT, uporaba parametrov

(a)

Field:	fName	IName	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:	[Enter Owner's First name]	[Enter Owner's Last Name]		

Expression to
create prompt
for fName field

Expression to
create prompt
for IName 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)

fName	IName	propertyNo	city
Carol	Farrel	PL94	London
Carol	Farrel	PG21	Glasgow

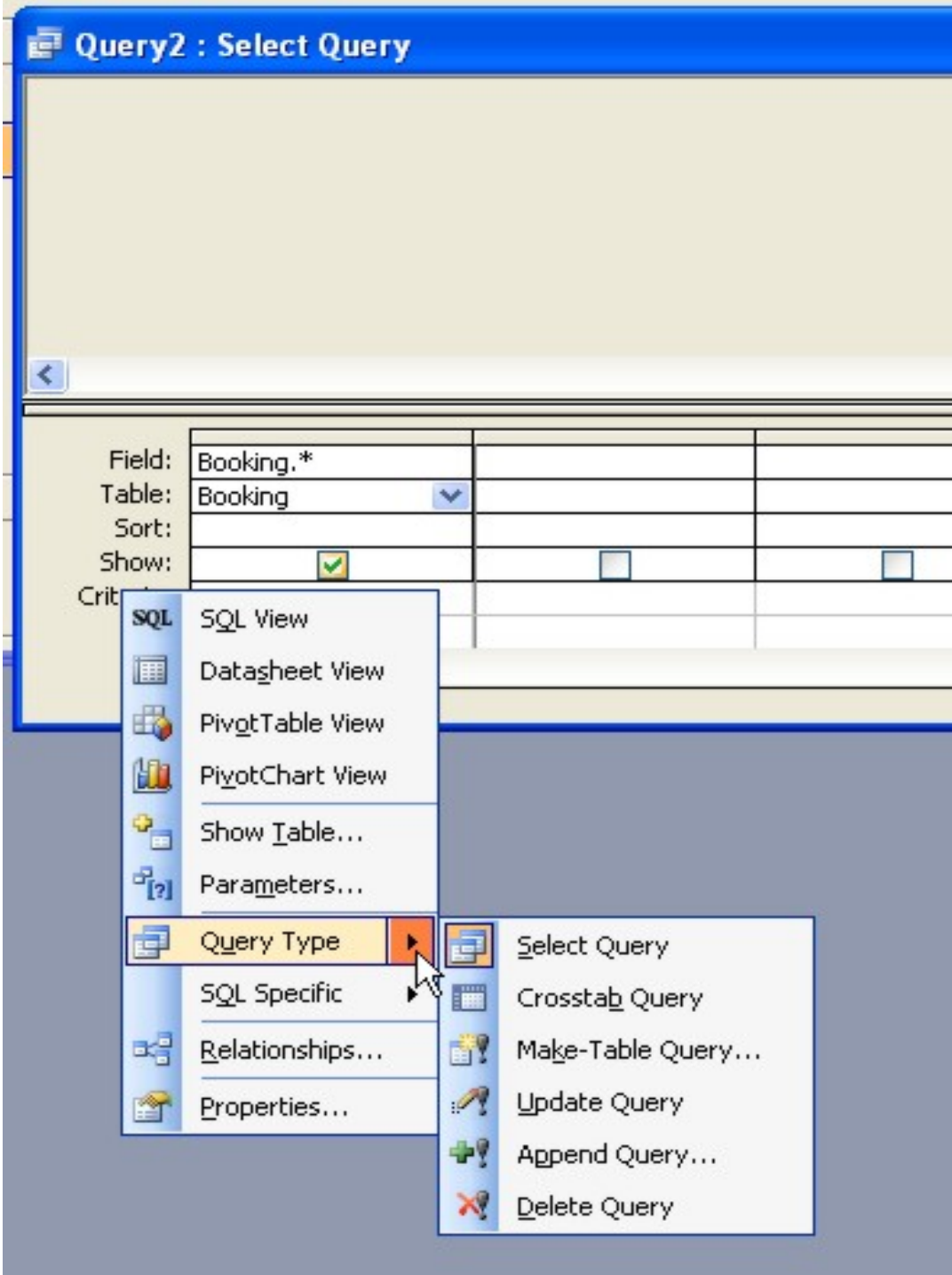
Record: 3 of 3

Records that satisfy criteria

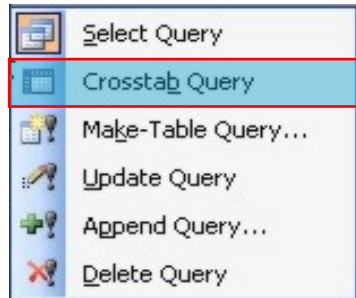
(d)

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

Posebne vrste SELECT poizvedb



Poizvedba Crosstab



(a)

Field:	fName	IName	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**, **IName**, and **type** fields displayed as columns

Count on **propertyNo** field displayed as column

(b)

Query1 : Select Query

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

(a)

propertyNo field provides values for property type columns

Field:	fName	IName	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 IName fields provide values for row heading columns

type field provide values for column heading columns

(b)

Query1 : Crosstab Query

	fName	IName	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.IName
FROM Staff INNER JOIN PropertyForRent ON Staff.staffNo = PropertyForRent.staffNo
GROUP BY Staff.fName, Staff.IName
PIVOT PropertyForRent.type;
```

Kreiranje novih tabel

(a) **Make Table** dialog box. The **Table Name** is **StaffCut**. The location is **Current Database**.

(b) **Make-table QBE grid**. Selected fields of **Staff** table for new **StaffCut** table:

Field:	staffNo	fName	lName	position	salary
Table:	Staff	Staff	Staff	Staff	Staff
Sort:					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:					
or:					

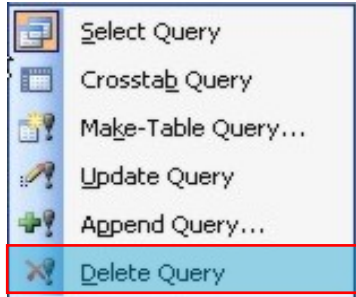
(c) **Microsoft Access** warning dialog: **You are about to paste 6 row(s) into a new table.** Once you click Yes, you can't use the Undo command to reverse the changes. Are you sure you want to create a new table with the selected records?

(d) **StaffCut : Table** datasheet. **StaffCut** datasheet showing data copied from **Staff** table:

	staffNo	fName	lName	position	salary
▶	SL21	John	White	Manager	30000
	SG37	Ann	Beech	Assistant	12000
	SG14	David	Ford	Supervisor	18000
	SA9	Mary	Howe	Assistant	9000
	SG5	Susan	Brand	Manager	24000
	SL41	Julie	Lee	Assistant	9000
*					

(e) SQL statement: `SELECT Staff.staffNo, Staff.fName, Staff.lName, Staff.position, Staff.salary INTO StaffCut FROM Staff;`

Brisanje zapisov



(a)

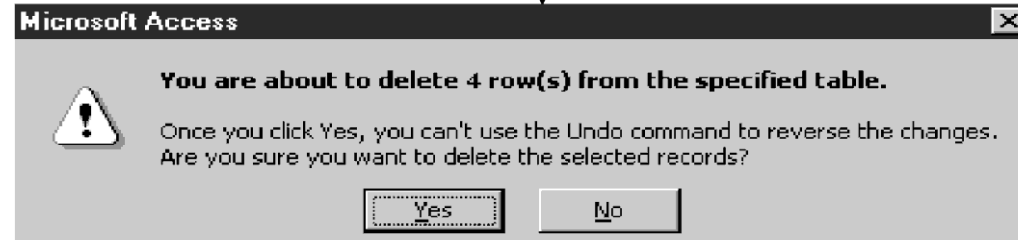
Target table for deletion

Delete QBE grid

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

Criterion for properties in Glasgow

(b)



If Yes

(c)

PropertyForRent : Table

	propertyNo	street	city	postcode
▶	PA14	16 Holhead	Aberdeen	AB7 5SU
▶	PL94	6 Argyll Street	London	NW2
*				

PropertyForRent datasheet minus deleted records (properties in Glasgow)

Viewing : Table

	clientNo	propertyNo	viewDate	comment
▶	CR56	PA14	24-May-01	too small
▶	CR62	PA14	14-May-01	no dining room
*				

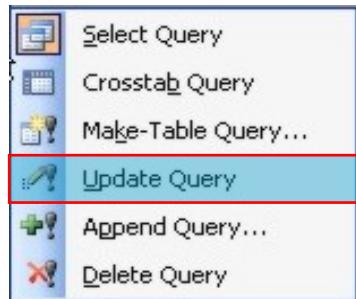
Viewing datasheet minus deleted records (viewings of properties) in Glasgow

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

(d)

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

Spreminjanje zapisov



(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	385
	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;
```



QBE orodja za MySQL

- phpMyAdmin 

- dbForge Studio for MySQL
<http://www.devart.com/dbforge/mysql/>



Active Database Software

- FlySpeed SQL Query
<http://www.activedbsoft.com/index.html>



- SQLyog MySQL
<https://www.webyog.com/>



- ...

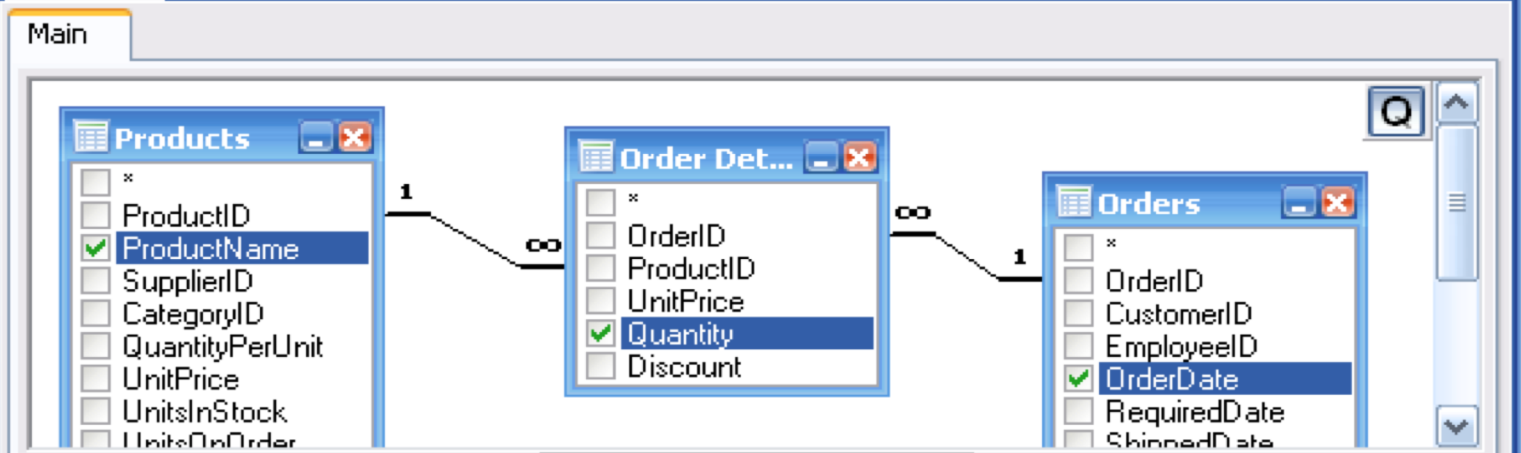


dbForge Studio for MySQL



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



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
  Products.ProductName,
  [Order Details].Quantity,
  Orders.OrderDate
From
  (Products Inner Join
    [Order Details] On Products.ProductID = [Order Details].ProductID
  Inner Join
    Orders On Orders.OrderID = [Order Details].OrderID
```




FlySpeed SQL Query



[FlySpeed DB Migrate](#)



[FlySpeed Data Export](#)



[FlySpeed SQL Query](#)



[Active Query Builder](#)

FlySpeed SQL Query

The screenshot displays the FlySpeed SQL Query tool interface. On the left is a tree view of the database schema. The main area shows a visual query diagram with three tables: 'Ord (Orders)', 'Det ([Order Details])', and 'Prod (Products)'. Lines connect 'Ord.OrderID' to 'Det.OrderID' and 'Det.ProductID' to 'Prod.ProductID'. Below the diagram is a table summarizing the query components.

Output	Expression	Aggregate	Alias	Sort Type	Sort Order	Grouping	Criteria
<input checked="" type="checkbox"/>	Ord.*					<input type="checkbox"/>	
<input type="checkbox"/>	Ord.CustomerID					<input type="checkbox"/>	In (Select c.CustomerId Fro...
<input checked="" type="checkbox"/>						<input type="checkbox"/>	

At the bottom of the window, the SQL query is displayed:

```

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%')
    
```