



# DATABASE SYSTEMS

*Forms and reports*



BUDAPESTI MŰSZAKI  
ÉS GAZDASÁGTUDOMÁNYI EGYETEM  
Építőmérnöki Kar - építőmérnöki képzés 1782 óta

Fotogrammetria és Térinformatika Tanszék

Bence Molnár

**2022.04.28.**

# AGENDA

## Bank information system

- Forms
- Reports

# BANK INFORMATION SYSTEM

Forms

Reports

A form is a tool for uploading data, while a Report is a user-friendly way to display query results.

# Reports



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# REPORTS

Provides a user-friendly and easy-to-use interface.

- Summarize or display information.
- Easy display of complex queries with parameters
- Data archiving snapshots.
- Retrieve detailed information about individual records

# REPORTS

- **Report header:** This section appears only once, at the beginning of the report. It is a good idea to include information in the report header that is usually only on the title page, e.g. logo.
- **Page header:** This section appears at the beginning of each page. For example, you can use the page header to repeat the report title on each page.
- **Group header:** This section appears before each new record group.
- **Detail - Body:** This section appears once in each line of the record source. The controls that make up the body of the report should be placed here.
- **Group footer:** This section appears at the end of each record group. Use the group foot to display summary information about that group.
- **Page footer:** This section is displayed at the end of each page. The page footer can be used to print page numbers and data for that page.
- **Report footer:** This section appears only once, at the end of the report. The report footer contains information that summarizes all records, that is, the full report.

# CREATING REPORTS

- **automatically:** select the table or query you want to report from and click the *Create -> Report* icon on the menu bar. The report designer will appear, in which all the information is already provided, leaving only the necessary formatting or transformations to be performed.
- **using wizard:** the *Create -> Report Wizard* icon on the menu bar.
- **with custom design:** you can create it using the menu item *Create -> Report Design*. This is more complicated than the previous two options, but can be formatted according to our own needs.



# NOTICE!

For simplicity, we now create reports on a table, but we usually create them for complex, multi-table queries so that we can nicely visualize the result to users!

We will also see an example of how a complex query can be easily parameterized through a report with a text box.



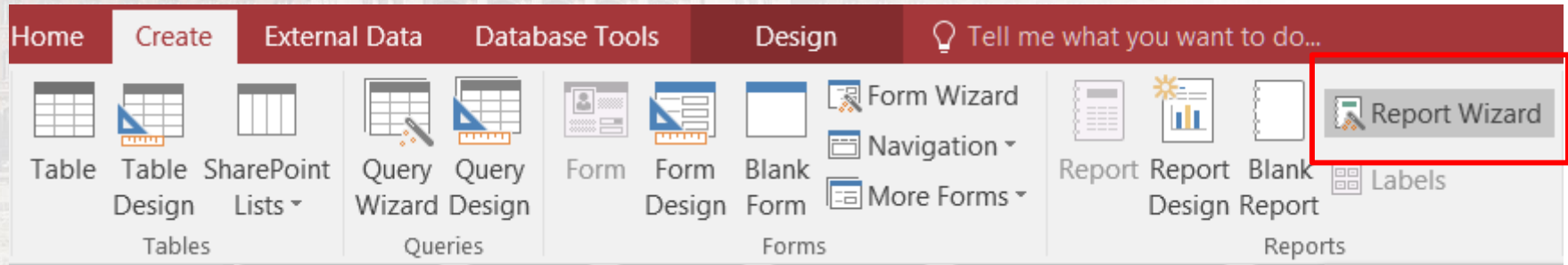
# BANK INFORMATION SYSTEM - REPORT

To create a simple report using the Report Wizard:

Make a report on the exchange rate of the currencies in the bank's cash flow, dated and grouped by currency type.

# BANK INFORMATION SYSTEM - REPORT

To create a simple report using the Report Wizard:



# BANK INFORMATION SYSTEM - REPORT

Tables/Queries:

currencyrate

Selected Fields:

currency

currencydate

ratetohuf

**Report Wizard**

Which fields do you want on your report?  
You can choose from more than one table or query.

**Tables/Queries**  
Table: currencyrate

**Available Fields:**

rid
-----

**Selected Fields:**

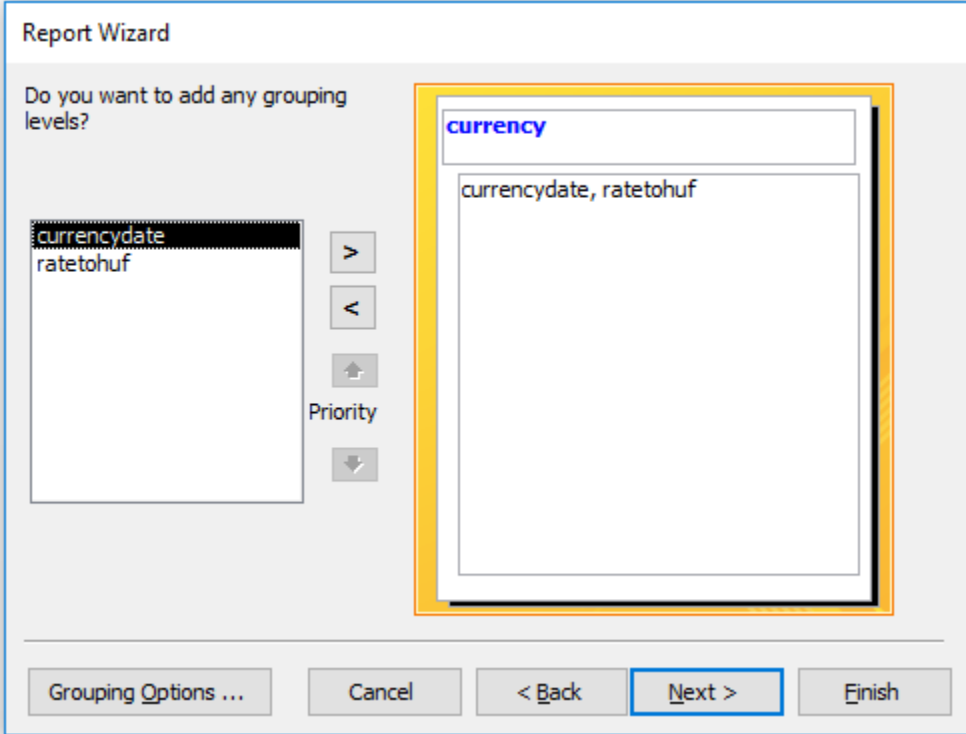
currency
currencydate
ratetohuf

Buttons: > >> < <<

Buttons: Cancel < Back Next > Finish

# BANK INFORMATION SYSTEM - REPORT

You can use grouping at several levels, for us now it is enough based on the currency field



The screenshot shows a 'Report Wizard' dialog box. It asks 'Do you want to add any grouping levels?'. On the left, a list of fields includes 'currencydate' and 'ratetohuf'. On the right, a box labeled 'currency' contains the text 'currencydate, ratetohuf'. Navigation buttons include '>', '<', 'Priority' (with up/down arrows), 'Grouping Options ...', 'Cancel', '< Back', 'Next >', and 'Finish'.

Report Wizard

Do you want to add any grouping levels?

currencydate  
ratetohuf

>  
<  
Priority  
↑  
↓

currency  
currencydate, ratetohuf

Grouping Options ... Cancel < Back Next > Finish

# BANK INFORMATION SYSTEM - REPORT

Sorting:

After the currency  
type, sort the report by  
date

Report Wizard

What sort order and summary information do you want for detail records?

You can sort records by up to four fields, in either ascending or descending order.

1	currencydate	Ascending
2		Ascending
3		Ascending
4		Ascending

Summary Options ...

Cancel < Back **Next >** Finish

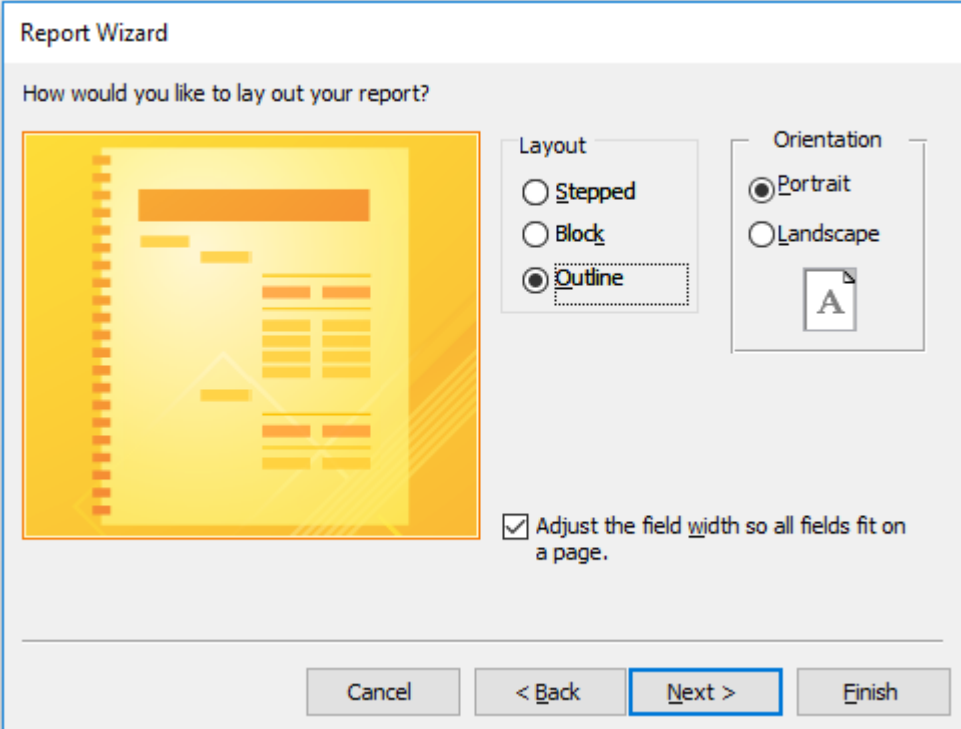
# BANK INFORMATION SYSTEM - REPORT

Set display layout:

You can choose from 3  
basic layouts

- Stepped
- Block
- Outline

Save as  
`currenyrates_by_currencies`



The image shows a 'Report Wizard' dialog box with the title 'Report Wizard'. The main question is 'How would you like to lay out your report?'. On the left is a preview of a report page with a yellow background and orange text boxes. On the right, there are two sections: 'Layout' and 'Orientation'. The 'Layout' section has three radio buttons: 'Stepped', 'Block', and 'Outline'. The 'Outline' option is selected and highlighted with a dashed border. The 'Orientation' section has two radio buttons: 'Portrait' and 'Landscape'. The 'Portrait' option is selected. Below these sections is a checkbox labeled 'Adjust the field width so all fields fit on a page.' which is checked. At the bottom are four buttons: 'Cancel', '< Back', 'Next >', and 'Finish'. The 'Next >' button is highlighted with a blue border.

Report Wizard

How would you like to lay out your report?

Layout

☐ Stepped

☐ Block

☒ Outline

Orientation

☒ Portrait

☐ Landscape

☒ Adjust the field width so all fields fit on a page.

Cancel < Back Next > Finish

# BANK INFORMATION SYSTEM - REPORT

currencyrates_by_currencies																			
Report Header																			
All Currency rates grouped by currencies																			
Page Header																			
currency Header																			
currency		currency																	
currencydate				ratetohuf															
Detail																			
currencydate				ratetohuf															
Page Footer																			
=Now()										="Page " & [Page] & " of " & [Pages]									
Report Footer																			



# BANK INFORMATION SYSTEM - REPORT

Under the **Report Design Tools - Design** tab, you will find the various controls.

Under the **Report Design Tools - Format** tab you will find the icons needed to edit the text and images.

The **Report Design Tools - Arrange** tab contains icons for page layout. Some of these can be accessed from the context menu with the current item + right mouse button combination.

# BANK INFORMATION SYSTEM - REPORT

Prepare a report on the exchange rates of the currencies in the bank's cash flow, dated and grouped by currency type, for December 2017.

The easiest way to implement the report is to create a query from which to display the data in the desired format.

# BANK INFORMATION SYSTEM - REPORT

Hint:

In the grouping settings, you can run periodic reports, but they use a predefined interval.

The screenshot shows the 'Report Wizard' dialog box. The main window has a title bar 'Report Wizard' and a question 'Do you want to add any grouping levels?'. Below this is a list box containing 'currency', 'currencydate', and 'ratetohuf'. To the right of the list box are navigation buttons: '>', '<', 'Priority' (with up/down arrows), and 'Grouping Options ...' (highlighted with a red rectangle). A sub-dialog box titled 'Grouping Intervals' is open, showing 'currencydate by Month' in its title bar. The sub-dialog asks 'What grouping intervals do you want for group-level fields?'. It has a 'Group-level fields:' section with 'currencydate' in a text box, and a 'Grouping intervals:' section with a dropdown menu showing 'Month' selected. The dropdown list also includes 'Normal', 'Year', 'Quarter', 'Month', 'Week', 'Day', 'Hour', and 'Minute'. The sub-dialog has 'OK' and 'Cancel' buttons.

# BANK INFORMATION SYSTEM - REPORT

Between Date() And Date()

Note: data format in filtering

currencyrate
*
rid
currency
currencydate
ratetohuf

Field:	currency	currencydate	ratetohuf
Table:	currencyrate	currencyrate	currencyrate
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	Between #2017-12-01# And #2017-12-31#		
or:			

# BANK INFORMATION SYSTEM - REPORT

Use the query as the source for the report. The grouping should again be based on the currency type.

The sorting is based on the date field.

The layout should be: stepped

Report Wizard

Which fields do you want on your report?  
You can choose from more than one table or query.

Tables/Queries  
Query: ossz\_valuta\_2017\_dec

Available Fields:

Selected Fields:  
currency  
currencydate  
ratetohuf

Cancel < Back Next > Finish

# BANK INFORMATION SYSTEM - REPORT

Prepare a report on the exchange rate of the euro (EUR) in the bank's cash flow, dated, the requested period can be changed dynamically.

The easiest way to implement the report is to create a query from which to display the data in the desired format.

The query does not refer to a specific time interval, but we define the date interval in general.

# BANK INFORMATION SYSTEM - REPORT

We have two parameters in the query  
[interval\_start] and [interval\_end]

currencyrate
*
🔑 rid
currency
currencydate
ratetohuf

Field:	currency	ratetohuf	currencydate	currencydate
Table:	currencyrate	currencyrate	currencyrate	currencyrate
Total:	Group By	Group By	Group By	Expression
Sort:			Ascending	
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"EUR"			Between [interval_start] And [interval_end]
or:				



# BANK INFORMATION SYSTEM - REPORT

Report Header

EUR currency rates

[interval\_start] [interval\_end]

Page Header

currency currencydate ratetohuf

currency Header

currency

Detail

currencydate ratetohuf

Page Footer

=Now()

Report Footer

Display a period in the report with the parameters [interval\_start] and [interval\_end] in the query

Display a period in the report with the parameter [interval\_start] and [interval\_end] in the query

# BANK INFORMATION SYSTEM - REPORT

Use calculated value in reports:

The currency type is grouped, so you can add a text box in the group header or group footer section, and then use the Avg function to get an average value per currency.

The screenshot displays a report design tool interface with a horizontal ruler at the top showing columns 1 through 20. The report layout is organized into several sections:

- Report Header:** Contains a text box with the text "all\_currencyrate\_2017\_dec".
- Page Header:** Contains two text boxes: "currencydate" and "ratetohuf".
- currency Header:** Contains a text box with the text "currency". This section is highlighted with a red box.
- Detail:** Contains two text boxes: "currencydate" and "ratetohuf". A red box highlights a calculated field box containing the text "AVG" and a formula box containing the text "=Avg([ratetohuf])".
- Page Footer:** Contains a text box with the text "=Now()" and a text box with the text ="Page " & [Page] & " of " & [Pages].
- Report Footer:** Is currently empty.

# Forms



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# FORMS

Forms are database objects that can be used to create the user interface for databases. Through the forms, users can enter data in a graphical interface in a controlled form.

Types of forms:

- bound: have a record source; They perform DML tasks

- optional: no record source; perform design, menu and other tasks

// DML- (Data Manipulation Language) Data management language for database //

# FORMS

Bounded forms:

Single item: only one record can be viewed and edited at a time, other records can only be accessed by scrolling

Multiple items: the data of all records is visible at once, the current one can be edited

# FORMS

- **Form header:** This section appears only once, at the beginning of the form. It is advisable to place information in the form header that is usually only on the title page, e.g. logo.
- **Detail - Body:** This section appears once in each line of the record source. The controls that make up the body of the form should be placed here.
- **Form footer:** This section appears only once, at the end of the form.

# CREATING FORMS

***automatically:*** select the table or query you want to report from and click the *Create -> Form* icon on the menu bar. The report designer will appear, in which all the information is already provided, leaving only the necessary formatting or transformations to be performed.

***using wizard:*** the *Create -> Form Wizard* icon on the menu bar.

***with custom design:*** you can create it using the menu item *Create -> Form Design* in the menu bar. This is more complicated than the previous two options, but can be formatted according to our own needs.

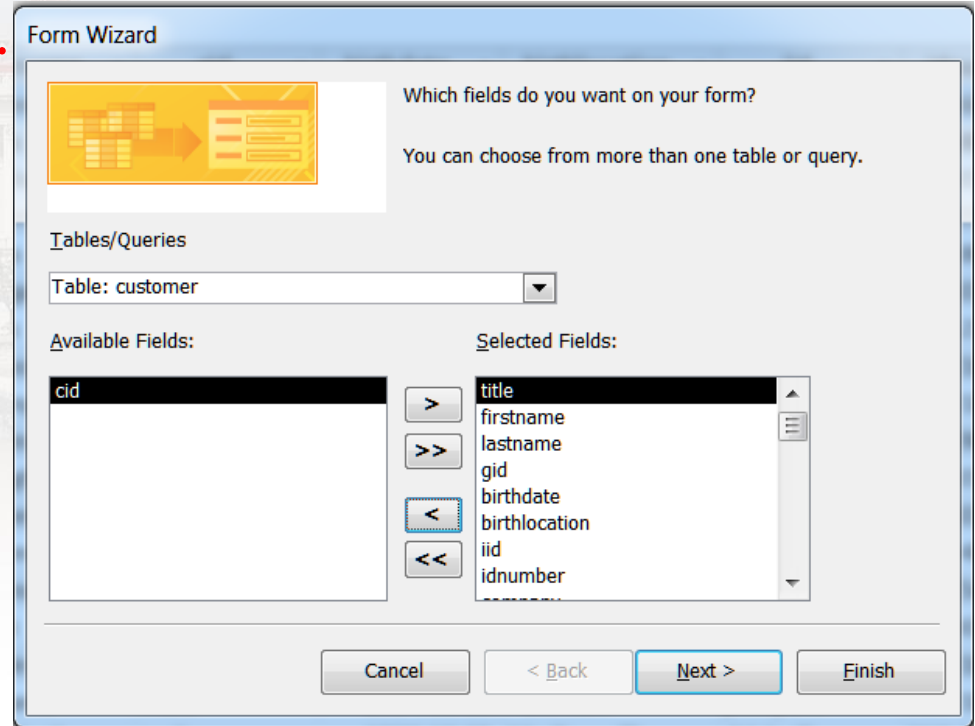


# CREATING FORMS

Create a form to add a new client.

1.

The easiest way is to place each element in the form using the form wizard and then edit it as needed.



The screenshot shows the 'Form Wizard' dialog box in Microsoft Access. The title bar reads 'Form Wizard'. Inside the dialog, there is a yellow icon on the left and text on the right asking 'Which fields do you want on your form?' and 'You can choose from more than one table or query.' Below this, there is a section labeled 'Tables/Queries' with a dropdown menu showing 'Table: customer'. Underneath, there are two lists: 'Available Fields:' and 'Selected Fields:'. The 'Available Fields:' list contains 'cid'. The 'Selected Fields:' list contains 'title', 'firstname', 'lastname', 'gid', 'birthdate', 'birthlocation', 'iid', and 'idnumber'. Between the two lists are four arrow buttons: '>', '>>', '<<', and '<'. At the bottom of the dialog are four buttons: 'Cancel', '< Back', 'Next >', and 'Finish'.

Form Wizard

Which fields do you want on your form?

You can choose from more than one table or query.

Tables/Queries

Table: customer

Available Fields:

cid

Selected Fields:

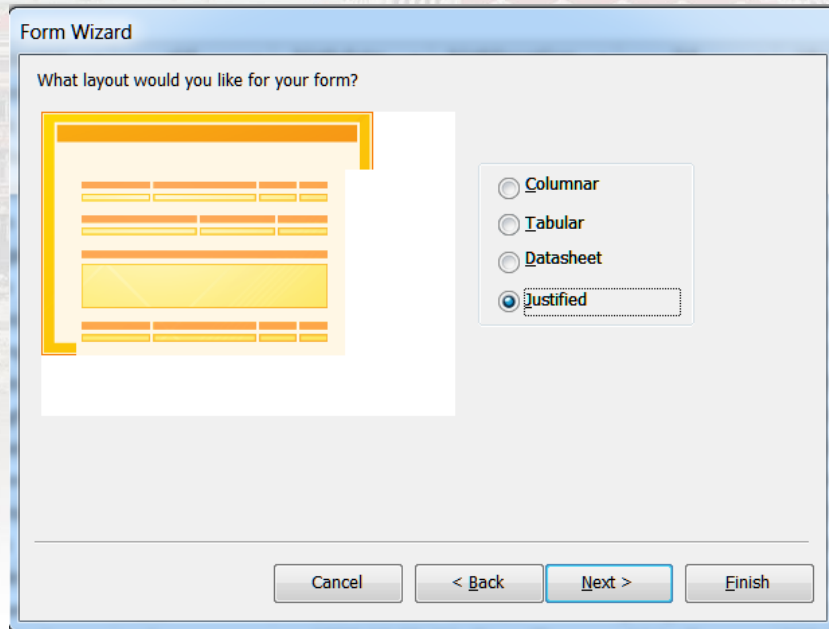
title  
firstname  
lastname  
gid  
birthdate  
birthlocation  
iid  
idnumber

Cancel < Back Next > Finish

# CREATING FORMS

Create a form to add a new client.

2.



Form Wizard

What layout would you like for your form?

☐ Columnar

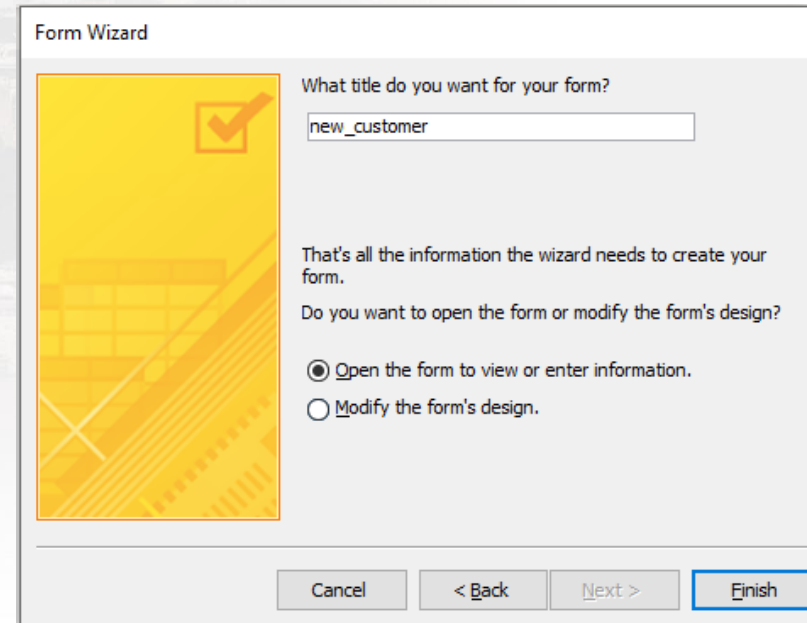
☐ Tabular

☐ Datasheet

☒ Justified

Buttons: Cancel, < Back, Next >, Finish

3.



Form Wizard

What title do you want for your form?

new\_customer

That's all the information the wizard needs to create your form.

Do you want to open the form or modify the form's design?

☒ Open the form to view or enter information.

☐ Modify the form's design.

Buttons: Cancel, < Back, Next >, Finish

# CREATING FORMS

If you do not use the form wizard, make sure that the data source link points (bounds) to the appropriate field name for each field that you want to display.



### Property Sheet

Selection type: List Box

gid

Format	Data	Event	Other	All
Control Source	gid			
Row Source	gender			
Row Source Type	Table/Query			
Bound Column	1			
Allow Value List Edits	No			
List Items Edit Form				

### Property Sheet

Selection type: List Box

gid

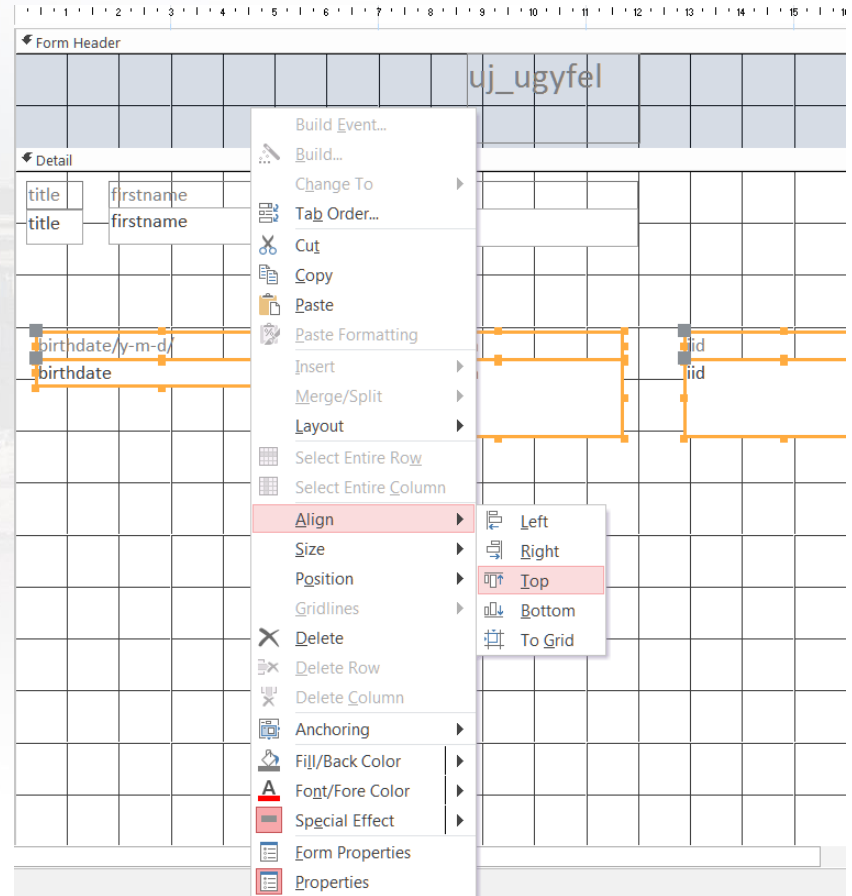
Format	Data	Event	Other	All
Control Source	gid			
Row Source	title			
Row Source Type	firstname			
Bound Column	lastname			
Allow Value List Edits	gid			
List Items Edit Form	birthdate			
Inherit Value List	birthlocation			
Show Only Row Source Values	iid			
Default Value	idnumber			
Validation Rule	company			
Validation Text	country			
Enabled	state			
Locked	city			
	zipcode			
	address			
	email			
	phone			

# CREATING FORMS

Right-click to align items, even with multiple selections

- Align alignment
- Size
- Position placement / position

submenus are possible in addition to the drag & drop technique.



# CREATING FORMS

Create a visual delimiter for the form: Form Design Tools – Design  
Line command

The screenshot shows a form design tool interface with a grid. The grid contains several input fields with labels in Hungarian and English. The fields are arranged in a structured manner, with some fields spanning multiple columns. A horizontal line is drawn across the bottom of the grid, likely representing a visual delimiter.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
születési idő / év-hónap-nap/ birthdate				születés helye birthlocation				azonosító okmány típusa id				okmány száma idnumber								
company																				
company																				
A horizontal line is drawn across the bottom of the grid.																				

Draw a straight line:

Shift + click + drag or Property Sheet options

The screenshot shows the 'Property Sheet' for a 'Line' object. The 'Selection type' is 'Line'. The 'Line33' dropdown is visible. The 'Format' tab is selected. The 'Width' property is set to '21cm' and the 'Border Width' property is set to '5 pt'. Both are highlighted with red boxes.

Property Sheet	
Selection type: Line	
Line33	
Format	Data
Event	Other
All	
Visible	Yes
Line Slant	\
Width	21cm
Height	0cm
Top	7,005cm
Left	0,106cm
Border Style	Solid
Border Width	5 pt
Border Color	Text 1
Special Effect	Flat
Gridline Style Top	Transparent
Gridline Style Bottom	Transparent
Gridline Style Left	Transparent
Gridline Style Right	Transparent
Gridline Width Top	1 pt
Gridline Width Bottom	1 pt
Gridline Width Left	1 pt
Gridline Width Right	1 pt

# CREATING FORMS

Label the contacts area.

Label: for static display of text information only

Text box: suitable for displaying our data stored in the tables, query results or query parameters



Contents of the label Label34  
Contacts:

## Property Sheet

Selection type: Label

Label34

Format

Data

Event

Other

All

Caption

Elérhetőségek:

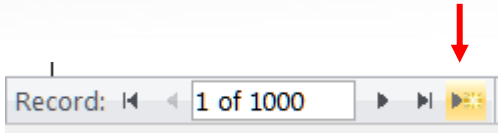
Visible

Yes

# CREATING FORMS

If we have composed the form in design view and switched to Form view, we can see and edit the data stored in the customer table!

Add a new record

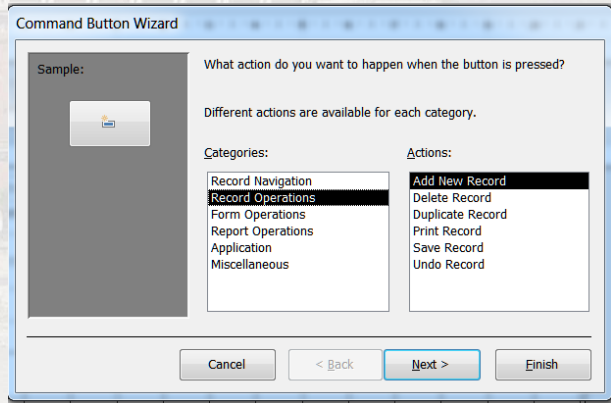




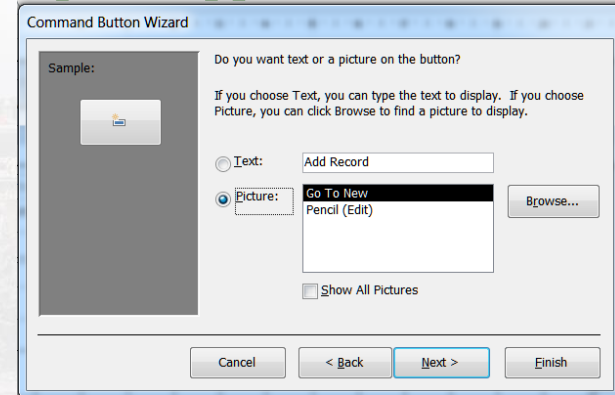
# CREATING FORMS

Create a button that will add a new record to the table

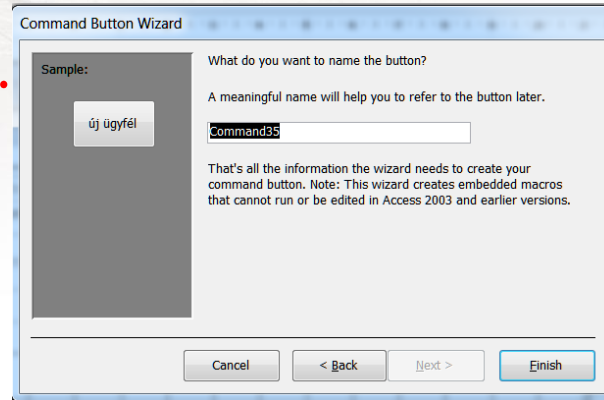
1.



2.



3.

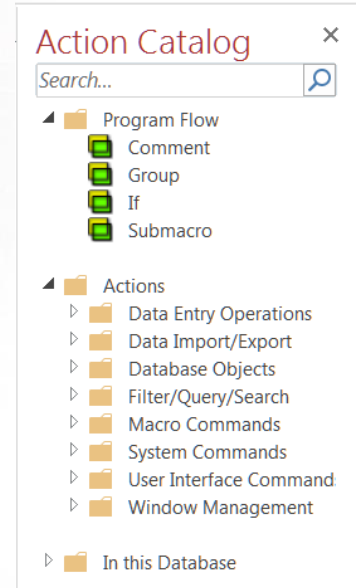
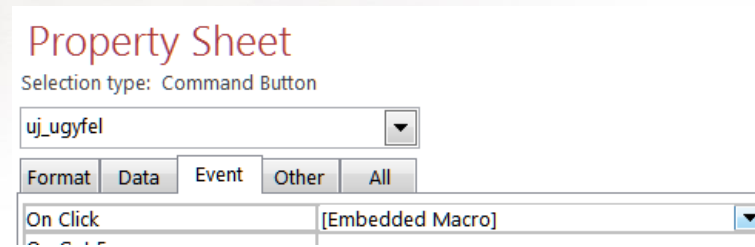
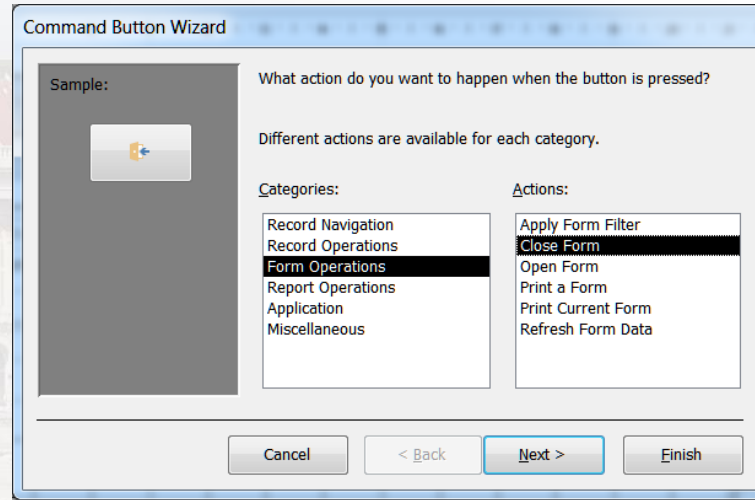


It is a good idea to rename the button from the default to make it easier to change

# CREATING FORMS

You can choose from various basic action buttons, or use the embedded macros / visual basic instructions to completely customize the data entry forms to the desired process.

// the buttons can also be placed on the reports //



# CREATING FORMS

Create a Home view (landing page) that opens by default after the database is started.

a. file- options- current db-display form

b. macro: create new macro

open form

save is as AutoExec and it will start on every startup automatically

# CREATING FORMS

Create a home form

Use the action buttons to open the created new customer data entry form and the currency exchange rate report.

The screenshot displays a software window titled "Form1" with a standard Windows-style title bar. Below the title bar is a horizontal ruler with a scale from 1 to 17. The main content area is a grid with a vertical axis on the left labeled from 1 to 14. The grid contains the following elements:

- A label "Bank information system" positioned above a logo.
- A logo consisting of a square divided diagonally from the top-left to the bottom-right, with a dome-like shape at the bottom center.
- A blue button labeled "Add new customer" located at the bottom left of the grid.
- A blue button labeled "EUR currency rates" located at the bottom right of the grid.

# CREATING FORMS

a.

**Access Options**

General

Current Database

Datasheet

Object Designers

Proofing

Language

Client Settings

Customize Ribbon

Quick Access Toolbar

Add-ins

Trust Center

**Options for the current database.**

**Application Options**

Application Title:

Application Icon:

☐ Use as Form and Report Icon

Display Form:

Web Display Form: (none)

☒ Display Status Bar

Document Window C:

☐ Overlapping Windows

☒ Tabbed Documents

b.

Create External Data Database Tools Tell me what you want to do...

Table Design Tables SharePoint Lists Queries Query Wizard Design Form Design Forms Blank Form Navigation More Forms Reports Report Wizard Labels Report Design Report Blank Design Report

Macro Module Class Module Visual Basic Macros & Code

Add logic to your database to automate repetitive tasks and

home AutoExec

**OpenForm**

Form Name home

View Form

Filter Name

Where Condition

Data Mode

Window Mode Normal

+ Add New Action

# CONCLUSION

## Bank information system

- Forms
- Reports



**Thank you for your attention!**

*Questions?*



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