GCSE COURSEWORK

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Introduction

The aim for this coursework is to design a new system for an estate agent called Mr Hall, who currently is the manager at Central Estate Agents. The database will be designed to hold information about the properties such as number of bedrooms, garden size, price etc. Currently the company is using a filing cabinet to keep the current data, this takes up a lot of space and it is hard for the workers to access or amend the information.

The company currently files all the information about the houses that are for sale or rent. They are all organised by the area that they are in. If any customer inquires about buying a house but doesn't specify the requirements are but sets other criteria then all the files have to be studied to find a house meeting the criteria set. If information about the area is given then it is a bit easier because only houses in that area have to be searched. Searching for the right houses can take hours because a lot of files have to be searched. House prices are constantly changing and it isn't possible for the company to manually change the prices for each house. When inquires for a house which has to be between a certain price range is made, many houses cannot be made available because the current price hasn't been updated and the latest price may be out of range. The company is losing a lot of business because it takes a long time to find the right properties for the buyers; the company also needs to employ many extra staff because excessive manual work is required.

I will need to design a solution for this problem, my system has to be fast and easy to use, and the information should be clear and easy to change. I will need to find out how the workers are currently using their system and I will need to see if the new one will be easier and faster. The filing cabinet is in a suitable alphabetical order and is well organised, but the time taken for my client to search for a particular house takes time and however wastes his work time as well

ADVANTAGES OF A COMPUTER - BASED SYSTEM:

- Computers are very accurate.
- Computers can work continuously 24 hours a day.
- Less paperwork involved, it is all stored and easily accessible from the computer.
- Low risk of data being erased as it can be stored on various backups.
- Not a lot of energy is needed to get data; this saves time and is efficient.
- Data can easily be presented in tables, graphs etc.
- Changes and corrections can be performed at the touch of a button.
- Validation check minimises the chance of any errors.

DISADVANTEGES OF A COMPUTER – BASED SYSTEM:

- The hardware and software can be very expensive.
- Employees will need to be trained regarding usage of the computer.
- If the computer crashes or there is a power cut, access to data in the computer is lost.
- The data may be changed by purpose reasons
- You cannot back-up the data which has been lost
- The computer may have a power cut which causes the lost of data
- The data can be recycled very easily.

The Client And The Problem

My client Mr Chris Hall is an Estate Agent manager. As part of his job he is required to organise his filing work. He wishes to place a suitable solution to help him to organise his work alphabetically therefore he is able to use the filing cabinet to put the files and papers, and very important documents inside it to keep everything secure and tidy.

The major problems, which Mr Hall is facing, is the fact that it is difficult to retriever information when required, and to update the information of clients.
This can also cause problems to the estate agent because if he hasn't got a computer he may need to buy one or there could be a power cut, which means he couldn't work. So he could keep the filing cabinet in emergencies but in specially chosen categories e.g. Walthamstow then put them in order of price with the cheapest on the top of that category. He can still use the computer to type the house review and maybe add a picture of the house.

These are the problems that Mr Hall has been experiencing for the past two years of his job:

1. Takes up lot of space in the filing cabinet.
2. Searching for records takes too much space.
3. The data that he has filled may get lost or misplaced.
4. Only one person at a time is able access the data.
5. Reports can be written – but only after looking at each relevant record and transferring Information by hand.

This can also cause problems to the estate agent because if he hasn't got a computer he may need to buy one or there could be a power cut, which means he couldn't work. So he could keep the filing cabinet in emergencies but in specially chosen categories e.g. Walthamstow then put them in order of price with the cheapest on the top of those categories. He can still use the computer to type the house review and maybe add a picture of the house that he intends to sell.

The client wants a working solution to solve his problem of filing his important documents into a clean resource this will b where all his important documents will be placed in a safe place, therefore no unauthorised access is available to documentations.

Mr Hall has tested various solutions, but is unable to find a suitable answer to his problem. It has been recommended to Mr Hall a week ago that it would be helpful if all the all your files were sorted into an alphabetical order, as a short term solution this would prevent the files easy to find and there will be less chances of him misplacing them.

The Solution

An ACCESS database system has been recommended for the client to solve his problems. Mr Hall can convert his paper files to electronic information; therefore he can place the information of various properties on the system. In this particular Database it is designed for an Estate agents office.
These are 9 most important key fields of this data are below.
By using a computer you can caricaturise the houses / flats by: -

1. **Price**
2. **Number of bedrooms**
3. **The floors**
4. **A spacious garden**
5. **Attic**
6. **Beautiful garden**
7. **Central heating**
8. **Basement**
9. **Garage**

ADVANTAGES Of Database System

1. This will take up less physical space then a filing cabinet, which the estate agent has at the moment. Mr Hall has only one computer; he and the other colleges have access to look up the details of what houses are sold or on rent using the computers in the office. Numerous colleagues will be able to look up of what houses are available for sale or on rent.
2. Easy to retrieve instantly information.
3. Easy to update records.
4. Less time consuming.
5. Carry out searches for particular information.
6. View information clearly.
7. Auto sorted.
8. Easy to recognize certain information clearly.
9. The data stays within the computers memory- and it won't get lost or misfiled.
10. All presented on one document.

DISADVANTAGES Of Database System
1. There may be viruses, power failures, and computer disruptions.
2. The network manager of the computer backs up all the data on the office network regularly so the housing catalogue will be automatically backed up at the same time.
3. There may be total loss of data if the computers are stolen or virus destroys all the data.
4. Computer training may be needed for staff.

By using the database system the estate agent and his colleges will be able to search houses that are for sale, rent, sold. A computer database system will be much more efficient then a traditional method. Access database will be a great improvement on his grey filing cabinet and will solve all his future problems and accidents that he will/ or not make in the future.

PLAN

1. **Make a list of all the things the spreadsheet will be used for.**
2. **Design the database**
3. **Make a small database.**
4. **Checking the database**
5. **Testing the database**
6. **Make improvements.**
7. **Evaluation**

1. List all the things the database will be used for:

- School surveys
- Business surveys
- Advertising properties
- Personal reasons
- Calculating data from proportions
- The police have details of all criminals in a database.
- A hospital will store details of all its patients.
- Your school will probably use a database to store details of its pupils.

2. The field's types that I will be required are:

	Name of Field	Type of Field	Description of Field
1	Reference	Number	Reference code of house
2	Price	Number	How much the house is worth
3	Bedroom	Number	The number of bedrooms
4	Reception	Number	The number of receptions
5	Garage	Text	Is there a garage included
6	Garden	Text	Is there a garden
7	Area	Text	Where the house is situated
8	Address	Text	Where the house is located

After starting to make the database with these fields I have decided that the GARAGE, GARDEN was not useful. It would no be useful because it will be ticked in a square, and it will cause problems for the client that will be typing up my database. So therefore I am left with 6 fields to help my client to search for particular house. This will help my client to search for a houses status and to find out if it is legible to be sold or not.

3. Make a small database

I have made a Microsoft ACCESS database to create a suitable database different houses that are for sale or on rent or on let. I have also created a sample of 10 of the houses that were on that database it self and able to find out how would it turn out in the end:

Reference	Price	Bedrooms	Reception	Garage	Garden	Area	Address
1	£173,995.00	3	0	Yes	Yes	Epping Green	58
2	£189,995.00	3	0	Yes	No	Chigwell Row	2
3	£1,799,950.00	1	0	Yes	Yes	Loughton	5A
4	£8,500,000.00	7	3	Yes	No	Essex	21
5	£5,500,000.00	4	2	Yes	Yes	Loughton	32
6	£3,950,000.00	4	0	Yes	No	Burkhurst	56
7	£6,250,000.00	5	5	Yes	Yes	Housham Tye	57
8	£4,499,950.00	4	2	Yes	No	South Woodford	13
9	£464,995.00	4	3	No	No	Woodford green	99
10	£395,000.00	4	2	No	Yes	Russel Road	100

4. Checking the database

VALIDATION: As I entered the data, ACCESS checked the validity of entries, and stopped me from entry text in the fields that had to be numbers etc.

Range check- is performed on numbers to make sure that they lie within a specified range. An example is a validation rule for House numbers which can be defined as being less than 1000 as nearly all houses have a number which is less than 1000.

Check digits – when I was working with large numbers mistakes can easily be made therefore, at the end of a long number a check on the digits is made.

Hash total – I have this method used to check invoices. It is a meaningless total, but if it does not appear it means that not all the numbers/items on the invoice have been keyed in or a mistake has been made.

Control total - is the same as hash total but with meaning.

Character-type check - makes sure that I have correct types of characters have been entered. For example, if text is inserted for house number then the computer will inform the user and not let him carry on until the mistake has been corrected.

Spell Check - This check will make sure that the words have been spelt correctly and the grammar is also right. Suggestions will be given if the words aren't right.

Length check - This will inform me I have more or less characters than previously specified have been inserted onto the system.

Validation is cheap and very quick because the computer does it, but it does not guarantee to find all errors. This will minimise errors and therefore is effective. All the mistakes will not be corrected because the computer only does what it has been told to look out for that is why a lot of validations should be used to completely minimise the number of mistakes made.

VERIFICATION: I double-checked all the houses that are for sale and the correct price for it, and spell checked the addresses.
Proof reading - the user reads the information again and compares the form and what has been entered onto the system.
Re-typing - After the user has typed in the information another member of staff should come and type in the information, the data will only be processed if both entries are identical. It is unlikely that both people will make the same mistakes. The Re-typing method is expensive and time consuming but proof reading will be effective and easy to put into practice.
Code Data - Data is often put into a code in a database, for example in the file above Y is used for yes and N for no. Codes like this are used because:

- It is quicker to type in
- It uses less disk space
- It is easy to validate

5. Testing the database

I could test the database by searching for a particular house by inserting the area in the search box, and then the computer finds the results that matched my area name.
I showed it to my teacher how to use this database and he thought that it was really good idea of presenting a table of contents on one documents, and if he got the spelling wrong then the database did not find the house that he wanted.

6. Improvements

If I could improve my database system, I could have added an extra field, which could show a picture of the house because then the buyer then can see the house from the outside and how it will look from a far distance. The extra field for the advertising the picture would be helpful because this would give a view on what the outlook would look like

Evaluation

The criteria that I have used to evaluate my database are these specific questions:

a) Does the database do the things the he wanted to do?
b) Is it better/easier to use then the previous set-up?
c) Does the estate agent agreed on the fact the he will keep the idea of my solution?
d) Will he be able to use it?
e) Are they any improvements, which could be made?

Does the database do things that he wanted it to do?

The things that my client wanted were:

- To search for houses of different areas which were located
- To keep records of the houses that is for sale, rent or sold.
- To keep records of the houses that are ready for sale, rent, or selling

The database I have designed can be used for the first four items. I have tested these it is easy to do these things much faster then with an old fashioned filling cabinet or by looking at certain houses in a hole-punched file. The ACCESS database is also impossible to mess up or to leave it untidy at all times. Clients in the office would probably mess up the filing cabinet by any chance.
The database shows whether a house in sold, on rent, or is on sale, but the database would be need to be updated all the time to keep the information up to date. This could be done each week by changing the entries of the houses that are for sale, on rent, or sold.

Is this better/easier then the previous set-up you had in the past?

I personally think that it is much easier to use then the old filling cabinet because then it saves my time of flicking through those paper files and actually finding one is a bit hard to me. My assistant (Omar Tahir) who tried found it easy too. I am sure it will be much easier to find the details of houses in a filing cabinet. A computer database is also impossible to mess-up or to leave it un-tidy. The computerised system would benefit my client because it would suit his work because the estate company would have a negotiable data that can be changed and filed nicely.

Does the client like it? Will he be able to use it?

Yes, my client likes it better then the old filing cabinet. He will be able to use the database will out any problems whatsoever. My client's dream came true because he wanted a right solution, so I prepared an exact solution to help him in the future. Mr Hall will be able to use my new computer system because he is a professional, skilled, and talented on the computer system, he will be able to ignore any false errors and mistakes which he will create during his data inputting.

Are there any improvements that could be made?

If I had a chance to recreate this database, I would choose a relational database, which could be used to sell, on rent, and to buy and to keep track of the houses that are due for business I the future. I have chosen a relational database because:

- They store data in separate files and tables
- All the data is linked together by key fields and a database management system (DBMS)
- The DBMS also control who can access what.
- Relational databases are used in large organisations.

Interview with Mr Hall

I have designed this interview to help me of what requirements are needed for my client, for me to design my new computer – based system shortly. I have taken time to ask my client very important questions which will help me to structure my solution effectively. At the end of this interview, I would have collected various information and notes that will help me to create the ideal solution.

1. How long have you had your own business for?

Along with my brothers I have been running this business for 18 years now. I am very proud of this job, so I would like to change the context of it. Although I have worked here for 18 years, I need to make a change of my manual system to my new computer system.

2. What does your business involve?

We collect information of properties that are for sale and when enquiries are made for properties, we search for the properties satisfying the criteria set. We also have a working organisation partnership around the area which is situated in Walthamstow, London.

3. How do you keep a record of the properties, and how do you change the information?

All the information is written on paper and is put into cabinets or if the filing cabinets are full up, we then use the card index box, which tells us the main points of the houses or flats. The filing cabinets are sorted according to different areas, if any information needs to be changed then one of the staff will have to do it manually.

4. What do you do when you receive an inquiry for properties?

This depends on whether the area has been specified by the customer, if it has then we find the properties in that area with the required criteria. If the area hasn't been specified then all the areas have to be looked at to find a property matching that specification. This can take a lot of time and the company is losing out, we are losing customers because our service isn't up to standard and at the same time I have to pay the staff for all the manual work they have to carry out.

5. What advantages do you think the system will have?

The system will be very useful to my company because I will be able to find properties matching the set criteria very easily, the information will be up to date because it is easy to update. This means that time will be saved and the customer will hopefully be satisfied. At the moment I am paying my staff for doing a small task which takes a long time, but with this system their work will be simple and I will save money.

6. What disadvantages do you think the system will have?

As far as I can see there are no disadvantages in using this system that isn't also a disadvantage in our current system. If a power cut occurs in out new computer system, we have the information backed up in the filing cabinets for future reference. I am looking forward to using a computer based system.

Analysis

My interview with Mr Hall was very successful, positive, and was a good effort, and gave me the right approach on how to conduct my solution. Mr Hall was very positive about on how the solution should turn out in the end, this gave me a great taste on what specifications I would have to follow on. Various questions that I had asked my client were very intriguing and he was very confident about what equipment should be required for the solution. I have notes down to help me to plan my solution easily and quickly, and it will also help my to decide on what criteria would my computer system would be based on.

I also found out that my interview with my client was very helpful because he wanted to extend his own ideas to me, so that I could get onto his own passageway very easily. This was very superior for me because I actually took account of what my client desires for the new system. Mr Hall was very excited about what the final product will turn out to be so far, he also mentioned about what hardware, software, input devices, and output devices will be required for the Implementing the new system.

During my interview with my client Mr. Hall, I also found out that my client was very specific about the specifications of the new computer system. He also told me that the new system should last over 3 and over year's time, and should have the latest ACCESS database program built inside it (eg 2002 etc). He also wanted the data to be in NUMERICAL or TEXT order as well, and wanted all the data to be recognized very easily.

Final Solution

From my enquiry with my client Mr Hall during my interview, I still feel that my solution will not change because from my response from my client Mr Hall was very alarming and positive. Mr Hall feels that I am now ready to begin my solution as soon as possible. I will still tick to my first solution which was to design a database for my client who is currently struggling with his filing cabinet and his small card index box.

I will now go ahead with my final solution, to help my client to improve his business and his profession. This will help me to

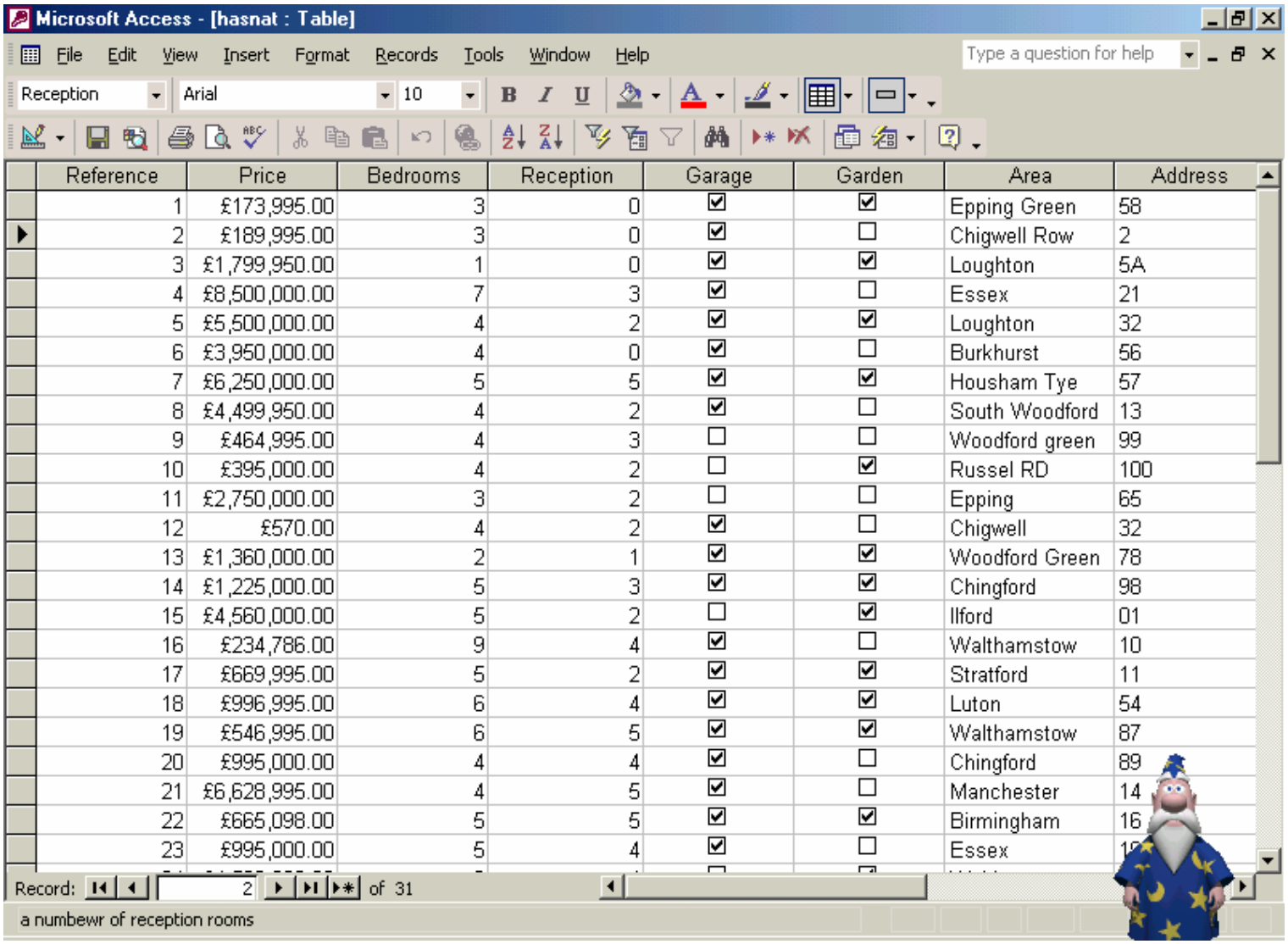
Reference	Price	Bedrooms	Reception	Garage	Garden	Area	Address

This The Database That I Have Created To Show Various Houses For Sale

1	£173,995.00	3	0	Yes	Yes	Epping Green	58
2	£189,995.00	3	0	Yes	No	Chigwell Row	2
3	£1,799,950.00	1	0	Yes	Yes	Loughton	5A
4	£8,500,000.00	7	3	Yes	No	Essex	21
5	£5,500,000.00	4	2	Yes	Yes	Loughton	32
6	£3,950,000.00	4	0	Yes	No	Burkhurst	56
7	£6,250,000.00	5	5	Yes	Yes	Housham Tye	57
8	£4,499,950.00	4	2	Yes	No	South Woodford	13
9	£464,995.00	4	3	No	No	Woodford green	99
10	£395,000.00	4	2	No	Yes	Russel RD	100
11	£2,750,000.00	3	2	No	No	Epping Green	65
12	£57,00,000.00	4	2	Yes	No	Chigwell	32
13	£1,360,000.00	2	1	Yes	Yes	Woodford Green	78
14	£1,225,000.00	5	3	Yes	Yes	Chingford	98
15	£4,560,000.00	5	2	No	Yes	Ilford	01
16	£234,786.00	9	4	Yes	No	Walthamstow	10
17	£669,995.00	5	2	Yes	Yes	Stratford	11
18	£996,995.00	6	4	Yes	Yes	Luton	54
19	£546,995.00	6	5	Yes	Yes	Walthamstow	87
20	£995,000.00	4	4	Yes	No	Chingford	89
21	£6,628,995.00	4	5	Yes	No	Manchester	14
22	£665,098.00	5	5	Yes	Yes	Birmingham	16
23	£995,000.00	5	4	Yes	No	Essex	19
24	£4,560,000.00	6	4	No	Yes	Walthamstow	23
25	£123,000.00	3	0	No	Yes	Walthamstow	69
26	£995,000.00	5	4	No	Yes	Chingford	35
27	£445,000.00	5	4	Yes	Yes	Walthamstow	6A
28	£486,995.00	4	9	Yes	No	Chingford	32

29	£995,995.00	5	6	Yes	Yes	Ilford	23
30	£452,000.00	6	2	Yes	No	Chingford	09

Screenshot of the Database in ACCESS



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5	£5,500,000.00	4	2	☑	☑	Loughton	32
6	£3,950,000.00	4	0	☑	☐	Burkhurst	56
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12	£570.00	4	2	☑	☐	Chigwell	32
13	£1,360,000.00	2	1	☑	☑	Woodford Green	78
14	£1,225,000.00	5	3	☑	☑	Chingford	98
15	£4,560,000.00	5	2	☐	☑	Ilford	01
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17	£669,995.00	5	2	☑	☑	Stratford	11
18	£996,995.00	6	4	☑	☑	Luton	54
19	£546,995.00	6	5	☑	☑	Walthamstow	87
20	£995,000.00	4	4	☑	☐	Chingford	89
21	£6,628,995.00	4	5	☑	☐	Manchester	14
22	£665,098.00	5	5	☑	☑	Birmingham	16
23	£995,000.00	5	4	☑	☐	Essex	1

As you can see above I have created a special screenshot showing how I have confronted my main task of this problem. I have used Microsoft ACCESS office XP, to show what the final product will look like in the latest program