**ESTATE AGENT SYSTEM**

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# Introduction

This is a specification for a second year computing project based on an Estate Agent’s system. The project involves designing the interface and coding the functionality of the set of screens specified in this document. Details of the project time scale etc. are available from your tutor.

The Estate Agent’s system caters for the following:

* Bidding on property
* Buying property
* Inserting, viewing, updating and deleting client information
* Inserting, viewing, updating and deleting property details
* Producing useful reports about clients, properties and bids

The screens in this document are only used to demonstrate the required functionality. They are definitely not intended to suggest how the system should look. It is the task of the team to design a user interface that is as user-friendly as possible while still providing the required functionality.

It is the team’s responsibility to ensure that only valid data is keyed in and stored. Therefore appropriate prompts, warnings and error messages must be supplied by the system so that the user is made aware of the exact type of input that is required, its correct format etc.

On each data entry screen (any screen in which the user is asked to supply data), it must be possible for a user to change his/her mind about using the screen even after supplying data. Therefore, there must be some way of abandoning the screen without any changes being made to the stored data.

Once a user has finished entering data on a data entry screen, he/she must be asked to confirm that the details supplied are correct. If so, the relevant database tables are updated as appropriate. If not, the user is given the opportunity to edit fields on the screen.

In the case of Amend and Delete screens, a list box or a “Find” option should be used to provide fast access to the required record, rather than having to browse through a long list of records.

It is regarded as good programming practice to provide Help with all screens.

## Start-Up

The opening screen provides a welcome message and the main menu is displayed.

## Main Menu

All processing carried out by the system is ultimately achieved by moving through the menu structure (starting with the Main Menu) and eventually choosing the appropriate option either on the Main Menu or on one of its sub-menus.

**Main Menu**

Deal with Bids

Deal with Sales

Client Maintenance

Property Maintenance

Reports Menu

Exit

Choosing the Exit option closes the application

## Deal with Bids

Choosing the first option on the Main Menu leads to this screen, which handles all aspects of bidding for a property by a client.

**Deal with Bids**

Make a Bid

Withdraw a Bid

Quit

The Exit option returns the user to the Main Menu.

### Make a Bid

You may assume that the person (or company) wishing to make a bid on a property is already on your files as a client of the Estate Agents. If not, then the user must take the necessary details and enter them in the “Add a New Client” screen and then return to this screen.

You may, likewise assume that the property to be bid on is on the files of the Estate Agent. If not, the user must take the necessary details and enter them in the appropriate “Add a New Property” screen and then return to this screen.

Firstly, the user identifies the client that is bidding on the property. For example, the user might select the client by name from a list box of all client names. Further details of the client (e.g. address/eircode) should then be displayed in order to confirm that this is the required client. If the details are not correct, the user must be allowed to repeat the process of client identification.

Secondly, the user must identify the property. For example, the user might select the property by address/eircode from a list box of all the properties the Estate Agent has for sale. Further details of the property should then be displayed in order to confirm that this is the required property. The details that are displayed will depend on whether the property is Residential, Land or Office. If the details are not correct, the user must be allowed to repeat the process of property identification.

The existing highest bid, if any, should be displayed on the screen, and the user is given the opportunity to enter a new bid on the selected property on behalf of the selected client. If confirmed, the database tables are updated to reflect the bid.

### Withdraw a Bid

In the event that a client wishes to back out of a bid, the user needs to have the facility to delete a bid that was already made.

The user must identify the bid concerned to the system. The user should be able to select the bid by choosing a property type and then selecting the property from a list and the user should be able to select by entering an address/eircode. The user should then be able to scroll through a list box of all the bids that are **current** for that property. This list should include the client (bidder) name.

Further details of the bid (e.g. address/eircode of the bidder, date and amount of bid) should then be displayed in order to confirm that this is the required bid. This is necessary because it occasionally happens that there are two bids by clients of the same name for the property. If the details are not correct, the user must be allowed to repeat the process of bid identification.

Your system should not allow the withdrawal of a bid on a property where the sale is agreed or complete.

When the required bid is displayed, the user is given the option of deleting it. If deletion of the bid is confirmed, the database tables are updated to reflect the situation.

## Deal with Sales

Choosing the second option on the Main Menu leads to this screen, which handles all aspects of selling a property to a client.

**Deal with Sales**

Agree a Sale

Complete a Sale

Exit

The Exit option returns the user to the Main Menu

### Agree a Sale

Firstly, the user must identify the property. For example, the user might select the property by address/eircode from a list box of all the properties the Estate Agent has available for sale. Further details of the property should then be displayed in order to confirm that this is the required property. The details that are displayed will depend on whether the property is Residential, Land or Office. If the details are not correct, the user must be allowed to repeat the process of property identification.

Next, all the current bids for the chosen property are displayed and the user selects the winning bid from this list. **Note:** Any withdrawn bids should not be displayed.

The user must then enter the details of the sale, including:

* Date of agreement (default is today’s date)
* Proposed date of completion of sale
* Any specific conditions of the sale (e.g. removal of stones from the front lawn)

These details should be confirmed by the user, causing the database to be updated. In real life, a Sale Agreement document would be displayed, printed, and signed by both parties.

For purposes of project, it is only necessary to display the Sale Agreement document on screen.

### Complete a Sale

When a sale is fully completed (i.e. all legalities dealt with), the user should record its completion (to ensure that the property will no longer appear as “for sale” or “sale agreed”).

Firstly, the user must identify the property. For example, the user might select the property by address/eircode from a list box of all the properties the Estate Agent has sale agreements for. Further details of the property should then be displayed in order to confirm that this is the required property. If the details are not correct, the user must be allowed to repeat the process of property identification.

When the correct property has been identified, the sale details are displayed and the user gets the opportunity to enter the actual completion date (default is today’s date) and record other details like the buyer, price paid etc. When confirmed, the database tables are updated.

## Client Maintenance Menu

This is a menu with options that allow the user to insert a new client, delete an existing client and amend (or just view) an existing client’s details.

**Client Maintenance Menu**

Add a New Client

Delete a Client

Amend/View a Client

Exit

The Exit option returns the user to the Main Menu.

### Add a New Client

The user supplies the following details about a new client:

* Name
* Address (street, town and county)
* Eircode
* Phone number (home, work and mobile)
* Email address

When the user confirms that the details are correct, a unique client number is allocated and displayed on the screen, and a new record is added to the Client Table.

**Note:** A client is someone who either has a property for sale or someone who wants to buy property. A client may be a person or a company.

### Delete a Client

Firstly, the user identifies the appropriate client. This may be done by selecting the client from a list box of all clients.

Further details are now displayed:

* Client number
* Name
* Address (street, town and county)
* Eircode
* Phone number (home, work and mobile)
* Email address

Once the correct client has been found, the user presses the ‘Delete’ button. You should alert the user if the client has a current bid on a property or has a property for sale. If so, the client cannot be deleted without also deleting any associated current bids and properties for sale.

You should include some kind of double check such as:

‘Are you sure you want to delete this client (Y/N)?’

Once the user responds positively, the appropriate client is flagged as ‘deleted’ in the Client Table, his current bids are deleted, his properties for sale are deleted and a message is displayed confirming that the deletions have taken place.

### Amend/View a Client

Firstly, the user identifies the appropriate client. This may be done by selecting the client from a list box of all clients.

Further details are then displayed:

* Client number
* Name
* Address (street, town and county)
* Eircode
* Phone number (home, work and mobile)
* Email address

If the user decides to alter some details, he / she must choose the Amend option. A cursor now appears and the user may commence editing. The only field that cannot be changed is the Client number field.

Having made all the changes, the user must indicate that the changes are to be saved. A standard double check (e.g. ‘Are you sure (Y/N)’?) should be implemented by your system. Once confirmation is received, the Client Table is updated.

## Property Maintenance Menu

This is a menu with options that allow the user to insert a new property (Residential, Land or Office), delete an existing property and amend (or just view) an existing property’s details.

**Property Maintenance Menu**

Add a New Residential Property

Delete a Residential Property

Amend/View a Residential Property

Add a New Land Property

Delete a Land Property

Amend/View a Land Property

Add a New Office Property

Delete an Office Property

Amend/View an Office Property

Exit

The Exit option returns the user to the Main Menu.

### Add a New Residential Property

Firstly, the client wishing to put a new residential property up for sale must be identified. This is done in the usual manner, by selecting the client from a list box of all clients.

The following details are now entered:

* Type of property (selected from semi detached, terraced, detached, apartment, mews)
* Address (street, town and county)
* Eircode
* Location (2 miles south of Carlow on N9, turn left at cross-roads, next bungalow on right)
* Number of levels
* Number of reception rooms
* Number of bedrooms
* Number of bathrooms
* Area of house
* Heating (selected from OFCH, GFCH, SFCH, ECH, other, none)
* Site (size, gardens, driveway, etc)
* Notes (e.g. exceptional condition, beautiful view, landscaped gardens)
* Asking price
* Viewing times (e.g. by appointment, 9-11 Monday to Friday)

When the user confirms that the details are correct, a unique property number is allocated and displayed on screen, and a new record is added to the appropriate table.

### Delete a Residential Property

An Estate Agent may decide to delete a property from his files if, for example, the owner has taken if off the market or has gone to a different Estate Agent. Properties already sold cannot be deleted.

Firstly, the user identifies the appropriate property. This may be done by selecting it (by its address/eircode) from a list box of all residential properties. Details of the property (e.g. type of property, number of bedrooms, number of reception rooms, etc.) should then be displayed for confirmation purposes.

Once the correct property has been found, the user is made aware of the status of the property, whether it is for sale, sale agreed or sale completed. The user can then press the “Delete” button. If there is a bid on the property, this should now be displayed to the user via a message. If deletion goes ahead, all associated bids will also be marked as deleted.

You should include some kind of a double check such as:

‘Are you sure you want to delete this property (Y/N)?’

Once the user responds positively, the ‘Deleted’ flag(s) is set in the database table(s) and a message is displayed confirming that the residential property and all associated bids have been deleted. The relevant database tables must be updated to reflect this.

### Amend/View a Residential Property

The user identifies the appropriate property. This may be done by selecting it (by its address/eircode) from a list box of all residential properties. The user should have the option of choosing to list all sold or unsold properties.

The details now displayed are as follows:

* Type of property
* Address (street, town and county)
* Eircode
* Location
* Number of levels
* Number of reception rooms
* Number of bedrooms
* Number of bathrooms
* Area
* Heating
* Site
* Notes
* Asking price
* Viewing times
* Client’s (i.e. owner’s) name
* Highest bid
* Status (“for sale”, “sale agreed”, “sale completed”)

If the user decides to alter some details, he / she must choose the Amend option. A cursor now appears in the first field shown for the property and the user may commence editing.

Having made all the changes, the user must indicate that the changes are to be saved. A standard double check (e.g. ‘Are you sure (Y/N)’?) should be implemented by your system. Once confirmation is received, the appropriate table is updated.

Note: that the ‘highest bid’ and ‘status’ fields cannot be altered here.

### Add a New Land Property

Firstly, the client wishing to put a new land property up for sale must be identified. This is done in the usual manner, by selecting the client from a list box of all clients.

The following details are now entered:

* Address (3 lines)
* Eircode
* Location (e.g. 2 miles south of Carlow on N9, turn left at cross-roads, next entrance on right).
* Number of acres
* Buildings and out-offices
* Residence details (e.g. no residence, 4 bedroom period residence in need of repair)
* Quotas
* Notes (e.g. exceptional condition, beautiful view, 2020 Farm of the Year, some good machinery included)
* Asking price
* Viewing times

When the user confirms that the details are correct, a unique property number is allocated and displayed on the screen, and a new record is added to the appropriate table.

### Delete a Land Property

An Estate Agent may decide to delete a property from his files if, for example, the owner has taken if off the market or has gone to a different Estate Agent.

Firstly, the user identifies the appropriate property. This may be done by selecting it (by its address/eircode) from a list box of all land properties.

Details of the property (e.g. number of acres, residence details, quotas, etc.) should then be displayed for confirmation purposes.

Once the correct property has been found, the user is made aware of the status of the property, whether it is for sale, sale agreed or sale completed. The user can then press the “Delete” button. If there is a bid on the property, this should now be flagged to the user via a message. If deletion goes ahead, all associated bids will also be marked as deleted.

You should include some kind of a double check such as:

‘Are you sure you want to delete this property (Y/N)?’

Once the user responds positively, the ‘Deleted’ flag(s) is set in the database table(s) and a message is displayed confirming that the land property and all associated bids have been deleted. The relevant database tables must be updated to reflect this.

### Amend/View a Land Property

The user identifies the appropriate property. This may be done by selecting it (by its address/eircode) from a list box of all land properties. The user should have the option of choosing to list all sold or unsold properties.

The details now displayed are as follows:

* Address (3 lines), Eircode
* Location
* Number of acres
* Buildings and out-offices
* Residence details
* Quotas
* Notes
* Price
* Viewing times
* Client’s (i.e. owner’s) name
* Highest Bid
* Status

If the user decides to alter some details, he / she must choose the Amend option. A cursor now appears in the first field shown for the property and the user may commence editing.

Having made all the changes, the user must indicate that the changes are to be saved. A standard double check (e.g. ‘Are you sure (Y/N)’?) should be implemented by your system. Once confirmation is received, the appropriate table is updated.

Note: that the ‘highest bid’ and ‘status’ fields cannot be altered here.

### Add a New Office Property

Firstly, the client wishing to put a new office property up for sale must be identified. This is done in the usual manner, by selecting the client from a list box of all clients.

The following details are now entered:

* Address (3 lines)
* Eircode
* Location (Block D, Rear Wing).
* Floor (e.g. 7th floor)
* Area (square metres)
* Layout (e.g. large open area, 2 adjoining small rooms, storage area, toilets, etc.)
* Internet (e.g. wireless)
* Access (e.g. ramps, elevators)
* Telephone system
* Reception facilities (e.g. one receptionist always on duty)
* Type of security (e.g. Netwatch, security patrols, etc.)
* Canteen facilities (location and type e.g. large open-access canteen on top floor serving full lunches)
* Type of ownership (freehold or long lease)
* Asking price
* Viewing times

When the user confirms that the details are correct, a unique property number is allocated and displayed on the screen, and a new record is added to the appropriate table(s).

### Delete an Office Property

An Estate Agent may decide to delete a property from his files if, for example, the owner has taken if off the market or has gone to a different Estate Agent.

Firstly, the user identifies the appropriate property. This may be done by selecting it (by its address/eircode) from a list box of all office properties.

Details of the property (e.g. address, ,Eircode,location, floor etc.) should then be displayed for confirmation purposes.

Once the correct property has been found, the user is made aware of the status of the property, whether it is for sale, sale agreed or sale completed. The user can then press the “Delete” button. If there is a bid on the property, this should now be flagged to the user via a message. If deletion goes ahead, all associated bids will also be marked as deleted.

You should include some kind of a double check such as:

‘Are you sure you want to delete this property (Y/N)?’

Once the user responds positively, the ‘Deleted’ flag(s) is set in the database table(s) and a message is displayed confirming that the office property and all associated bids have been deleted. The relevant database tables must be updated to reflect this.

### Amend/View an Office Property

The user identifies the appropriate property. This may be done by selecting it (by its address/Eircode) from a list box of all office properties. The user should have the option of choosing to list all sold or unsold properties.

The details now displayed are as follows:

* Address (3 lines), Eircode
* Location
* Floor
* Area
* Layout
* Internet
* Access
* Telephone system
* Reception facilities
* Type of security
* Canteen facilities
* Type of ownership
* Asking price
* Viewing times
* Residence details
* Highest bid
* Status

If the user decides to alter some details, he / she must choose the Amend option. A cursor now appears in the first field shown for the property and the user may commence editing.

Having made all the changes, the user must indicate that the changes are to be saved. A standard double check (e.g. ‘Are you sure (Y/N)’?) should be implemented by your system. Once confirmation is received, the appropriate table is updated.

Note: that the ‘highest bid’ and ‘status’ fields cannot be altered here.

## Reports Menu

This is a menu that allows the user to generate simple on-screen reports.

**Reports Menu**

Residential Property Report

Land Property Report

Office Property Report

Bid Report Client Report

Individual Client Report

Exit

The Exit option returns the user to the Main Menu.

### Residential Property Report

This is a screen listing of all residential properties that are currently for sale or sale-agreed. It shows the following details:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Property Number** | **Address** | **Type of property** | **Num. of Bedrooms** | **Num. of Receptions** | **Status** | **Highest Bid** | **Asking Price** |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

The detail lines in this report may be presented in the following order:

* Properties displayed in ascending order of asking price (default).
* Properties displayed in order of number of bedrooms. Properties with the same number of bedrooms should be displayed in order of asking price.

The order of information may be altered by means of two buttons:

* Asking Price button (initially disabled)
* Bedrooms button

Depending on how the information is currently presented, the corresponding button will be disabled. There will always be one enabled button and one disabled one.

There should be a **Client Information** button on this screen. To use this button, a property is first selected. Clicking on the Client Information button then causes a window to appear showing details of the client who owns this property.

### Land Property Report

This is a screen listing of all land properties that are currently for sale or sale-agreed. It shows the following details:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Property Number** | **Address** | **No. of Acres** | **Quotas** | **Residence Details** | **Status** | **Highest Bid** | **Asking Price** |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

The detail lines in this report may be presented in the following order:

* Properties displayed in ascending order of asking price (default).
* Properties displayed in ascending order of acreage.

The order of information may be altered by means of two buttons:

* Asking Price button (initially disabled)
* Acreage button

Depending on how the information is currently presented, the corresponding button will be disabled. There will always be one enabled button and one disabled one.

There should be a **Client Information** button on this screen. To use this button, a property is first selected. Clicking on the Client Information button then causes a window to appear showing details of the client who owes this property.

### Office Property Report

This is a screen listing of all office properties that are currently for sale or sale-agreed. It shows the following details:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Property Number** | **Address** | **Area** | **Security** | **Freehold / Long Lease** | **Status** | **Highest Bid** | **Asking Price** |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

The detail lines in this report may be presented in the following order:

* Properties displayed in ascending order of asking price (default).
* Properties displayed in ascending order of area.

The order of information may be altered by means of two buttons:

* Asking Price button (initially disabled)
* Area button

Depending on how the information is currently presented, the corresponding button will be disabled. There will always be one enabled button and one disabled one.

There should be a **Client Information** button on this screen. To use this button, a property is first selected. Clicking on the Client Information button then causes a window to appear showing details of the client who owes this property.

### Bid Report

The user first chooses the property type – residential, land, or office. This report then gives a screen listing of all the bids so far in reverse date order (i.e. latest bid first) for each property of the chosen type that is currently for sale. It shows the following details:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Property Number** | **Address** | **Client Number** | **Client Name** | **Amount of bid** | **Date of bid** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

There should be a **Client Information** button on this screen. To use this button, a bid is first selected. Clicking on the Client Information button then causes a window to appear showing further details on the Client.

### Client Report

This is a screen listing of all the Clients that are on the Estate Agent’s files. It shows the following details:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Client Number** | **Client Name** | **Address** | **Phone Number (M)** | **Phone Number (W)** | **Current Bids (Y/N)** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

The user should be able to choose to present the report in order of Client Name (default) or Client Number. The user should also be able to choose to display the information in ascending or descending order.

There should be a **Bid Information** button on this screen. To use this button, a client is first selected. Clicking on the Bid Information button then causes a window to appear showing details of all properties the client has current bids on.

### Individual Client Report

The user firstly selects the client. The client's address/eircode details are then displayed unto the screen, for confirmation purposes.

The following details are displayed:

* client name
* address
* eircode

If more than one client has the same name the user should be able to choose the appropriate client.

The report should list all the properties that the client has currently for sale or sale-agreed. The user should be able to choose which type of property to display. They may want to display one or more types of properties - land, office and residential property. It should list only the highest bid on each property. You should make sure that the highest bid is a valid bid, not one which is withdrawn or deleted. If there is no bid on the property then this field should be empty.

A report similar to the following should be displayed:

**Individual Client Report**

***Client Name Address Line 1***

***Address Line 2***

***Address Line 3***

***Address Line 4***

**Property Details**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Property Number** | **Property Address** | **Status** | **Highest Bid** | **Date of Bid** | **Asking Price** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

There should be a **Bid Information** button on this screen. To use this button, a property is first selected. Clicking on the Bid Information button then causes a window to appear showing the details of the client who has placed the bid on that property.

### Sales Report

This report should show a list of all completed sales of properties. The user should be able to choose which type of property to display. They may want to display one or more types of properties - land, office and residential property.

This report then gives a screen listing of all the completed sales so far in reverse date order (i.e. latest sale first) for each property of the chosen type. It shows the following details:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Property Number** | **Address** | **Name of Owner of Property** | **Name of Buyer of Property** | **Date of Completion of Sale** | **Selling Price** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

The order of information may be altered by means of two buttons:

* Date of Completion button (initially disabled)
* Property number

Depending on how the information is currently presented, the corresponding button will be disabled. There will always be one enabled button and one disabled one.