

`Home for Home`

Documentation for an estate agent`s database

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Course: Cloud Computing, Year 1, Term 3

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Introduction

Nowadays databases are widely use in the world by the companies. People meets databases day-by-day, hour-by hour. When we plan our journeys to workplace by timetable, when we look a leaflet about discount products in a shop, we use databases or a report from database without we are knowing that.

Database`s common features they arrange data`s in table and structured them. MS Access is one of the databases, maybe the most popular and most widespread. MS Access organizes data`s in rows and columns. The columns have name, what describe the data`s called entity. The smallest unit of classified information is the table. In one table the program collects same details in one column. By developing a database system, the success based on the tables. If we have all the tables need, suppose to connect the relevant to each other. This relationship connection forming the ground to make a proper database. To create forms, the tables and relationship help developers. Queries and reports also need a well-build base of tables.

`Home for Home` database

After reading the description, I created a list of possible entities and attributes. First, I checked them to meet the criteria of 3 Normalisation Form. The following screenshots show, how changed and developed them through the process.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Entities for "Home for Home"		Final name of entities														
2																	
3	Shops		branches														
4	Properties		properties														
5	Viewing		viewings														
6	Buyers		buyers														
7	Sellers		sellers														
8	Offers		offers														
9	Staff		employees														
10																	
11	1. NF: No multivalued attributes, only one and no repeated attributes																
12	2. NF: No partial key dependency, composite primary key making, make a primary key from two other primary key, data have dependency fully from both original primary key																
13	3. NF: Transitive dependency, no any attributes depend on another one, what is not primary key																
14																	
15		Primary key															
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Screenshot #1 – the Entities

AutoSave **On** HfH_normalisation_1814098.xlsx - Excel Gergely Somogyi (1814098) GS

File Home Insert Page Layout Formulas Data Review View Help Search Share Comments

A11 Branches_ID

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	UN:												
2	Shop_ID	Address	PostCode	Staff_ID	Phone_Number	Fax_Number	Email_Address						
3													
4	1NF:												
5	Shop_ID	Address	PostCode	Staff_ID	Phone_Number	Fax_Number	Email_Address						
6													
7	2NF:												
8	Shop_ID	Shop_Address	Shop_PostCode	Shop_Phone_Number	Shop_Fax_Number	Shop_Email_Address							
9													
10	3NF:												
11	Branches_ID	Branches_Address	Branches_PostCode	Branches_Phone_Number	Branches_Fax_Number	Branches_Email_Address	Emp_ID						
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Entities list Branches Buyers Employees Offers Properties Sellers Viewing

Screenshot #2 – the Branches

AutoSave **On** HfH_normalisation_1814098.xlsx - Excel Gergely Somogyi (1814098) GS

File Home Insert Page Layout Formulas Data Review View Help Search Share Comments

A11 Buyer_ID

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	UN:													
2	Buyer_ID	First_Name	Last_Name	Mobile_Number	Email_Address	Address	Postcode							
3														
4	1NF:													
5	Buyer_ID	First_Name	Last_Name	Mobile_Number	Email_Address	Address	Postcode							
6														
7	2NF:													
8	Buyer_ID	Buyer_First_Name	Buyer_Last_Name	Buyer_Mobile_Number	Buyer_Email_Address	Buyer_Address	Buyer_Postcode							
9														
10	3NF:													
11	Buyer_ID	Buyer_First_Name	Buyer_Last_Name	Buyer_Mobile_Number	Buyer_Email_Address	Buyer_Address	Buyer_Postcode	Emp_ID						
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Entities list Branches Buyers Employees Offers Properties Sellers Viewing

Screenshot #3 – the Buyers

AutoSave HfH_normalisation_1814098.xlsx - Excel Gergely Somogyi (1814098)

File Home Insert Page Layout Formulas Data Review View Help Search

A11 Emp_ID

	A	B	C	D	E	F	G	H	I	J	K
1	UN:										
2	Staff_ID	First_Name	Last_Name	Mobile_Number	Email_Address	Shop_ID					
3											
4	1NF:										
5	Staff_ID	First_Name	Last_Name	Mobile_Number	Email_Address	Shop_ID					
6											
7	2NF:										
8	Staff_ID	Staff_First_Name	Staff_Last_Name	Staff_Mobile_Number	Staff_Email_Address	Shop_ID					
9											
10	3NF:										
11	Emp_ID	Emp_First_Name	Emp_Last_Name	Emp_Mobile_Number	Emp_Email_Address	Emp_Username	Emp_Password				
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Entities list Branches Buyers **Employees** Offers Properties Sellers Viewing

Screenshot #4 – the Employees

AutoSave HfH_normalisation_1814098.xlsx - Excel Gergely Somogyi (1814098)

File Home Insert Page Layout Formulas Data Review View Help Search

A11 Offer_ID

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	UN:															
2	Property_ID	Buyer_ID	Seller_ID	Offered_Amount	Offer_Date											
3																
4	1F:															
5	Property_ID	Buyer_ID	Seller_ID	Offered_Amount	Offer_Date											
6																
7	2F:															
8	Offer_ID	Property_ID	Buyer_ID	Seller_ID	Offered_Amount	Offer_Date										
9																
10	3F:															
11	Offer_ID	Offered_Initial_Amount	Offered_Final_Amount	Offer_Date	Property_ID	Buyer_ID										
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Entities list Branches Buyers Employees **Offers** Properties Sellers Viewing

Screenshot #5 – the Offers

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File Home Insert Page Layout Formulas Data Review View Help Search

M17

	A	B	C	D	E	F	G	H	I	J
1	UN:									
2	Property_ID	Address	Postcode	Price	Seller_ID	Description	Number_of_Bedroom	Number_of_Bathroom	Level	Type
3										
4	1F:									
5	Property_ID	Address	Postcode	Property_City	Price	Seller_ID	Property_Description	Property_Number_of_Bedroom	Property_Number_of_Bathroom	Type
6										
7	2F:									
8	Property_ID	Property_Address	Property_Postcode	Property_City	Property_Asking_Price	Seller_ID	Property_Description	Property_Number_of_Bedroom	Property_Number_of_Bathroom	Property_Type
9										
10	3F:									
11	Property_ID	Property_Address	Property_Postcode	Property_City	Property_Asking_Price	Seller_ID	Property_Description	Property_Number_of_Bedroom	Property_Number_of_Bathroom	Property_Type
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Entities list Branches Buyers Employees Offers **Properties** Sellers Viewing

Screenshot #6 – the Properties (part 1)

AutoSave Off HfH_normalisation_1814098.xlsx - Excel Gergely Somogyi (1814098) GS Share Comments

File Home Insert Page Layout Formulas Data Review View Help Search

A1 UN:

	A	G	H	I	J	K	L	M	N	O
1	UN:									
2	Property_ID	Number_of_Bedroom	Number_of_Bathroom	Level	Type	Garden	Parking lot	Garage		
3										
4	1F:									
5	Property_ID	Property_Description	Property_Number_of_Bedroom	Property_Number_of_Bathroom	Type	Property_Level	Property_Garden	Property_Parking_lot	Property_Garage	
6										
7	2F:									
8	Property_ID	Property_Description	Property_Number_of_Bedroom	Property_Number_of_Bathroom	Property_Type	Property_Level	Property_Garden	Property_Parking_lot	Property_Garage	
9										
10	3F:									
11	Property_ID	Property_Description	Property_Number_of_Bedroom	Property_Number_of_Bathroom	Property_Type	Property_Level	Property_Garden	Property_Parking_lot	Property_Garage	Emp_ID
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Screenshot #7 – the Properties (part 2)

AutoSave On HfH_normalisation_1814098.xlsx - Excel Gergely Somogyi (1814098) GS

File Home Insert Page Layout Formulas Data Review View Help Search Share Comments

A11 Seller_ID

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	UN:													
2	Seller_ID	First_Name	Last_Name	Mobile_Number	Email_Address	Address	PostCode	Property_ID						
3														
4	1NF:													
5	Seller_ID	First_Name	Last_Name	Mobile_Number	Email_Address	Address	PostCode	Property_ID						
6														
7	2NF:													
8	Seller_ID	Seller_First_Name	Seller_Last_Name	Seller_Mobile_Number	Seller_Email_Address	Seller_Address	Seller_PostCode	Property_ID						
9														
10	3NF:													
11	Seller_ID	Seller_First_Name	Seller_Last_Name	Seller_Mobile_Number	Seller_Email_Address	Seller_Address	Seller_PostCode	Emp_ID						
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Entities list Branches Buyers Employees Offers Properties **Sellers** Viewing

Screenshot #8 – the Sellers

AutoSave On HfH_normalisation_1814098.xlsx - Excel Gergely Somogyi (1814098) GS

File Home Insert Page Layout Formulas Data Review View Help Search Share Comments

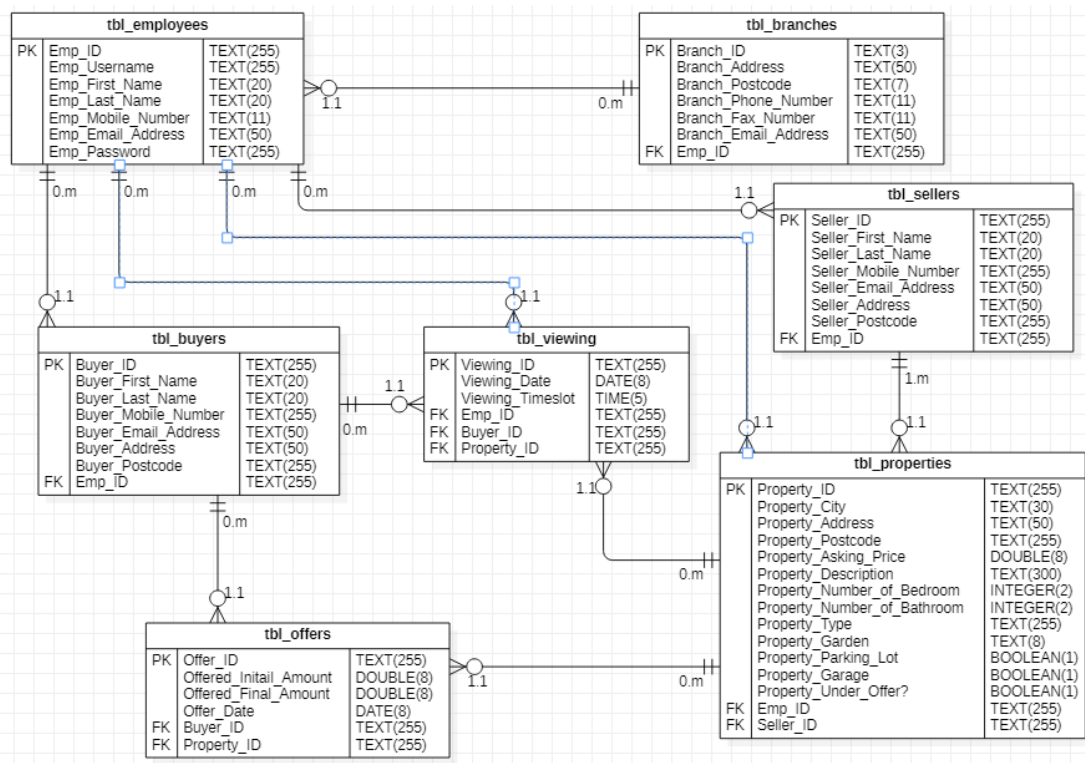
A14 Viewing_ID

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	UN:																	
2	Property_ID	Buyer_ID	Staff_ID	Date	Time_Slot													
3																		
4																		
5																		
6																		
7	1F:																	
8	Viewing_ID	Property_ID	Buyer_ID	Staff_ID	Date	Time_Slot												
9																		
10	2F:																	
11	Viewing_ID	Property_ID	Buyer_ID	Staff_ID	Date	Time_Slot												
12																		
13	3F:																	
14	Viewing_ID	Property_ID	Buyer_ID	Emp_ID	Viewing_Date	Viewing_Time_Slot												
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Entities list Branches Buyers Employees Offers Properties Sellers **Viewing**

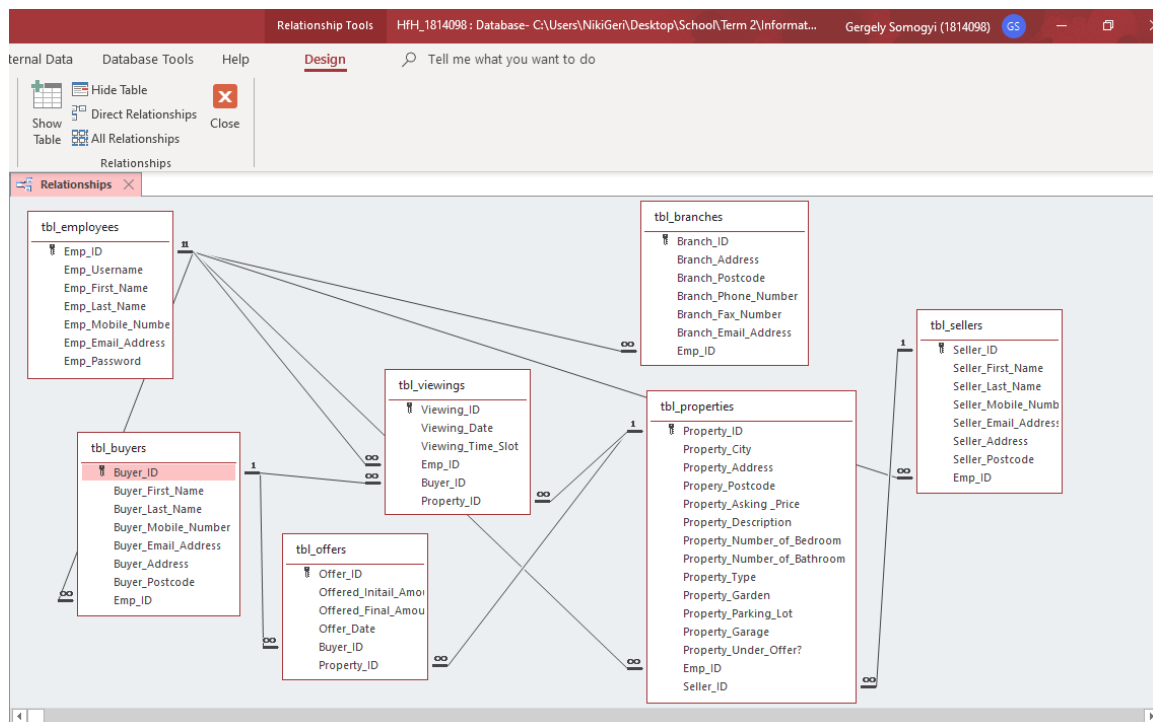
Screenshot #9 – the Viewing

As I finished this part, I developed the properties of the attributes. I gave input mask to all attributes also, where it was possible. Screenshot #10 represents this, through the ER diagram. I explain the masks later, when represent the tables.



Screenshot #10

Next step was to design the relationships to all entities. The relationships are showing above at Screenshot #10 also, Screenshot #11 from the database.

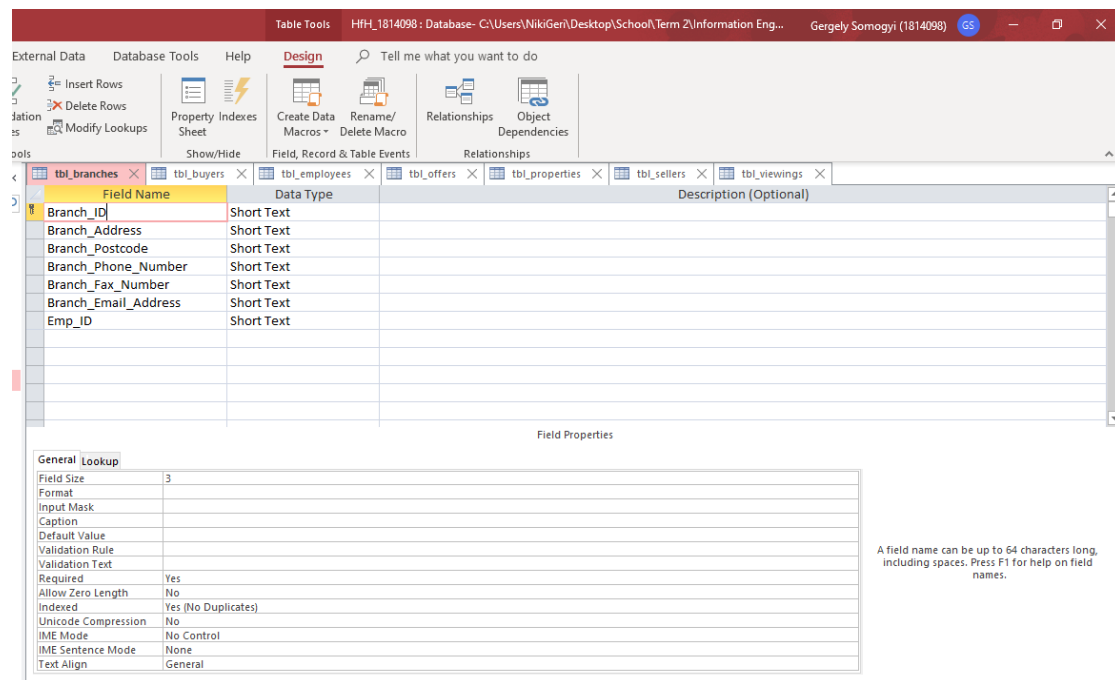


Screenshot #11

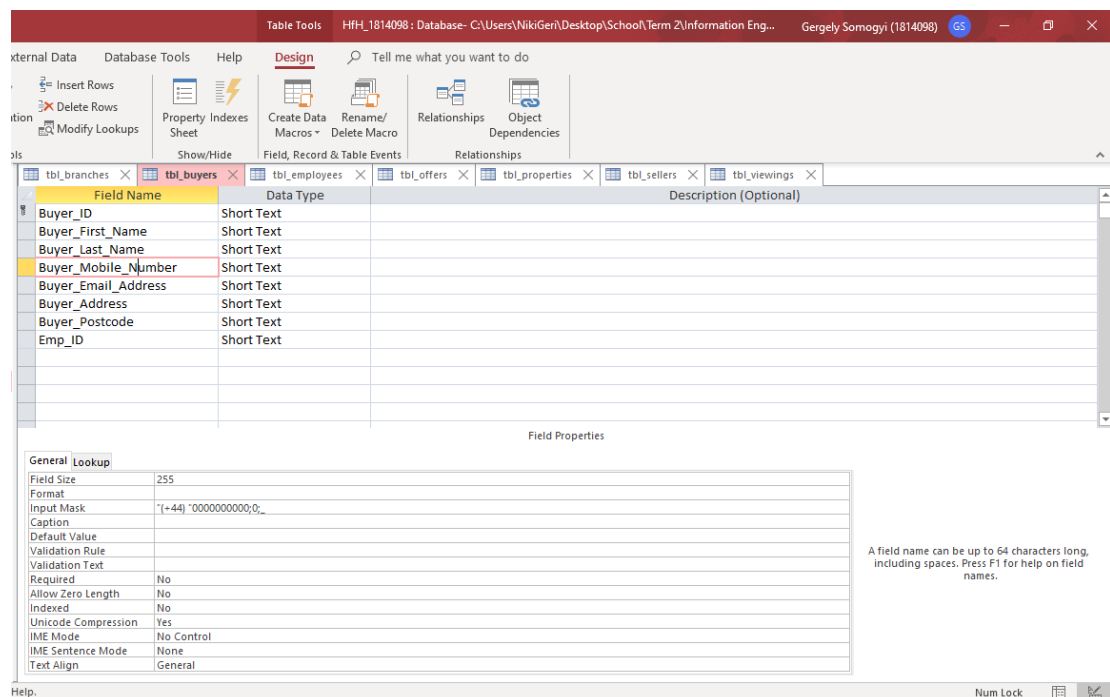
Elements of the database

Tables

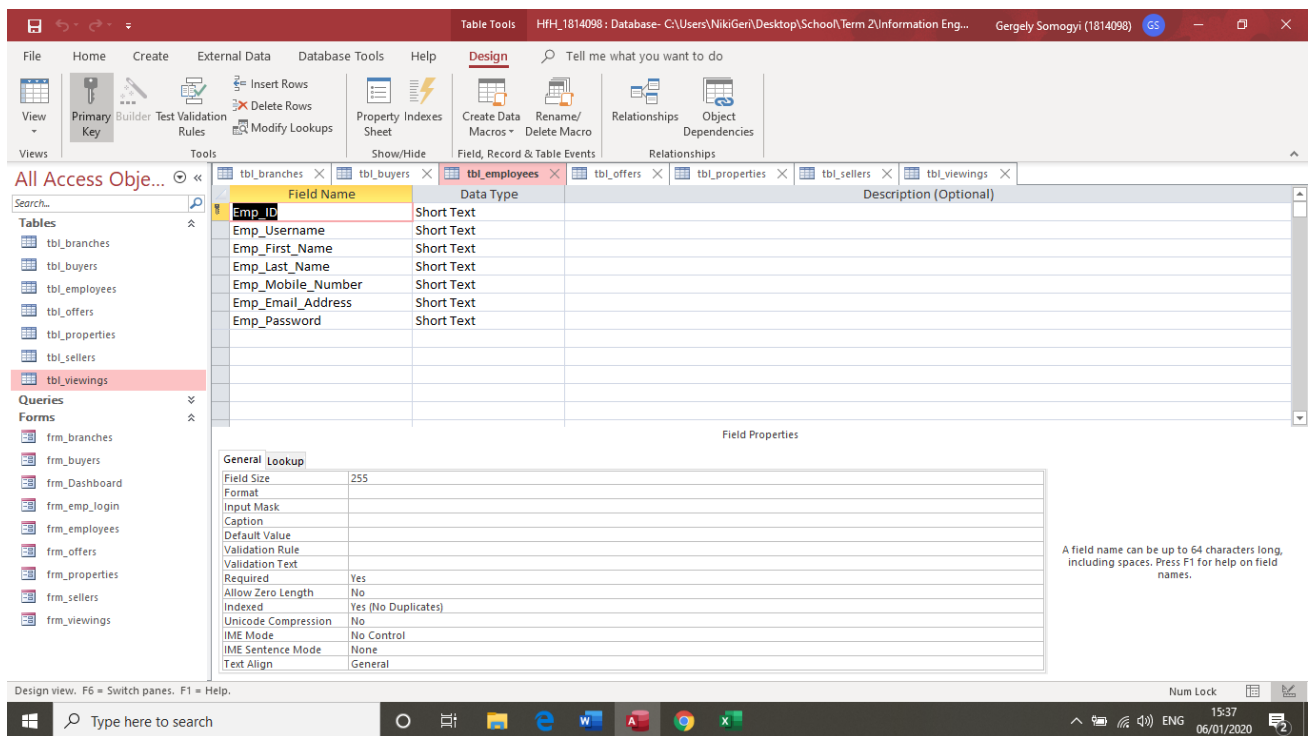
The following screenshots demonstrate the tables from the database. All primary keys are required and indexed, without allowing zero length. Wherever the attributes call kind of Phone or Fax number of its table, the input mask allows only real UK phone number. Wherever the attributes call kind of PostCode of its table, the input mask allows only real UK post code. Wherever the attributes call kind of date of its table, the input mask allows only real dates. Screenshots display example for input masks. At the table called Properties, I used some Yes/No data types.



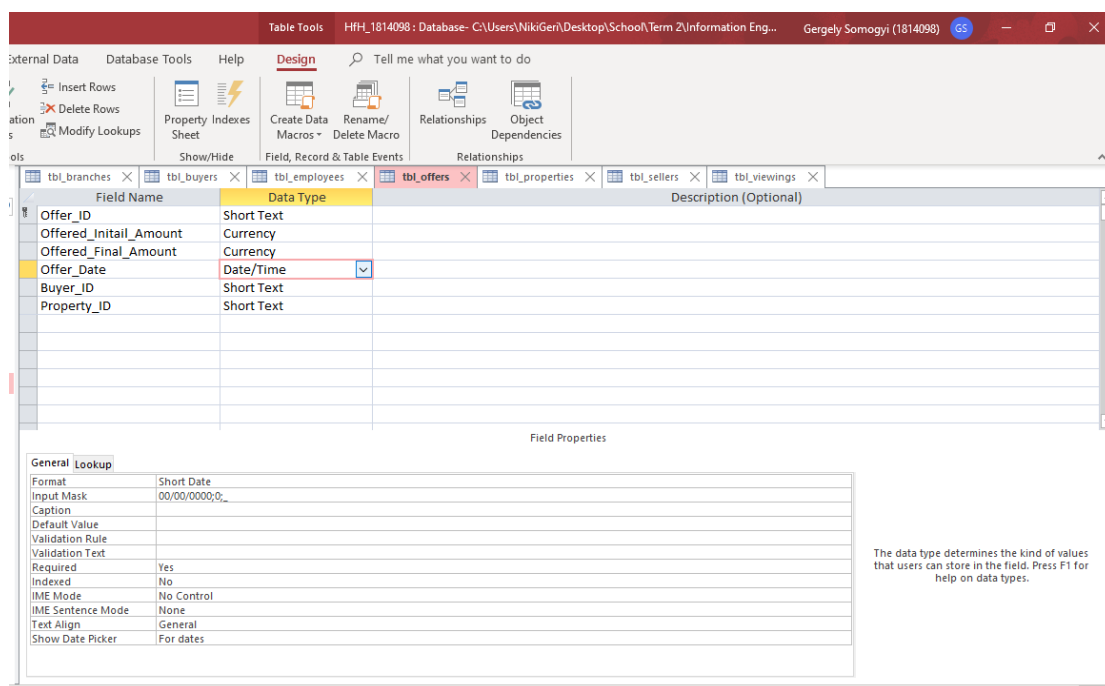
Screenshot #12 – tbl_branches - example of primary key features



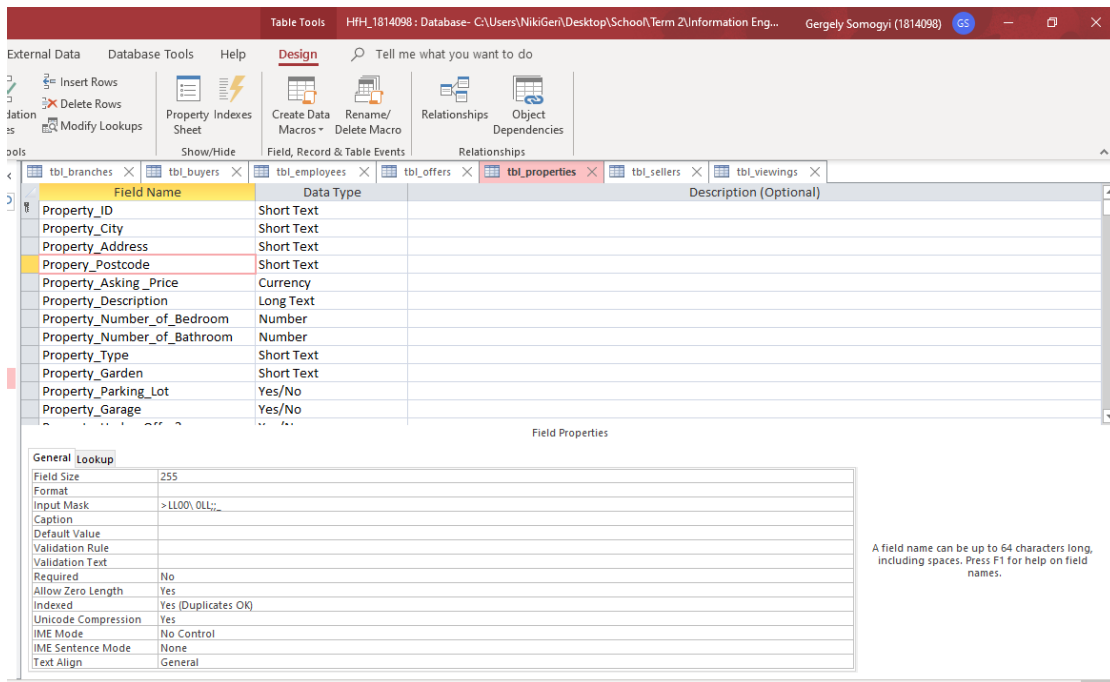
Screenshots #13 – tbl_buyers – example of phone number input mask



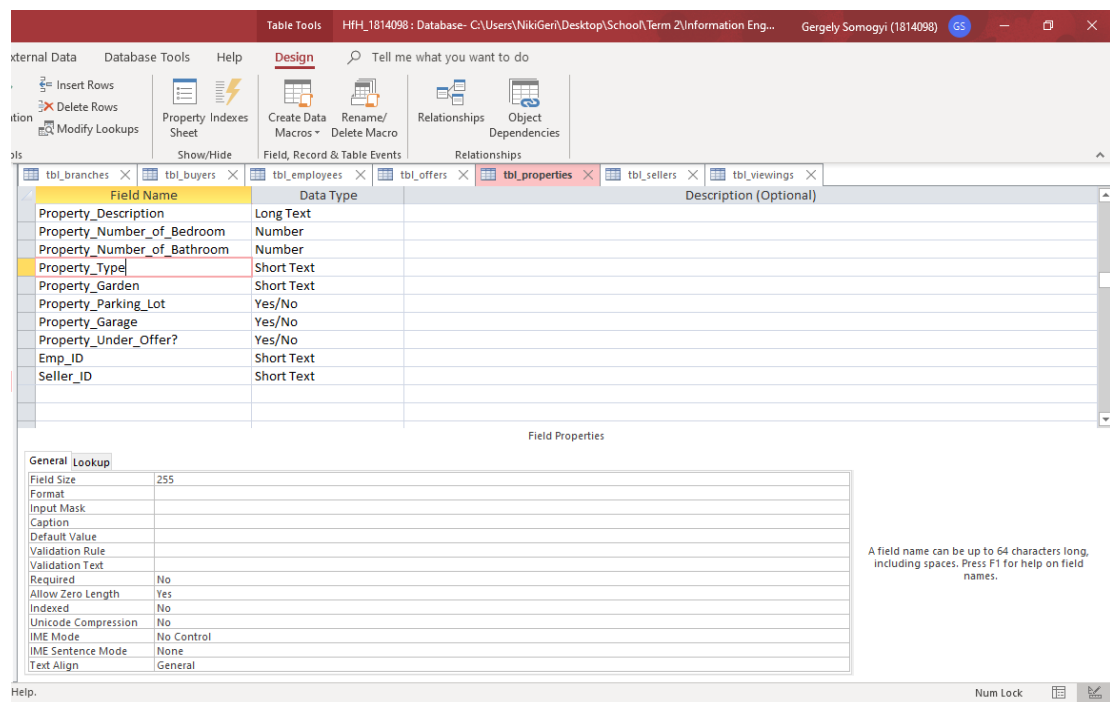
Screenshot #14 – tbl_employees



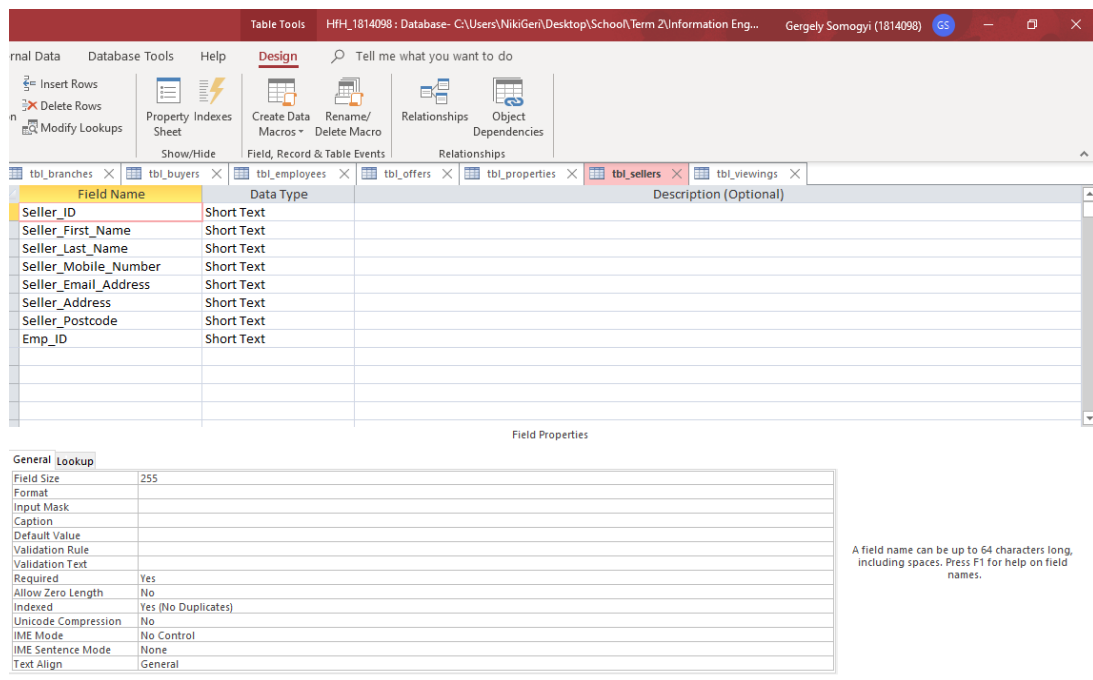
Screenshot #15 – tbl_offers – example of date input mask



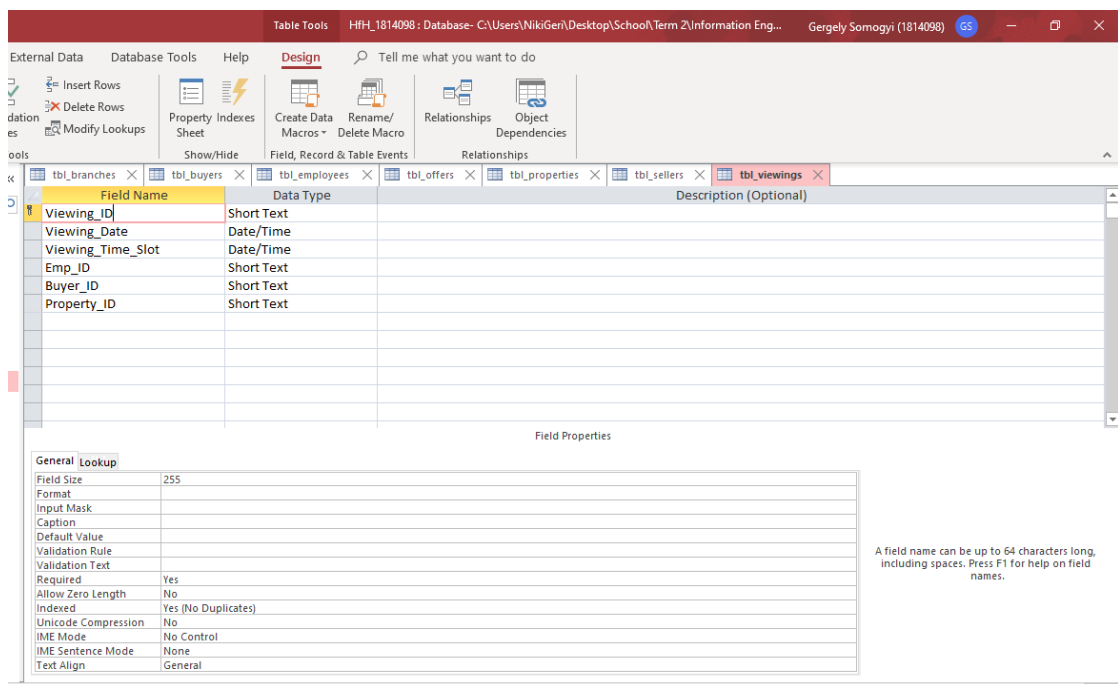
Screenshot #16 – tbl_properties (part1) – example of post code input mask



Screenshot #17 – tbl_properties (part2) – example of Yes/No data type



Screenshot #18 – tbl_sellers

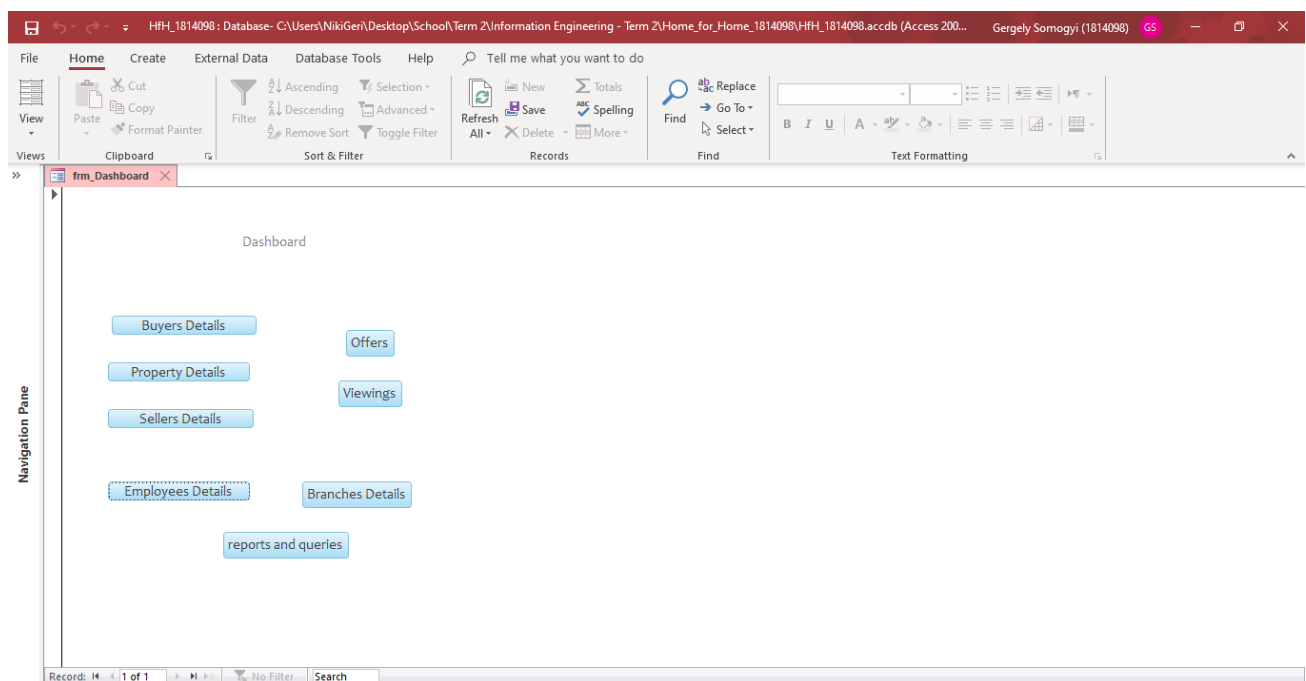


Screenshot #19 – tbl_viewing

Forms

The database contains 8 forms. Seven of them are for the tables to display and operate data. The eighth, called dashboard for reach the rest of forms.

The forms for tables are have buttons to operate data. Commonly involved button for view previous and next record and buttons for add, delete, save record also. The form for property has two more special buttons to find and print the record. It makes easier the work for colleagues.



Screenshot #20 – Dashboard, the page to start, by clicking one of the buttons the following forms will pop-up

Branches

Branch ID

Address

Postcode

Phone Number

Fax Number

Email Address

Previous Branch

Add Details

Save Details

Delete Details

Next Branch

Record: 1 of 1

Navigation Pane: Dashboard, Buyers Details, Property Details, Sellers Details, Employees Details, Branches Details

Screenshot #21 – form for Branches table

Buyers

Buyer ID

First Name

Last Name

Mobile Number

Email Address

Address

Postcode

Emp ID

Previous Buyer

Add Buyer

Save Buyer

Delete Buyer

Next Buyer

Record: 1 of 1

Navigation Pane: Dashboard, Buyers Details, Property Details, Sellers Details, Employees Details, Branches Details

Screenshot #22 – form for Buyers table

The screenshot displays the Microsoft Access application window. The title bar indicates the database is 'HfH_1814098.accdb'. The ribbon includes 'File', 'Home', 'Create', 'External Data', 'Database Tools', and 'Help'. The 'frm_employees' form is open, showing a form titled 'Employees'. The form has the following fields: Emp ID (dropdown), Username (text), First Name (text), Last Name (text), Mobile Number (text), Email Address (text), and Password (text). Below the fields are five buttons: 'Previous Employee', 'Add Employee', 'Save Employee', 'Delete Employee', and 'Next Employee'. The background shows a dashboard with buttons for 'Buyers Details', 'Property Details', 'Sellers Details', 'Employees Details', and 'Branches Details'. The status bar at the bottom shows 'Record: 1 of 1' and 'No Filter'.

Screenshot #23 – form for Employees table

The screenshot displays the Microsoft Access application window. The title bar indicates the database is 'HfH_1814098.accdb'. The ribbon includes 'File', 'Home', 'Create', 'External Data', 'Database Tools', and 'Help'. The 'frm_offers' form is open, showing a form titled 'Offers'. The form has the following fields: Offer ID (dropdown), Offered Initial Amount (text), Offered Final Amount (text with a currency symbol '£0.00'), Offer Date (text), Buyer ID (dropdown), and Property ID (dropdown). Below the fields are four buttons: 'Find Offer', 'Place Offer', 'Save Offer', and 'Delete Offer'. The background shows a dashboard with buttons for 'Buyers Details', 'Property Details', 'Sellers Details', 'Employees Details', and 'Branches Details'. The status bar at the bottom shows 'Record: 1 of 1' and 'No Filter'.

Screenshot #24 – Form for Offers table

Properties

Property ID: [Dropdown]
 Property City: [Text Box]
 Property Address: [Text Box]
 Property Postcode: [Text Box]
 Property Asking Price: [Text Box] £0
 Bedrooms: [Text Box]
 Bathrooms: [Text Box]
 Type: [Text Box]
 Garden: [Text Box]
 Parking Lot: [Checkbox]
 Garage: [Checkbox]

Property Description: [Text Area]

Under Offer? [Checkbox]
 Employee ID: [Dropdown]
 Seller ID: [Dropdown]

Print Record
Find Property

Previous Property Add property Save Property Delete Property Next Property Exit

Record: 1 of 1 No Filter Search

Screenshot #25 – Form for Properties table

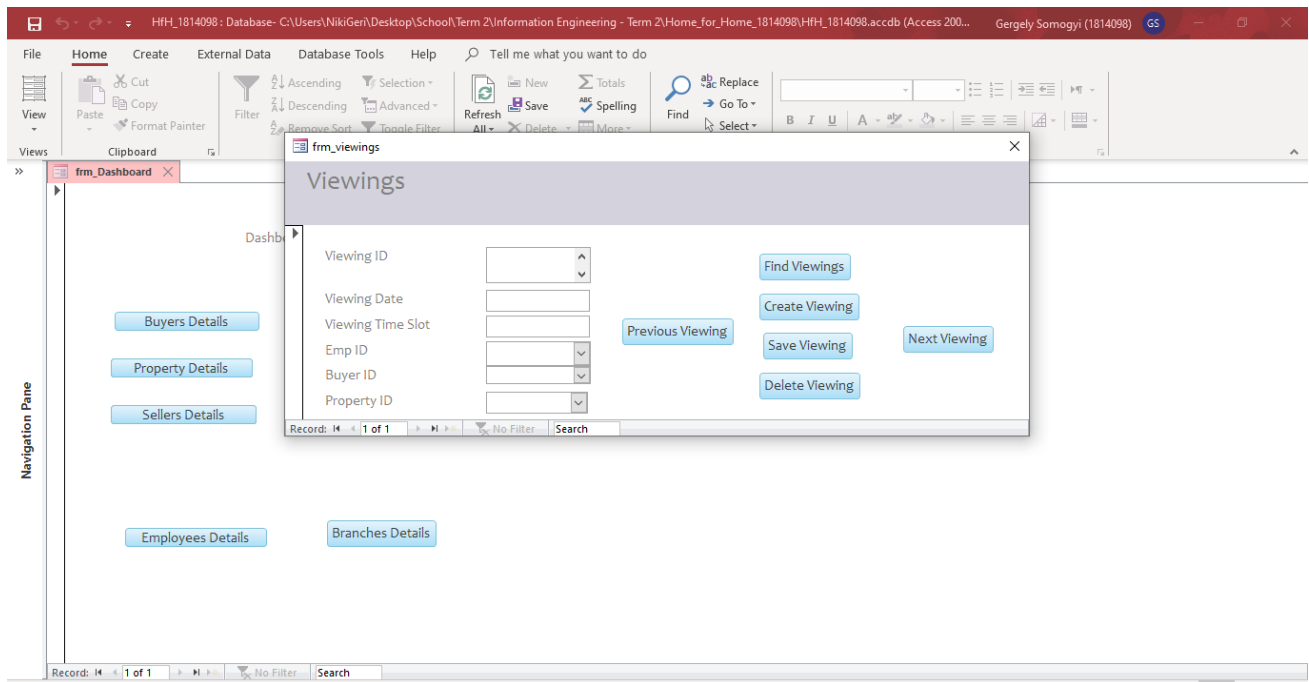
Sellers

Seller ID: [Dropdown]
 FirstName: [Text Box]
 Last Name: [Text Box]
 Mobile Number: [Text Box]
 Email Address: [Text Box]
 Address: [Text Box]
 Postcode: [Text Box]
 Emp ID: [Dropdown]

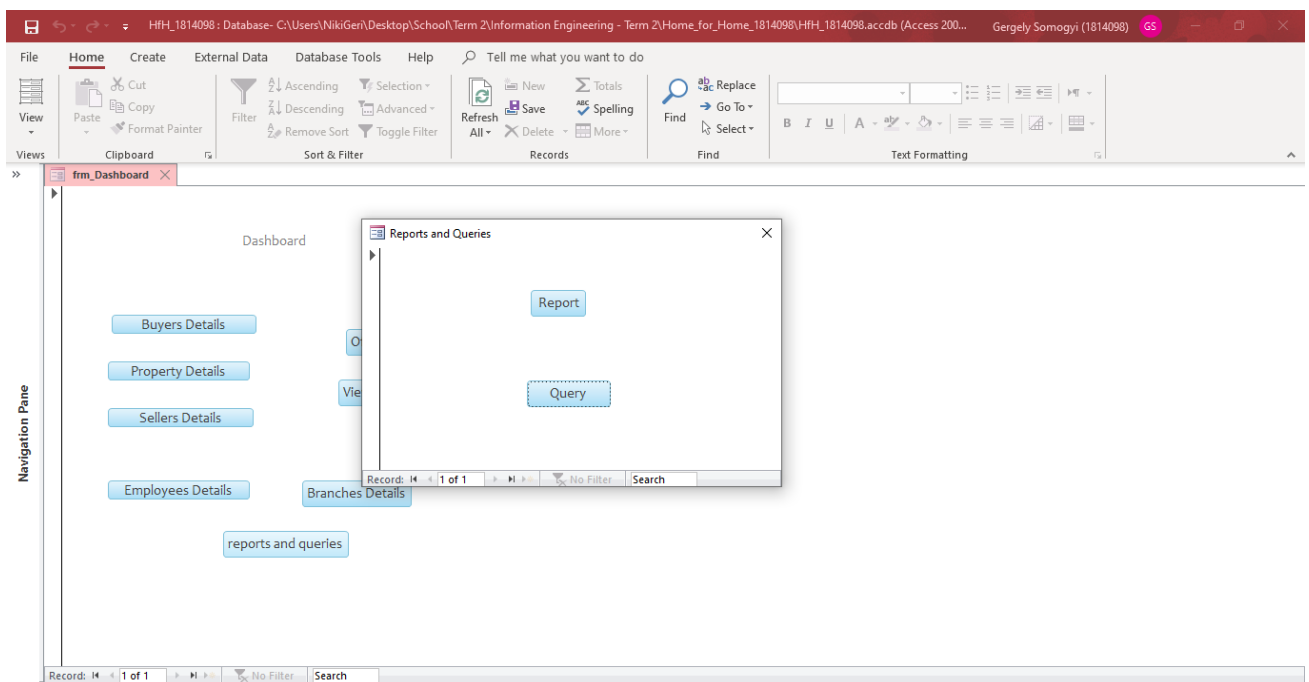
Previous Seller
Add Seller
Save Seller
Delete Seller
Next Seller

Record: 1 of 1 No Filter Search

Screenshot #26 – Form for Sellers table



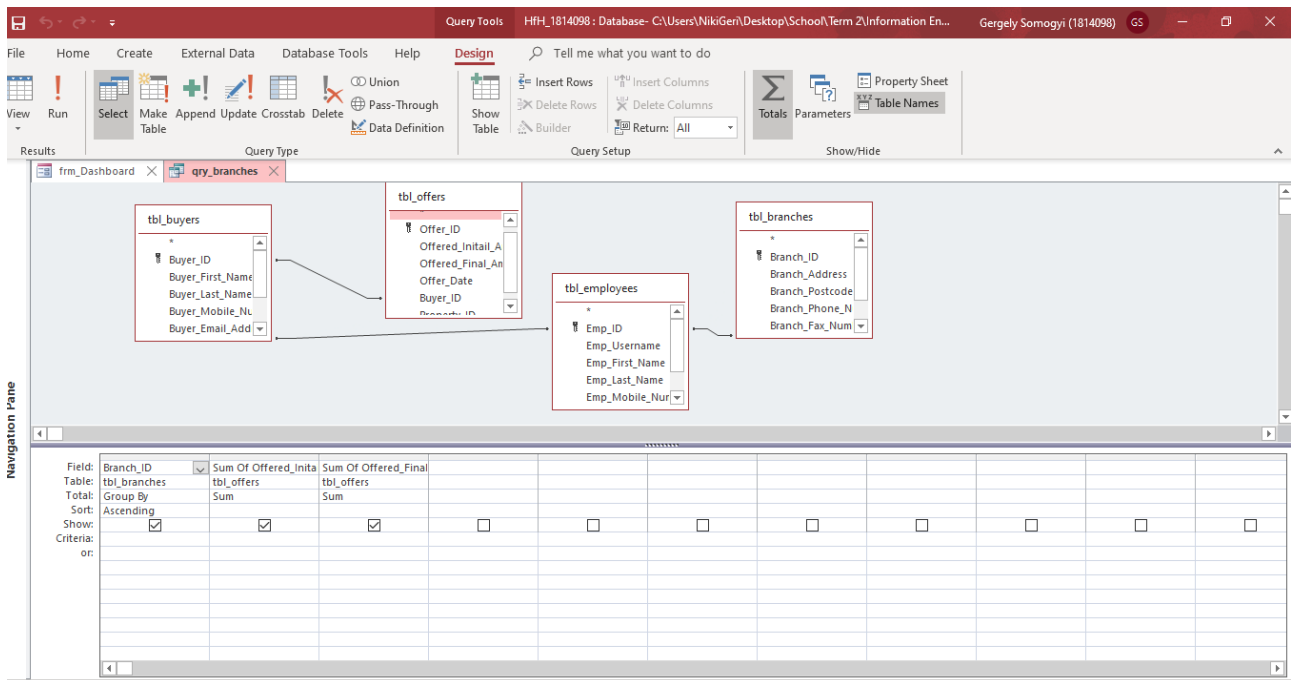
Screenshot #27 – Form for Viewings table



Screenshot #28 – Navigation form for reports and queries

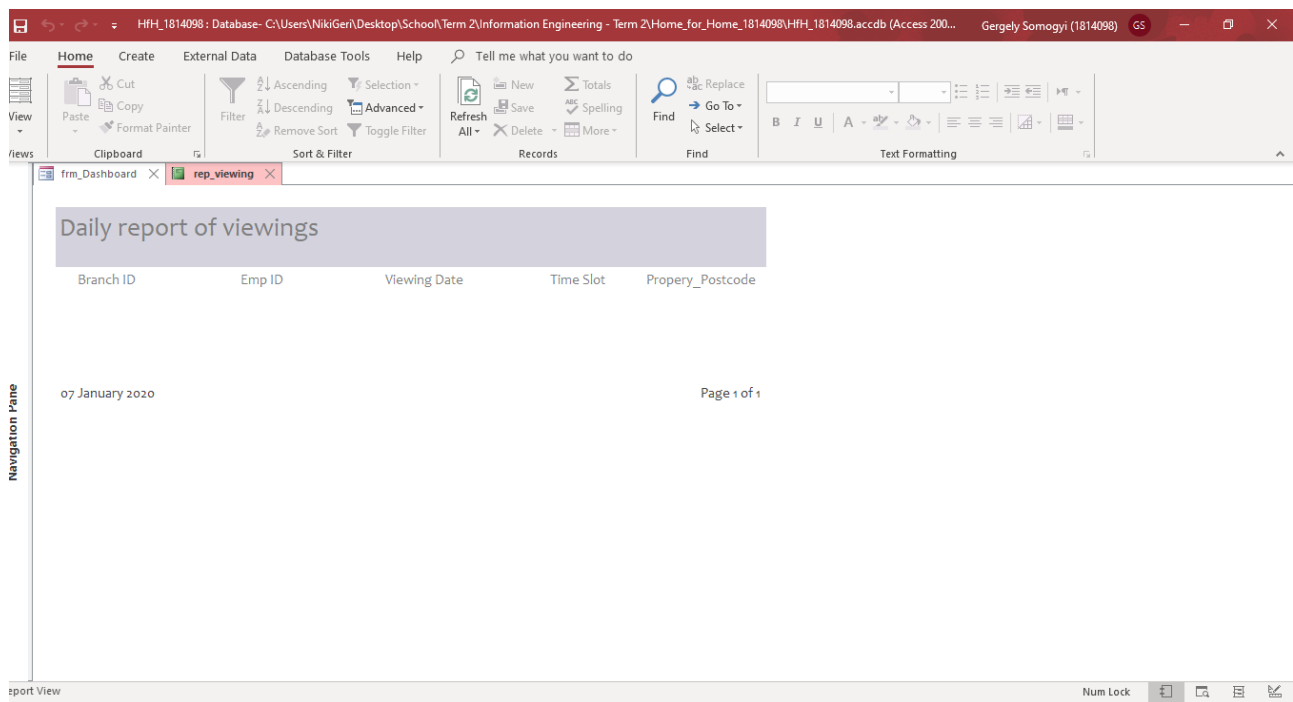
Reports and queries

I designated a query for summarize the given offer amount for a property, see at Screenshot #29.



Screenshot #29

I designated a report for displaying all viewings by branches, see at Screenshot #30.



Screenshot #30

User manual

As any user may read above, this database is very simple to use. The switchboard or home page is the Dashboard. From this page all elements of the database are reachable.

By, all the opened part is showing up in a pop-up window, user always would be sure where platform is active. The forms have all the buttons, what necessary to work with data. If user finished the work wit the form only task to close is click on `x` at right top corner of the window.

Conclusion

By the design I got more information about databases what I imagine. Sometimes I met problems, what I didn't expect. However, I tested the function with data, I upload the database without them.

This documentation was zipped with a MS Access files file, an MS Excel file and a StarUML file and submitted to Moodle. MS Access is my database, MS Excel contains the 3 Normalisation Form steps, StarUML contains the ER diagram.

References

https://www.tutorialspoint.com/ms_access/

<https://datatofish.com/ms-access-2016-tutorials/>