

Video World Data System

**AS ICT PROJECT
BY GRANT WINKLES**

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Analysis

Introduction

Video World is a video rental shop, located in Ashby's town centre. It is a relatively small shop and has 31 members who live in and around Ashby de la Zouch.

The shop is owned and managed by Gary Lane. He set up the business two years ago and has two other staff working in the shop on a part time basis.

Gary currently has a filing system that occupies a great deal of space and is very time consuming to analyse. He gives his members cards and has to manually record which video members are hiring. The old paper filing system is very inefficient in notifying when members are overdue with bringing the videos back. This in turn means other customers are unsatisfied when the video they want isn't in stock and so Gary loses out on revenue. Gary Lane possesses greater than average IT skills and is keen to introduce a computer-based system for the rentals of his videos.

The system both old and new is needed to:

- Keep track of members and their details.
- Keep track of the number of videos each member of staff rents out to customers.
- Have a listing of all the staff in the shop
- Have a list of all the videos in stock
- Have a list of all the videos rented
- Enable a showing of which videos are rented by which customers
- Show when the video is due back
- Be able to add/delete members, videos and staff

Investigation Methods

An interview was arranged with Mr Lane and a list of points to be discussed was drawn up before the interview. Also I contacted Gary Lane by telephone and e-mail to pick up certain points.

Topics for discussion:

- The reasons for requiring the new information system
- The problems with the current manual system
- The methods currently used to record data
- The information that needs to be kept in each of the following areas:
 - Staffing
 - Videos
 - Rentals
 - Members
 - Video costs
- The required output
- Any hardware or software limitations – for example what was the hardware and software to be used?

Summary of the Interview

The nature of the paper-based system was discussed. Basically everything including customers, videos, staff and rentals are all written out manually onto a standard form every time something needed to be updated.

There are a few problems with this filing system:

Keeping track of when videos are due back.

Because all the data is kept in files you must continuously check if people are not bringing data back. Obviously this can be very time consuming and errors are likely to be made, resulting in lost videos, lost assets and revenue. It is also not immediately obvious when a date is overdue because there is so much writing on the forms and so you cannot always see an overdue video.

Seeing how well the staff are doing.

There is nothing in the old system that tells Gary how well his staff are doing. If he knew how many videos his staff sold each month he could perhaps reward them with bonuses or even employee of the month awards.

Stock levels.

It can also be a nuisance for Gary to go into the storeroom to get a video only to find that the video has already been rented out. There is no way to check if the video is in or out before he goes into the storeroom. This can be quite serious because while he is in the storeroom it can leave the shop unstaffed with potential thieves in the shop.

The amount of time it takes to document a new member.

With the manual system it can be very time consuming, just entering data for the new member. The form has no tick boxes and Gary has to write it all in full by hand.

There are no links.

All the different files are all kept separate from each other and so there are no links between: The video the person who rented the video and the staff member who rented the video out. If these files were linked relevant data and information could be retrieved.

Concluding Remarks

Mr Lane the end user is used to his position and is suffering from a paper based management system that is inefficient. Gary Lane realises his problems and is very willing to become more efficient in his workplace.

The computer on which Mr Lane will operate within Video World is a Windows 95 system and the workstation has a specification of a 200 MHz processor with 32 MB RAM and 4 MB graphics cards. He has a Microsoft Office 97 professional suite that includes Microsoft Word, Access, Excel, Publisher and PowerPoint. He is very keen to have a solution implemented, which makes use of the applications within Microsoft Office. His initial ideas were centred on the use of Excel and Word, with which he is very familiar, although he is willing to learn how to use Microsoft Access.

Objectives for the New Systems

Qualitative

1. Data entry should be as intuitive as possible.
2. The input screens should explain themselves.
3. Data entry should be quick.
4. The mechanics of the application chosen should not be apparent to the user.
5. ▲ main menu should be loaded automatically when the database is loaded, and the whole system should be menu driven.

Quantitative

1. It should be possible to rent a video without referring to video or member input screens.
2. It should be possible to input new videos, staff members, and customers in less than thirty seconds.
3. It should be possible to provide reports in less than 60 seconds in each of the following areas:
 - Videos rented
 - The staff that rented the videos out
 - Staff currently employed
 - Videos owned by the store
 - Customer details

Constraints

Hardware

The solution will be installed on a computer on which is a Windows 95 system and the workstation which consists of a 200 MHz MMX processor coupled to 32 Mb RAM and 4 Mb graphics cards. Gary has no problem with the amount of storage available. ▲ Access will be able to perform efficiently with the amount of RAM available. The graphics card will allow complex screens to be refreshed at fairly fast rates.

The Development will be performed mostly at school, on the school network which has a minimum specification of machines with 32 Mb RAM and 200Mhz Processors, This is nearly the same as Gary Lane's shop computer so I will be able to see how fast or slow it will work.

Software

Video World's ▲ Applications Suite is the Microsoft Office 97 Professional, which includes Word 97, Excel 97, ▲ Access 97 and PowerPoint 97.

The development will be performed at school using ▲ Access 97 as part of the total Office 97 Professional suite. ▲ As Video world uses Microsoft Office 97 there shall be no difficulties in exporting files. ▲ Also I have Microsoft Office 97 so I will be able to do perform some of the tasks at home.

User's IT Skills and Knowledge

The end user Mr Lane is an experienced user of Word and has a basic knowledge of the operation of Access. He is also quite good at using Excel. His keyboard skills are standard. He has used Publisher for the making of cards but never on a professional basis.

Design

Comparison of Possible Solutions

▲ number of possible solutions could be considered:

- Use of Excel 97 Spreadsheet
- Use of ▲Access 97 Database

Excel 97 is a spreadsheet of considerable power including database facility. However the relationships required would be difficult to implement in the time scale available. The final solution might also be difficult for the end user to understand and maintain.

Access 97 has all the capabilities required and is the preferred option for the end user. I have experience of using ▲Access and some Visual Basic knowledge that can be used for enhanced customisation.

Using ▲Access 97 it will be possible to:

- Create and edit tables
- Create and edit relationships
- Create forms and reports based on tables
- Create customised input screens and using Visual Basic facilitate searches and validation procedures
- Create queries to find specific data
- Create a menu driven system
- Implement security provision.

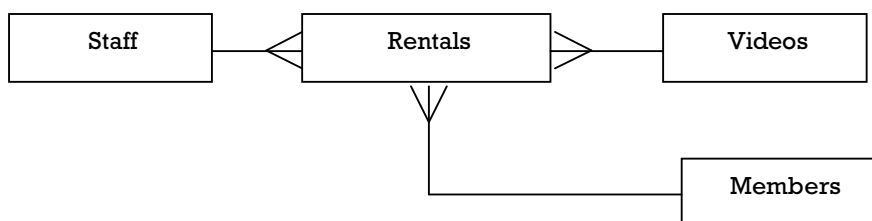
Database Design

The Database contains FOUR entities:

- Staff
- Videos
- Members
- Rentals

These are related as shown below (in normalised form illustrating many to one relationship from rentals table to the other three).

These relationships will be confirmed in the database relationship facility.



Data Requirement Definition (partial data dictionary)

Video

Attribute name	Comments	Data type and length	Validation
VideoID		AutoNumber	Unique Primary Key
Video Name		Text (50)	
Genre	Combo Box- (▲ list of different genres)	Text (50)	
Certificate	Combo Box- U PG 12 15 or 18	Text (50)	
Price (3 Nights)	Combo box- £2.00, £2.50 or £3.00	Currency	

Staff

Attribute name	Comments	Data type and length	Validation
StaffID		AutoNumber	Unique Primary Key
Surname		Text(50)	
Firstname		Text(50)	
Address		Text (50)	
Town		Text (50)	
DOB		Date	
Phone Number		Text(10)	

Customer

Attribute name	Comments	Data type and length	Validation
CustomerID	Automatically incremented	Long Integer	Unique Primary Key
Title	Combo box- Mr, Mrs or Miss	Text (50)	
First Name		Text(15)	
Surname		Text(15)	
Address		Text(50)	
Town	Combo box ▲shby de la Zouch, Measham or Coalville	Text(50)	
postcode		Text(10)	
DOB		Date/Time	

Rentals

Attribute name	Comments	Data type and length	Validation	
CustomerID	Automatically incremented	Long Integer	Unique Key	Primary
StaffID	Automatically incremented	Long Integer	Unique Key	Primary
VideoID	Automatically incremented	Long Integer	Unique Key	Primary
Date Rented		Date/Time		
Date of Return		Date/Time		
Cost of Rental		Currency		

Design of Input Forms

Four Data Input Forms are needed

- Customers
- Staff
- Videos
- Rentals

Customers Form

This will be needed to input and update the Members of Video World. Customers are automatically numbered. For this reason automatic incrementation is used. This form will be accessed from the editing form, which is reached from the main form. There will be a button to add customers and delete customers and also a find button. In addition the end user wished for a sub form that detailed the videos that the customer had already rented out. There will be a button to re-enter the editing form.

The Staff Form

This will be needed to input and delete the staff of Video World. Staff are given automatically incremented ID numbers. This form will also be accessed from the editing form. There will be a button to add and delete staff. There will be a button to re-enter the editing form.

The Video Form

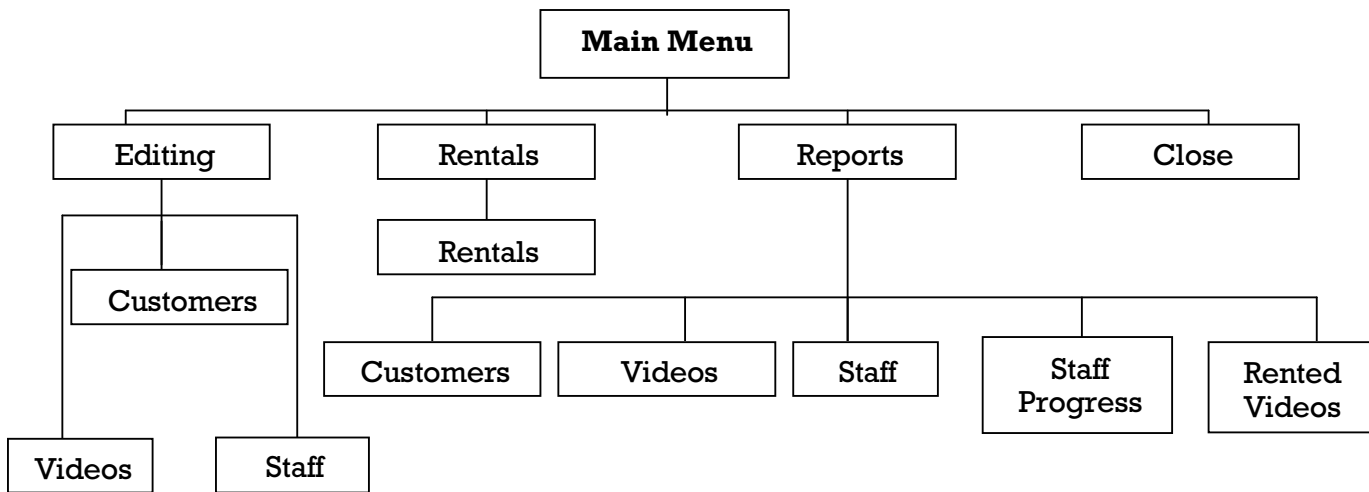
This will be needed to input and delete the videos in Video World. Staff are given automatically incremented ID numbers. This form will be accessed from the editing form. There will be a button to add videos and a button to delete videos and a list box will be used to view details of videos already allocated. There will also be a find button to locate any video that needs editing or deleting. There will be a button to re-enter the editing form.

The Rentals Form

This will be needed to input the rented videos. This form will be accessed from the Main Menu. There will be a button for return videos and a button to delete videos and a list box will be used to view details of videos already allocated. There will also be three subforms that will show data once the IDs of staff, customers and videos are entered. There will also be a button to re-enter the Main Menu.

Menu Design

The menu structure will be based upon the following plan



Menu Design Explanation

Button	Effect	Effect on Original form
Main Menu		
Editing	Opens "Editing" Menu	Remains Open
Reports	Opens "Reports" Menu	Remains Open
Rentals	Opens "Rentals" Menu	Remains Open
Close	Exits Application	Shut and Application Closed
Reports Menu		
To Main Menu	Open Main Menu	Remains Open
Customers	Previews Report	Remains Open
Staff	Previews Report	Remains Open
Videos	Previews Report	Remains Open
Staff Progress	Previews Report	Remains Open
Rented Videos	Previews Report	Remains Open
Rentals		
Rentals	Open "Rentals "	Remains Open
To Main Menu	Open Main Menu	Remains Open
Editing		
Add Staff	Open "Add Staff" Form	Remains Open
Add Rooms	Opens "Add Rooms" Form	Remains Open
Add Contractors	Opens "Add Contractors" Form	Remains Open
Add Jobs	Opens "Add Jobs" Form	Remains Open
To Main Menu	Open Main Menu	Remains Open

Report Design

The design of the reports shall be generated using Access facilities to provide a professional look. Gary Lane would like the reports to show a lot of detail in a small space and so I think that a columnar report will be best suited.

Queries

Queries are an integral part of the operation of any Access Database. The queries implemented will enable reports to be formed, which will enable the specification required by the end user to be fulfilled:

Name of Query	Function and Notes
Action	Shows all of the Action Videos the shop owns as Mr Lane has discovered that his members enjoy Action films the most. From this query he can tell what percentage of videos are action.
Ashby	This shows all the customers in Ashby. Gary Lane would like to know this information because he is Ashby based and would like to know what percentage of his customers come from Ashby
Customer	Shows all the customers that are currently members.
Staffrentals	Shows what videos the staff have rented out to customers. This information is needed to back up bonuses and awards.
Staff	Shows the information about staff.
Late	This shows all of the videos currently rented out. Mr Lane requested this information because he wanted to know who had not brought their videos back in time.

Security

A password will be attached to enable Mr Lane and his staff to have immediate access to the Database. There is no need for different levels of security.

Schedule of Activities

Test No	Activity and Comment	Date Completed
1	Initial visit to end user	13-01-01
2	Design and prepare a questionnaire for end user	15-01-01
3	Obtain questionnaire and discuss outcomes with end user	20-01-01
4	Generate design and plans for system from feedback from end user.	04-02-01
5	Prepare initial ideas for tables and design input forms	08-02-01
6	Discuss design of input forms and discuss output with end user	10-02-01
7	Construct tables and input forms	12-02-01
8	Construct main menu forms	16-02-01
9	Construct queries	20-02-01
10	Generate model reports from queries	24-02-01
11	Apply sub forms to main forms using wizards	01-03-01
12	Apply macros to database	03-03-01
13	Generate structure of reports	04-03-01
14	Finalise structure of sub menus to point to data input menu, report menu and rental menu	06-03-01
15	Perform testing plan using extended data	08-03-01
16	Analyse results of testing and make any adjustments to design	12-03-01
17	Carry out system testing	16-03-01
18	Analyse results of end user tests	18-03-01
19	Prepare system maintenance and user documentation.	22-03-01

Test Plan

Test No	Test	Expected Results
1 Password	Test password	Only "labeda" opens Main Menu
2 Main Menu	Test main menu option to Open "Editing" Form	Opens Data Entry Form
3 Main Menu	Test main Menu Option to Open "Reports Form"	Opens Reports Form
4 Main Menu	Test Main Menu option to open "Rentals" form	Opens rentals form
5 Main Menu	Test "Exit" Option	Database Closes
6 Editing Menu	Test editing Option to Open "Customers" form	Opens Edit Customers form
7 Editing Menu	Test editing Option to Open "Videos" form	Opens Edit Videos Form
8 Editing Menu	Test Editing Option to Open "Staff" form	Opens Staff Form
9 Customer Form	Test "▲Add Customer" Button	▲ new empty record shall be visible
10 Customer Form	Test "Delete Customer" Button	The record selected is deleted
11 Customer Form	Test "Find" Button	The find box shall appear and the criteria selected shall be found
12 Customer Form	Test relationships between form and subform	The subform will show which videos the main form customers has rented
13 Customer Form	Test combo boxes	There should be a list of titles and towns to choose from.
14 Video Form	Test "Find" button	The find box shall appear and the criteria selected shall be found
15 Video Form	Test "▲Add Video" Button	▲ new empty record shall be visible

16 Video Form	Test combo boxes	There should be a list of genres certificates and prices to choose from.
17 Staff Form	Test "▲Add Staff" button	▲ new empty record shall be visible
18 Staff Form	Test "Fired Staff" button	The record selected is deleted
19 Rentals Menu	Test "Rentals" button	The Rentals form will open
20 Rentals Form	Test subforms relationships by inputting Ids for Customers Videos and staff in the main form	The subforms will show the details for the Ids shown in the main form
21 Rentals Form	Test "Price" Combo box	There will be a list of prices to choose from
22 Rentals Form	Test Macro Overdue	▲ text box shall appear when there is a customer who hasn't returned a video on time.
23 Rentals Form	Test "Returned" button	The record selected shall be deleted
24 Reports Menu	Each Menu Option Tested	Ensure that each report is reviewed and then available for printing.
25 Data Base	Test all back to main menu buttons	▲After pressing the button you shall be taken to the previous or main menu
26 Test' Recovery' after failure in power.	Tested at various points through application	Ensure that only current changes are lost
27 ▲acceptance test by end user	End user encouraged to use program and enter a variety of data.	End user will validate operation and fill in feed back questionnaire

Implementation

System Overview

This Video World rentals system is designed to replace the current paper based system.

The system is designed to run on the Video World PC on the basis that all of the staff can access and edit the Database.

Input of data into the system is through four purposely -constructed input forms:

- Staff Input
- Video Input
- Customer Input
- Rentals Input

You can input data at any time and the information that arises from these forms, comes in the form of queries. And so the end user can make use of the information. The queries can be turned into reports for an overall analysis.

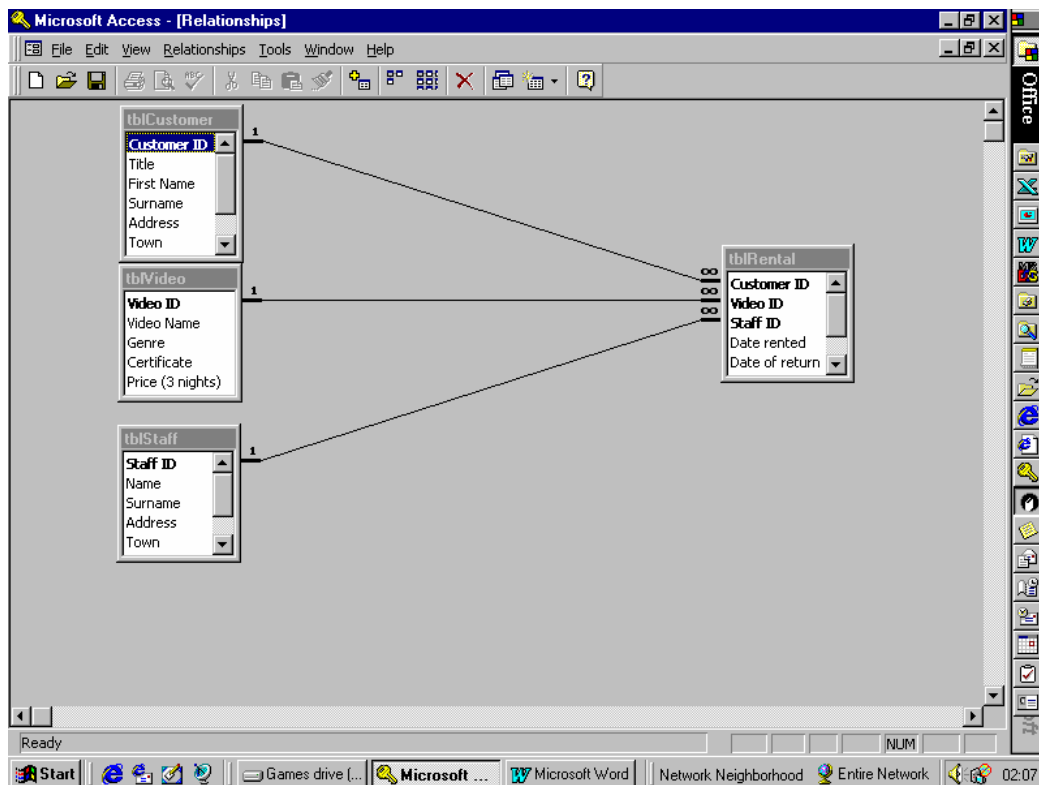
Tables and Relationships

This system is designed so that the mechanics behind all of the forms and reports will not be seen. The end user will only be using forms and reports.

Every required input table has been repeated as a form. The requirements of the tables have been discussed in the design section.

The relationships between tables is shown in the design section and confirmed in the relationship facility within the Database. A screen shot is shown below:

The relationships between the tables are shown. The entities and their attributes used in the table constructed are clearly detailed in the design section.



Forms

The Menu Structure was constructed as shown in the Design Section. I have decided to leave all of the toolbars and scrollbars in.

Main Menu

This form was selected as the start-up form (using Tools, start-up). This means it automatically loads when the database is opened.

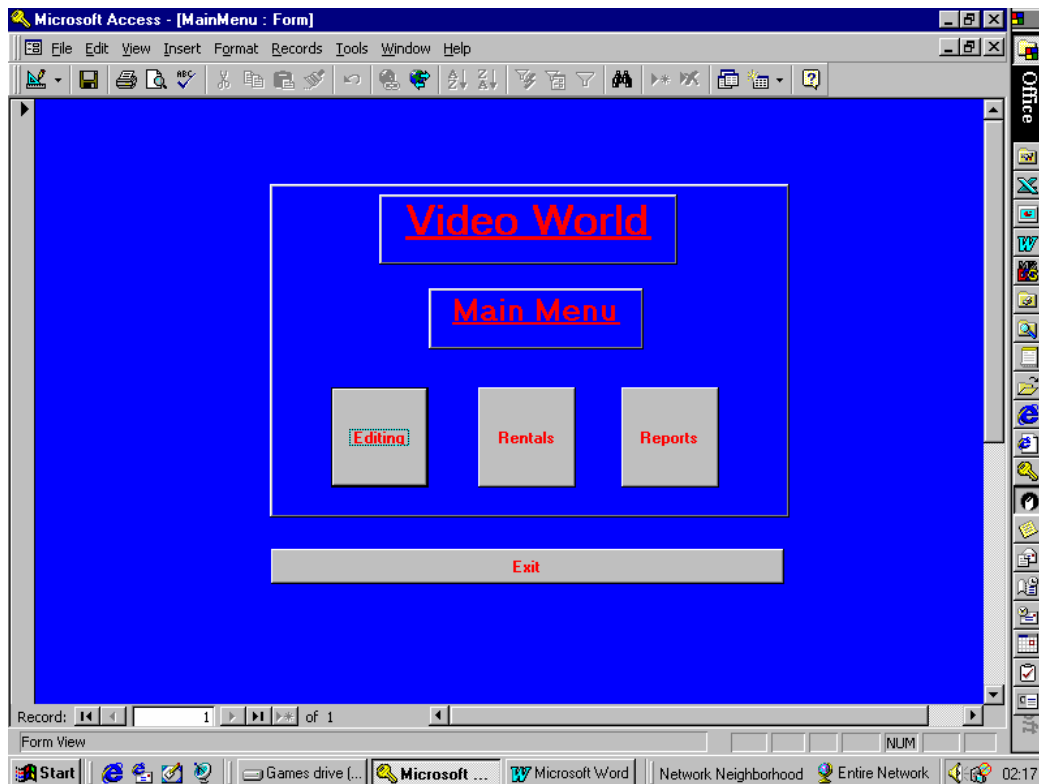
▲ All buttons placed on this form were allocated using wizards. This included the buttons for opening other forms and closing the Database.

▲ macro called Maximise opens the window to a maximum size when the database is opened.

Other forms navigated from this Main Menu are:

- The Edit Data Menu
- Reports Menu
- ▲ rentals Menu

▲ screen shot is shown below:



The Reports Menu

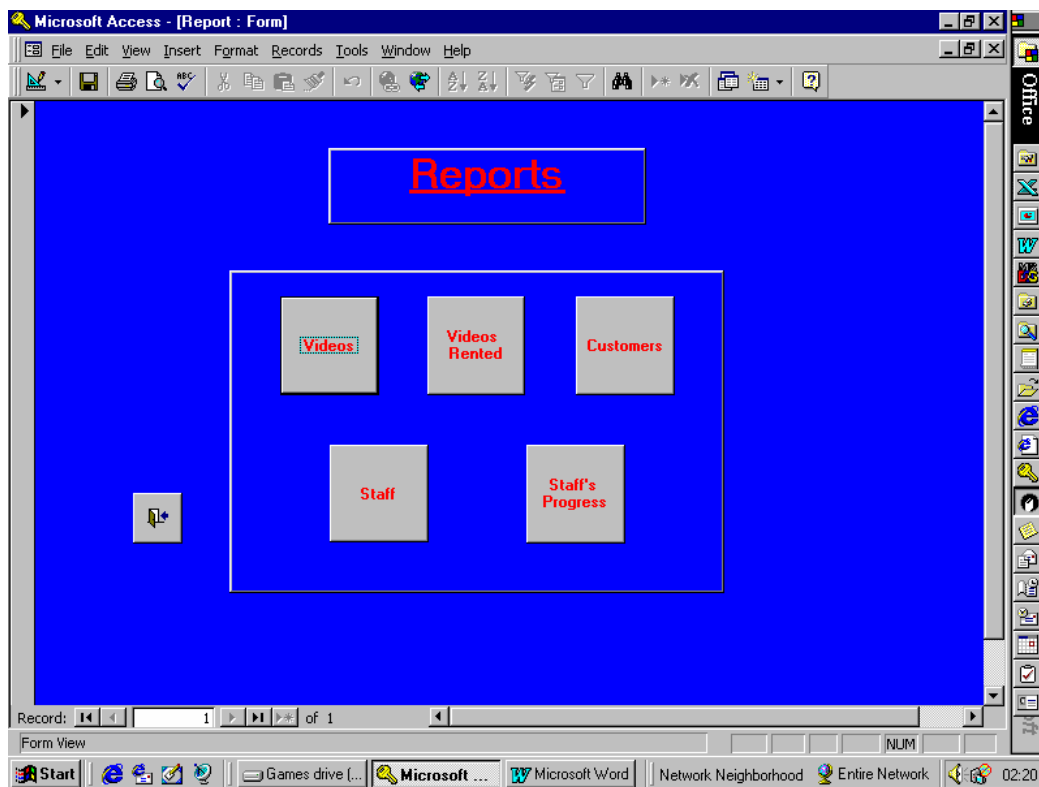
All buttons were placed using wizards. Maximise macro carries on running when you open the Reports menu.

Reports Menu allowed navigation to the following reports and forms

- Customers
- Videos Rented
- Customers
- Staff
- Staff Progress

▲ main menu button provided by button wizard is also in this form

▲ screen Shot is shown below:



Edit Data Menu

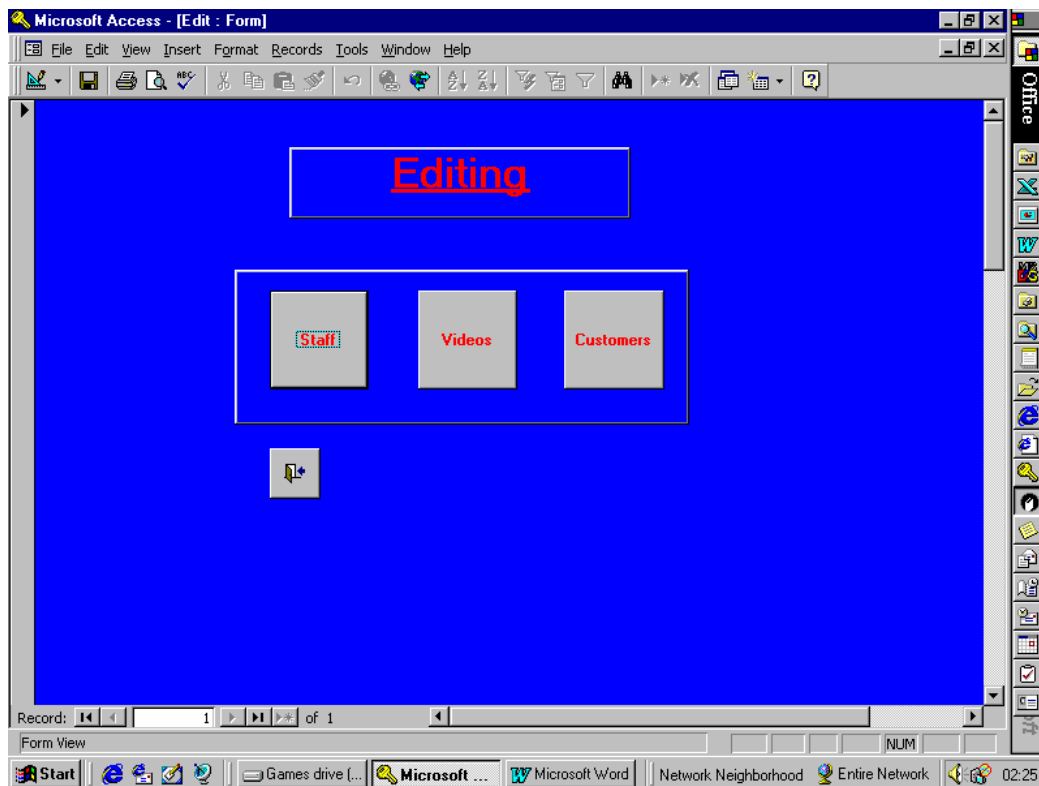
All buttons were allocated using Access Wizards. Maximise continues on opening.

The Edit Data Menu allows navigation to the following Forms:

- Add Staff (Input Form)
- Add Video (Input Form)
- Add Customer (Input Form)

There is also a Main Menu Button added by button wizard

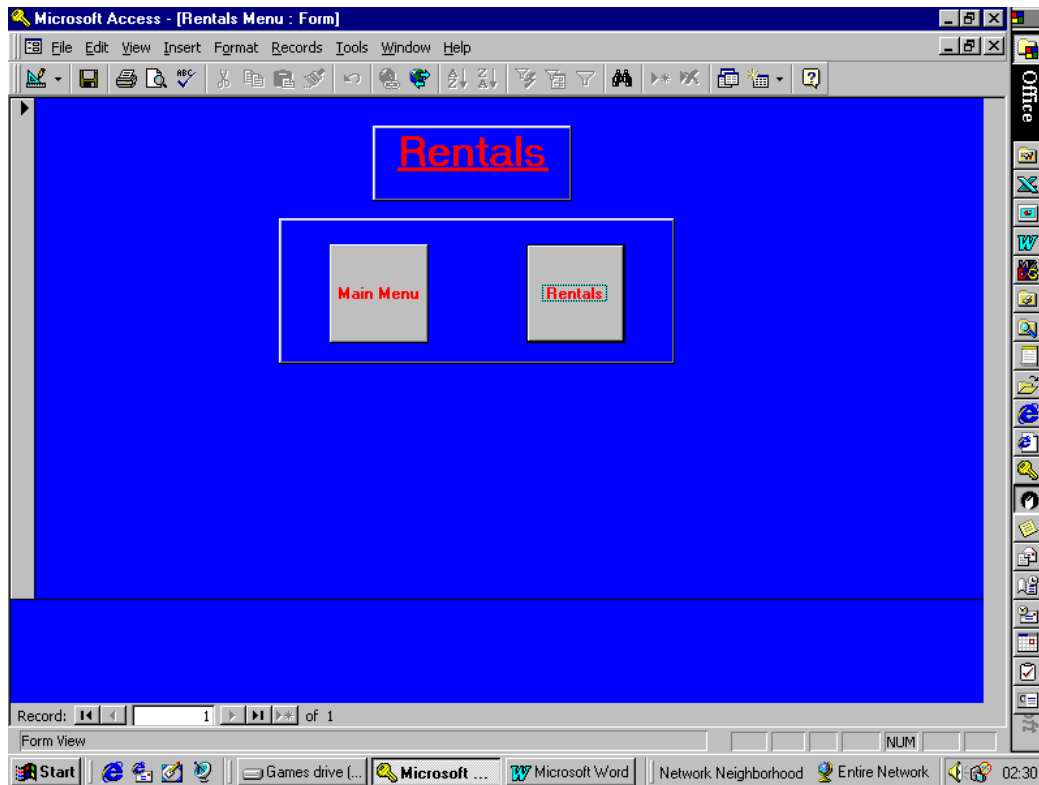
A screen shot is shown below:



Rentals Menu

This menu is accessed from the main menu. All the buttons were allocated using wizards. The macro Maximise continues when opening this form.

This menu provides access to the Rental form (Input Form). There is also a Main menu button.



Input Forms

Add Staff Form

The screenshot shows a Microsoft Access window titled "Microsoft Access - [frmStaff]". The window contains a form titled "Staff" with the following fields and values:

Field Name	Value
Staff ID	
Name	Gary
Surname	Lane
Address	19 Honey Road
Town	Ashby
DOB	8/12/53
Phone Number	01530 417489

Below the form, there are three buttons: a back button (left arrow), a "New Staff" button, and a "Fired Staff" button. The status bar at the bottom indicates "Record: 1 of 3" and "Form View".

This is a simple input form, constructed from the staff table.

To add a staff member you must click on the New Staff button provided by button wizard. This will make all of the entities blank for you to enter the correct data. The Staff ID is automatically incremented. There is also a delete record button for fired staff (ie staff no longer employed). There is also a back to editing menu button generated by button wizard.

Edit Customers Form

The screenshot shows a Microsoft Access window titled "Microsoft Access - [tblCustomer]". The main form is titled "Customers" and contains the following fields:

Customer ID	22
Title	Mrs
First Name	Eva
Surname	Ball
Address	67 Nottingham Road
Town	Ashby
Post Code	LE65 4QW
DOB	3/30/78

Below the fields are buttons for "Add Record" and "Delete Record".

The "Rental" subform contains the following fields:

Customer ID	22
Video ID	0
Staff ID	0
Date rented	
Date of return	
Cost of Rental	

The status bar at the bottom indicates "Record: 1 of 31" and "Form View".

This form is used to add customers and also delete them. There are buttons for both of these functions generated by button wizard. There is also a find button generated by button wizard to find particular customers. There is a subform that shows what (if any) videos that particular customer is currently renting out, and when it is due back. It can do this because the forms are both related by their customer IDs.

▲ back to editing menu button is also generated using button wizard.

Rentals Input form

Rentals

Customer ID:
 Video ID:
 Staff ID:
 Date rented:
 Date of return:
 Cost of Rental:

Customer ID	First Name	Surname
(AutoNumber)		

Record: 1 of 1

Staff ID	Name	Surname
1	Gary	Lane
(AutoNumber)		

Record: 1 of 1

Video ID	Video Name	Certificate	Price (3 nic)
12	Nutty Profesor 2	12	£2.50
(AutoNumber)			

Record: 1 of 1

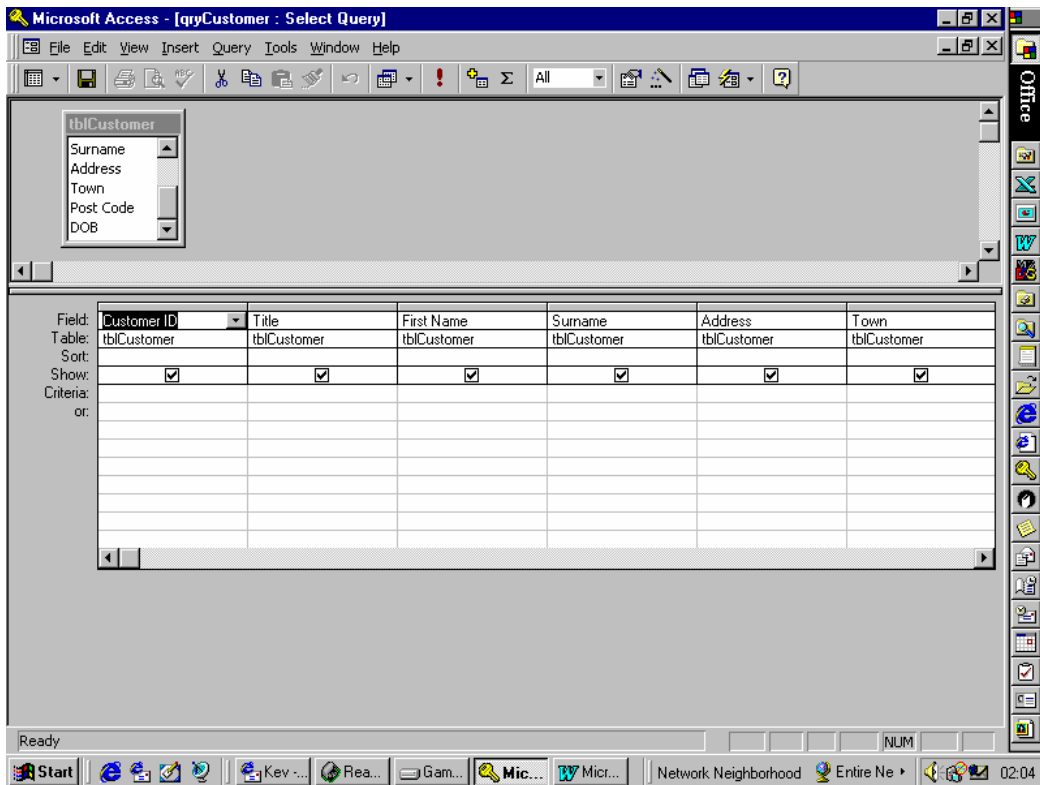
This form is used to input and delete the rentals from Video World. There are three subforms (frmStaff, frmCustomer and frmVideo) these are all related to the main form with their respective IDs. So when you type an ID into the main form the subform shows you which customer, video or staff member you have typed the ID in for. There are also buttons provided by button wizard for returning certain videos and for going to the main menu.

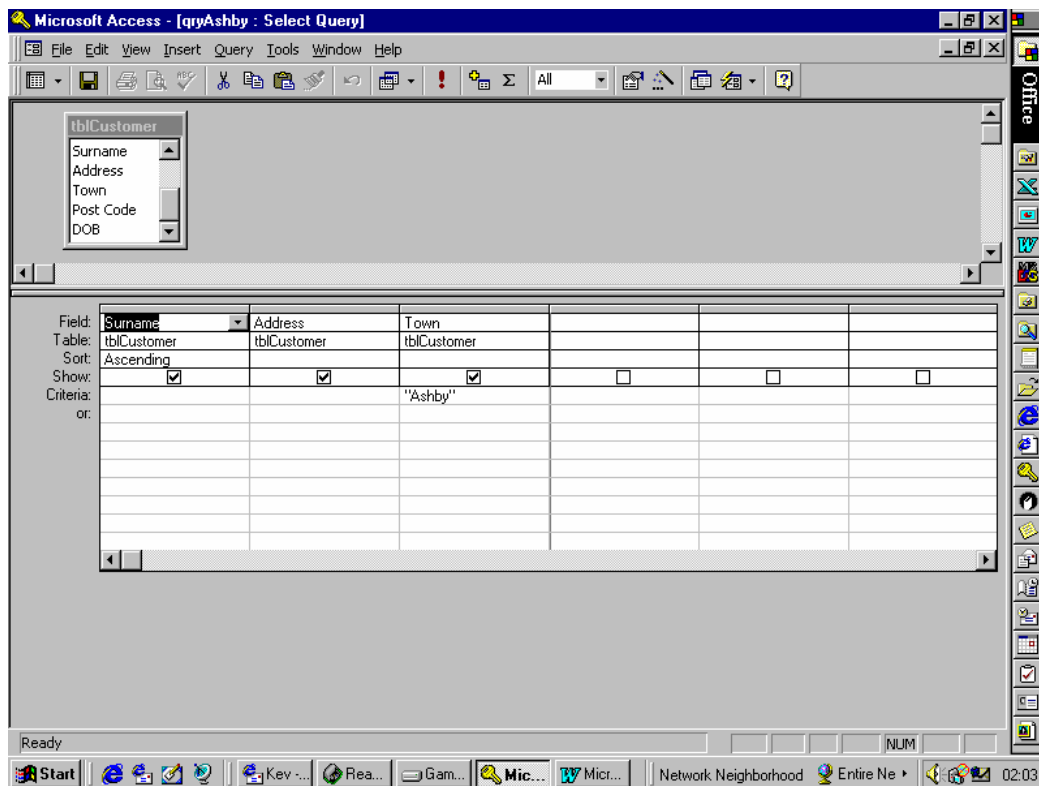
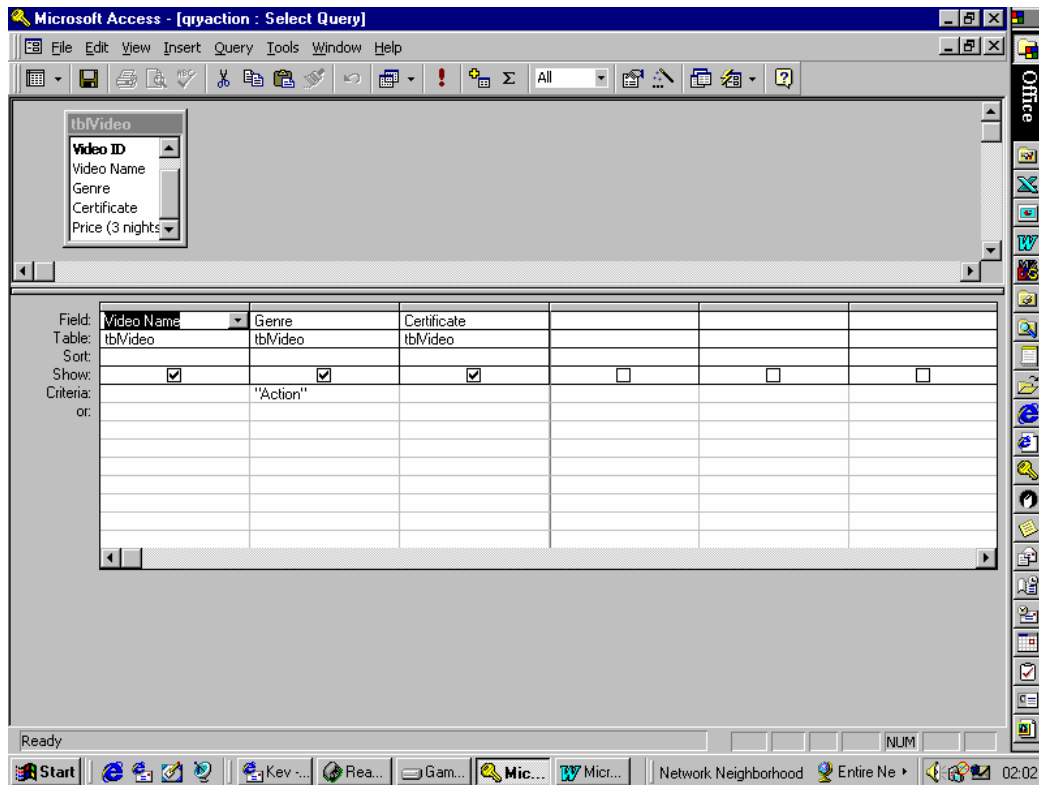
Queries

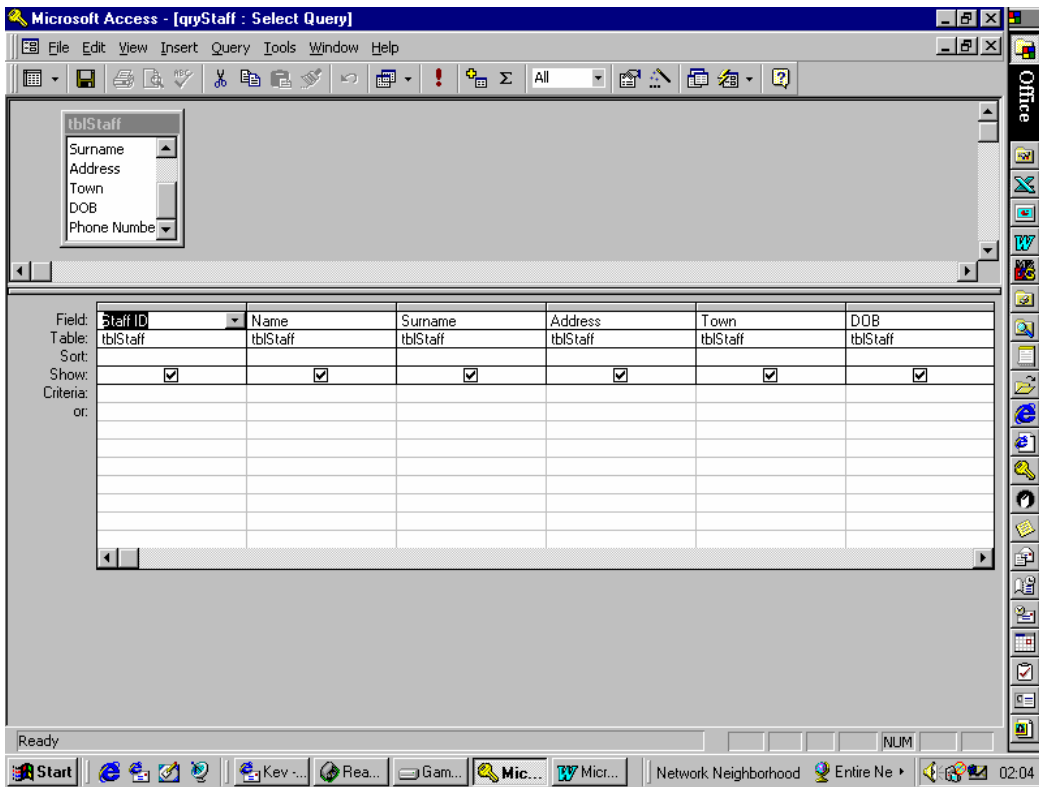
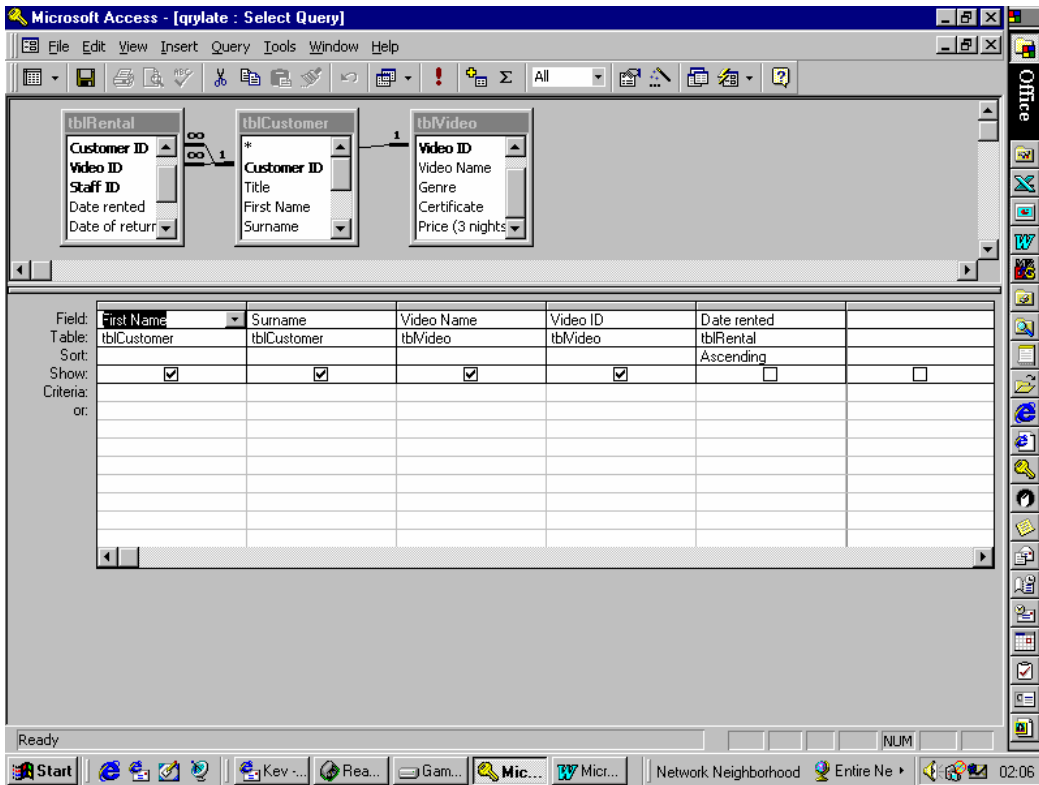
Queries are listed in the design section.

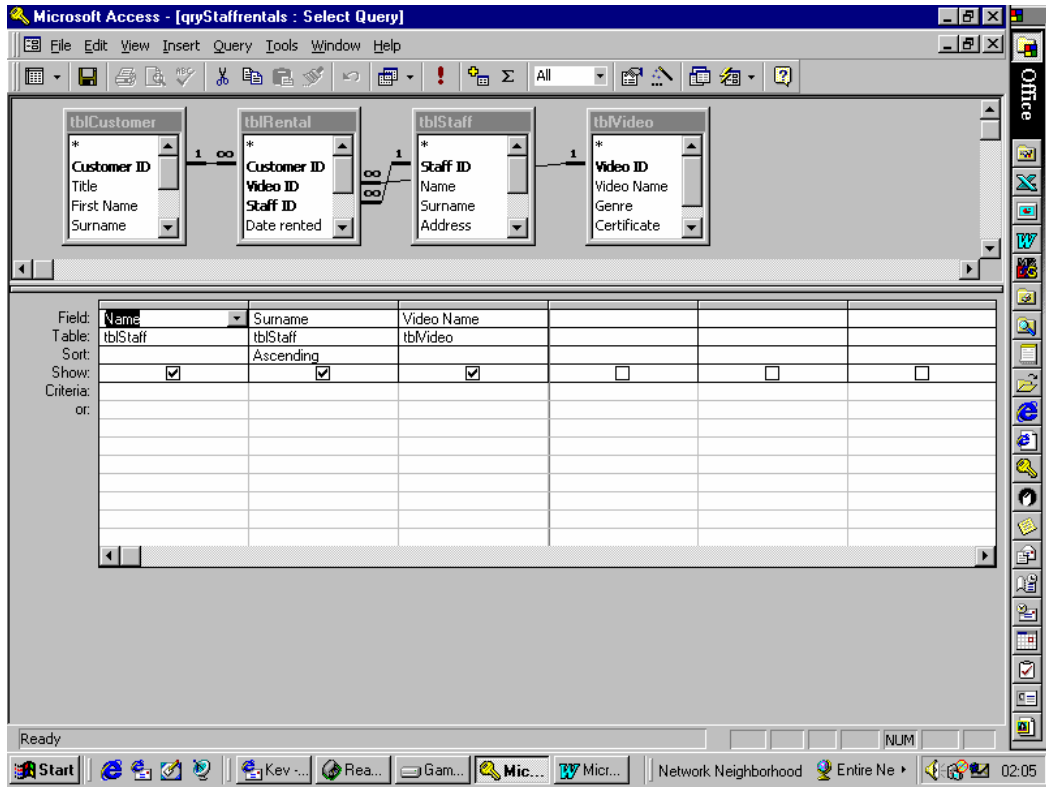
All of the queries have been generated without the use of any wizards and have been produced from scratch by myself.

Screen shots:









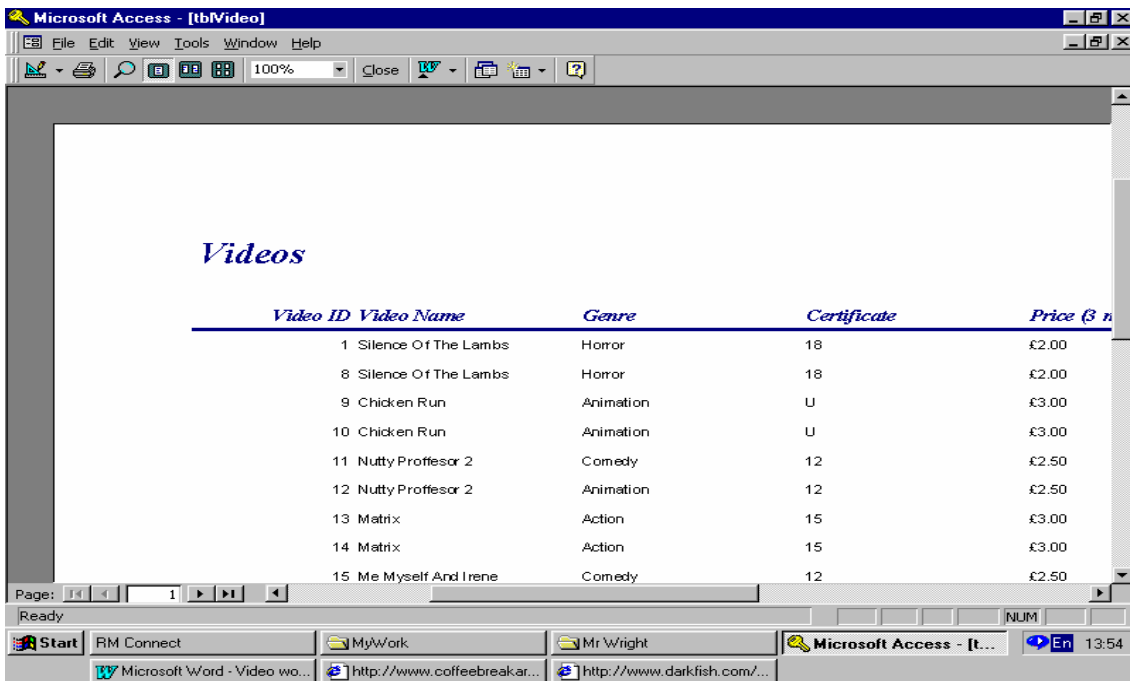
Reports

The reports take information from the queries and turn them into a more user friendly vision.

I have reports for the customers, customers in Ashby, videos currently being rented out and by whom, the staff employed, the videos that staff have rented to customers, and the videos currently owned by Video World. The reasons for these reports have been explained in the query section of the design section.

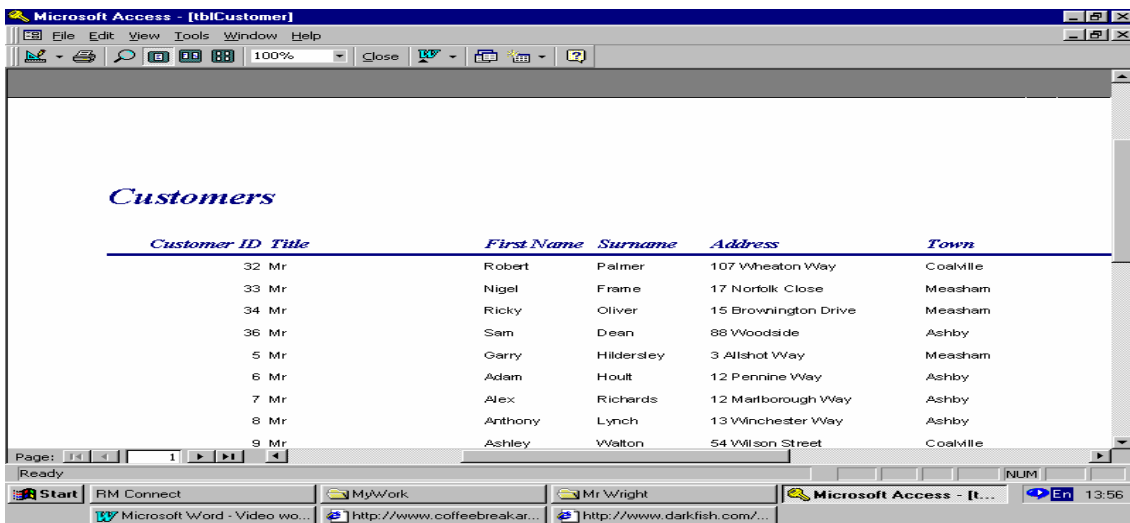
All the reports were produced and then modified to the specifications of Gary Lane the end user.

Screenshots are shown below



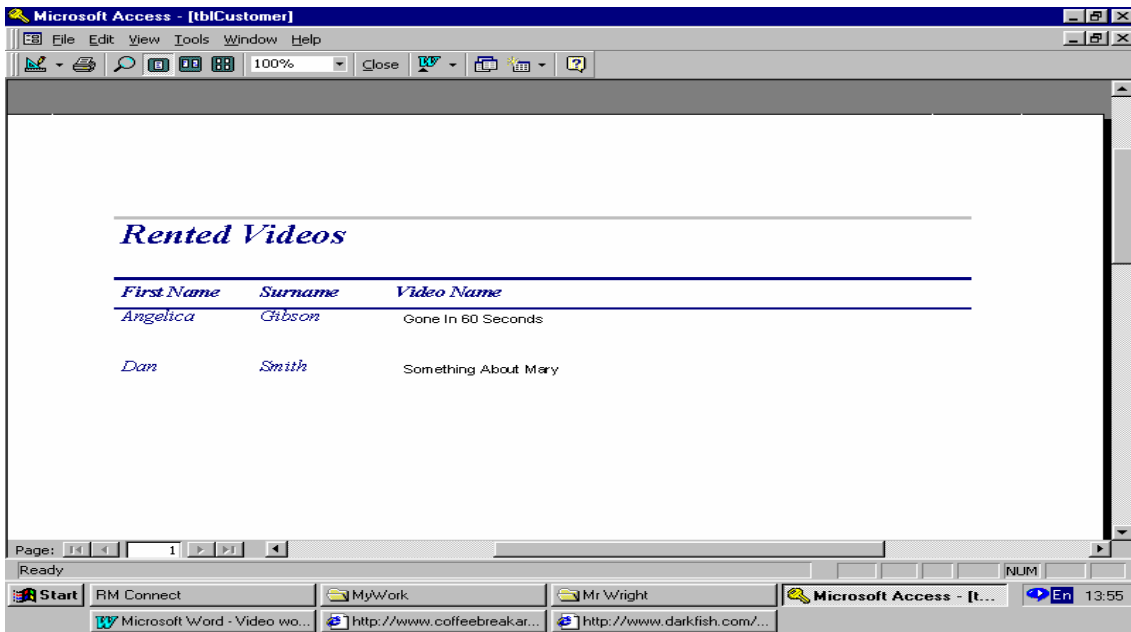
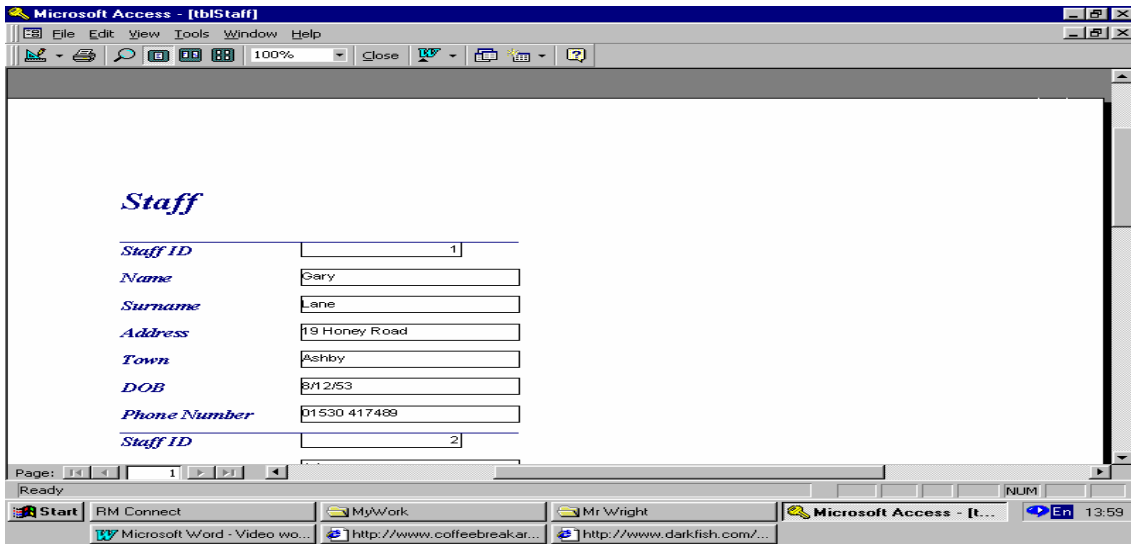
The screenshot shows a Microsoft Access window titled 'Microsoft Access - [tblVideo]'. The main area displays a report titled 'Videos'. The report contains a table with the following data:

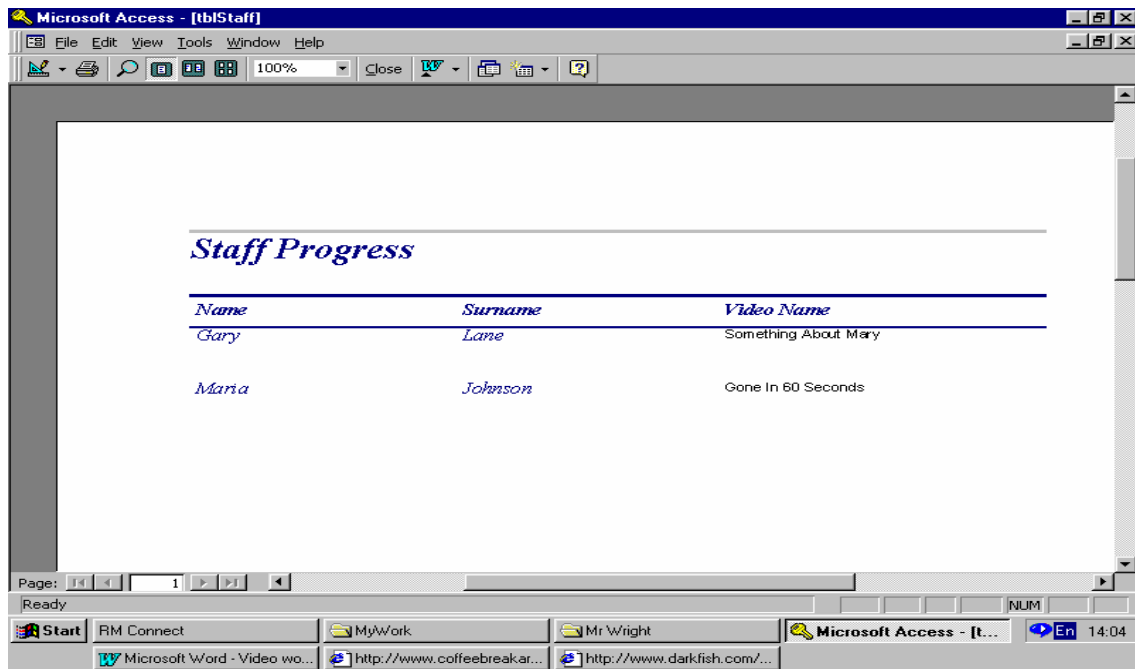
Video ID	Video Name	Genre	Certificate	Price (£ n)
1	Silence Of The Lambs	Horror	18	£2.00
8	Silence Of The Lambs	Horror	18	£2.00
9	Chicken Run	Animation	U	£3.00
10	Chicken Run	Animation	U	£3.00
11	Nutty Professor 2	Comedy	12	£2.50
12	Nutty Professor 2	Animation	12	£2.50
13	Matrix	Action	15	£3.00
14	Matrix	Action	15	£3.00
15	Me Myself And Irene	Comedy	12	£2.50



The screenshot shows a Microsoft Access window titled 'Microsoft Access - [tblCustomer]'. The main area displays a report titled 'Customers'. The report contains a table with the following data:

Customer ID	Title	First Name	Surname	Address	Town
32	Mr	Robert	Palmer	107 Wheaton Way	Coalville
33	Mr	Nigel	Frame	17 Norfolk Close	Measham
34	Mr	Ricky	Oliver	15 Brownington Drive	Measham
36	Mr	Sam	Dean	88 Woodside	Ashby
5	Mr	Garry	Hilderley	3 Allshot Way	Measham
6	Mr	Adam	Hoult	12 Pennine Way	Ashby
7	Mr	Alex	Richards	12 Marlborough Way	Ashby
8	Mr	Anthony	Lynch	13 Winchester Way	Ashby
9	Mr	Ashley	Walton	54 Wilson Street	Coalville





Macros

The macros I have used are

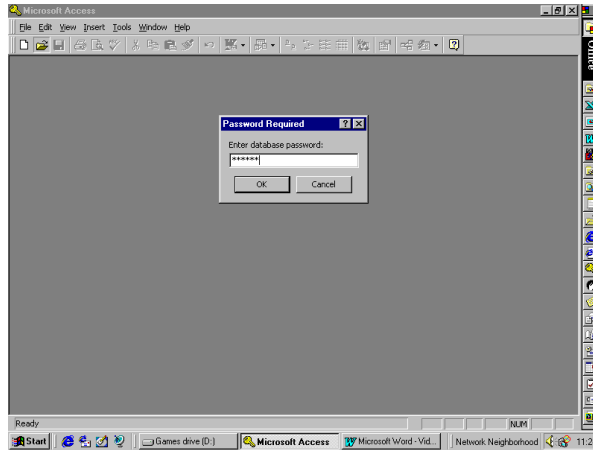
- | | |
|----------|--|
| Maximise | This macro maximises the form that I set it to. I have set macro maximise to the Main Menu and it takes place as soon as somebody opens the Video World database. |
| Overdue | This macro tells the end user if a person has not brought their video back on time. If the condition of the date being a day after the date of return is valid, then a text box shall appear saying the customer owes a video. |

Test Results

I have gone through with my test plan and here are my results. I have provided screen shots for all of my tests as proof that they are successful or not.

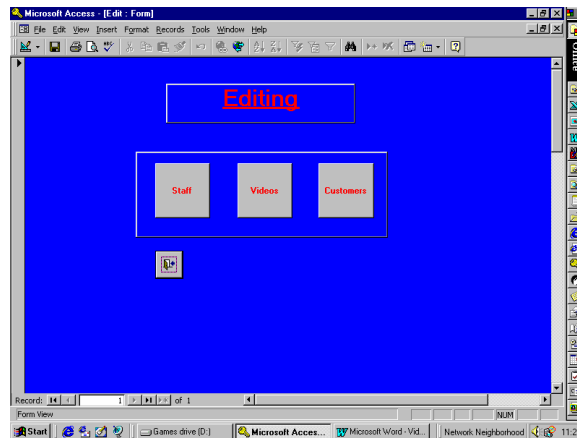
Test 1- Test Password

This test was successful as the password entry screen came up and only "labeleda" opened the main menu.

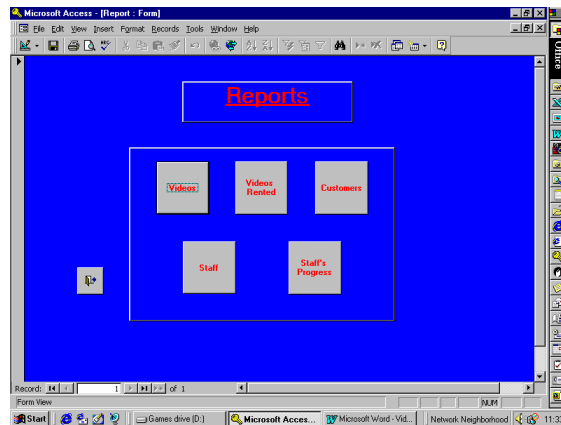


Test 2- Test main menu option to open "Editing" menu form

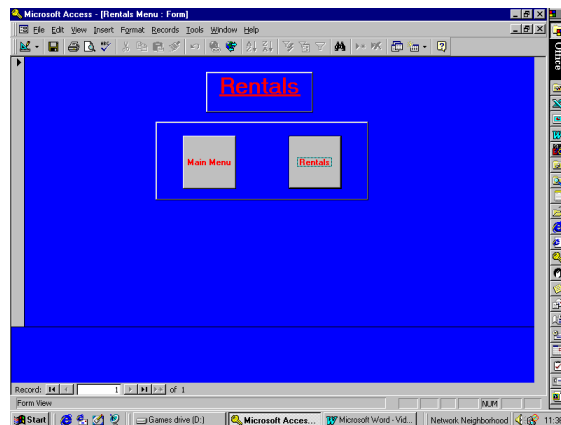
This test was successful as when you press the Editing button it opens up the data entry menu for customer staff and videos.



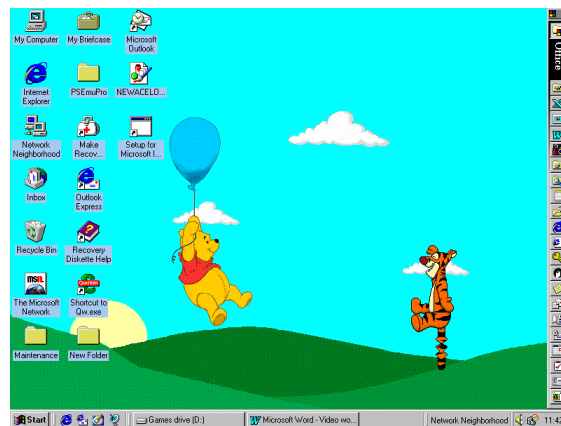
Test 3- Test main menu option to open "Reports" menu form
This test was successful as when you press the Reports button it opens up the reports menu.



Test 4- Test main menu option to open "Rentals" menu form
This test was successful as when you press the rentals button it opens the rentals menu.

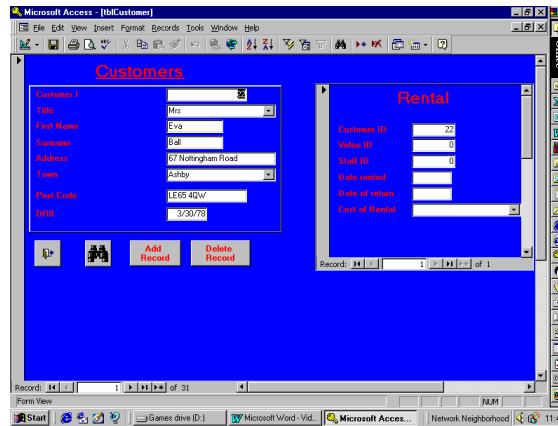


Test 5- Test main menu option to Exit database
This test was successful as when you press the Exit button the database closes.



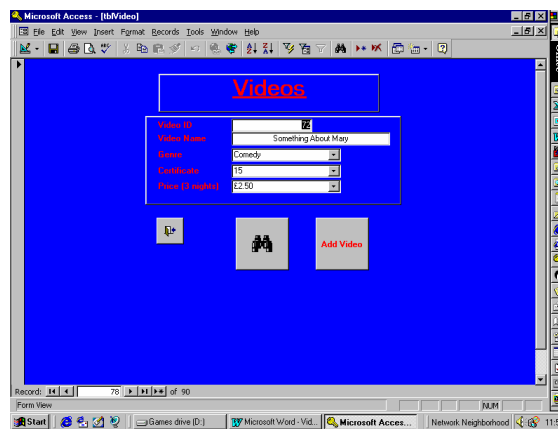
Test 6- Test editing option to open Customers form

This test was successful as when you press the customers button the customers input form opens.



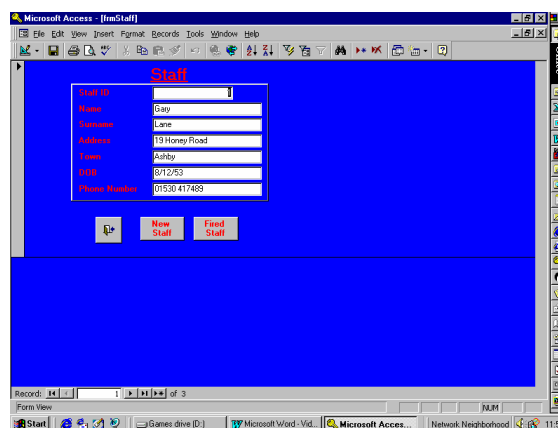
Test 7- Test editing option to open Videos form

This test was successful as when you press the videos button the videos input form opens.



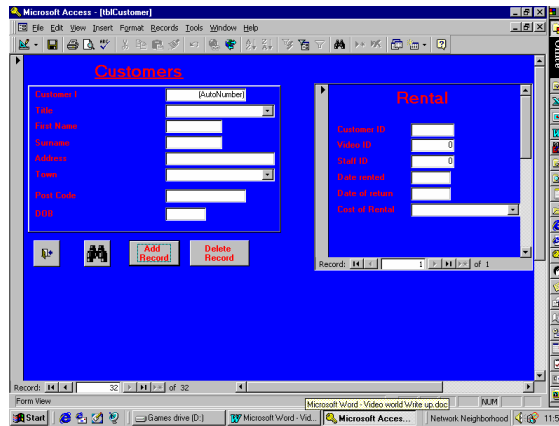
Test 8- Test editing option to open Staff form

This test was successful as when you press the staff button the staff input form opens.



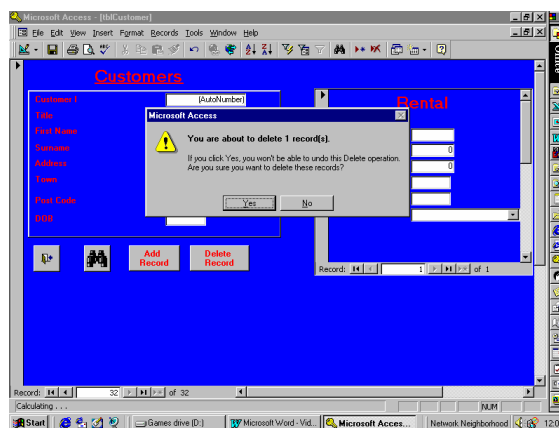
Test 9- Test add customer button in the customer form

This test was successful as when you press the add record button a new record appears.



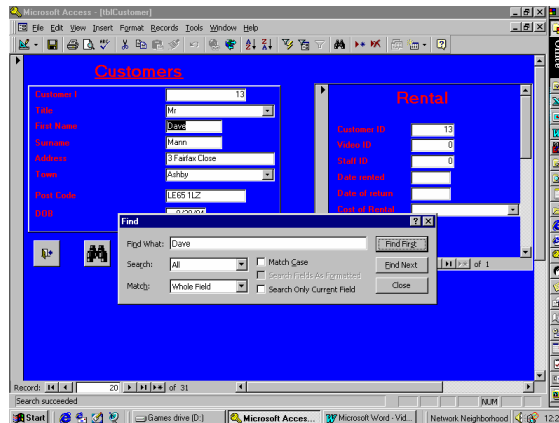
Test 10- Test delete customer button in the customer form.

This test was successful as when you press the delete record button the record selected is deleted.

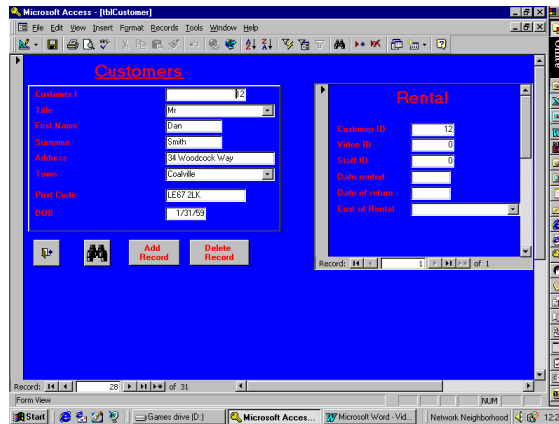


Test 11-Test Find button in customer form

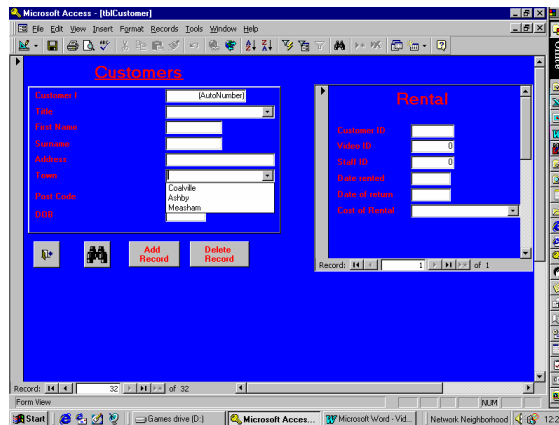
This test was successful as when I pressed the find button the find box appeared and the criteria selected was found .



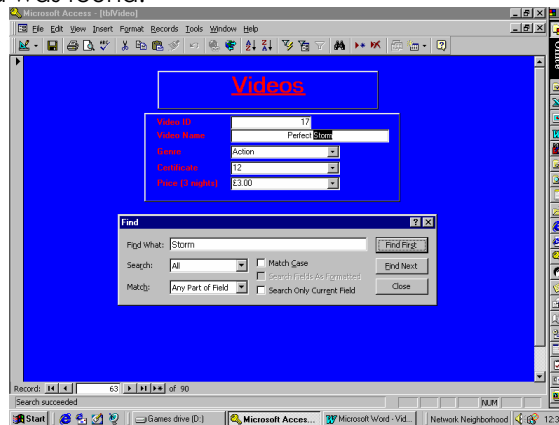
Test 12- Test relationships between customer form and rental subform.
 This test was successful as the Customer ID for the form was related to the subform's Customer ID.
 The customer had not rented out any videos so the other data is irrelevant.



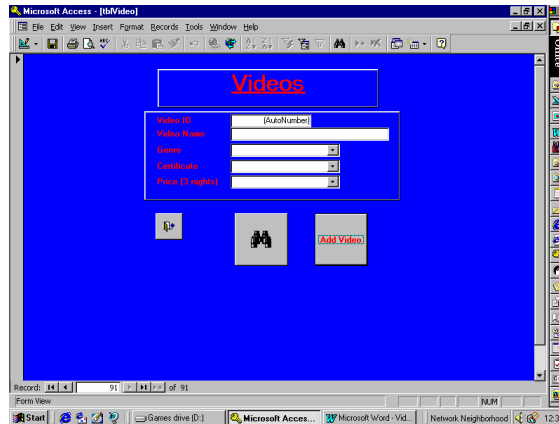
Test 13- Test customer form's combo boxes.
 This test was successful as when you press on the down arrow a list of titles and towns are available to choose from.



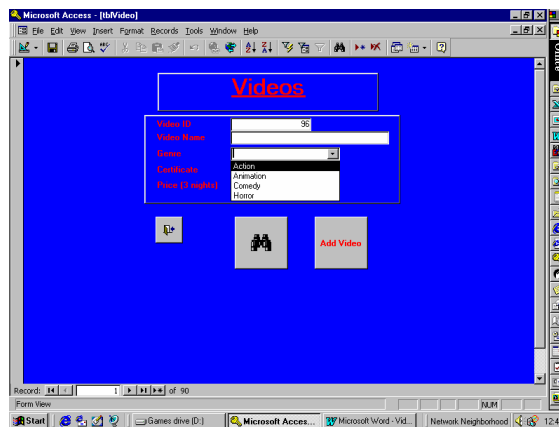
Test 14- Test video form's find button
 This test was successful as when I pressed the find button the find box appeared and the criteria selected was found.



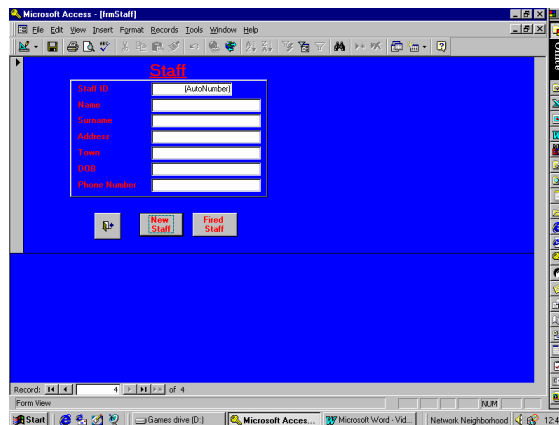
Test 15- Test the add video button in the video form.
This test was successful because when you press the add video button a new empty record is visible.



Test 16- Test the video form's combo boxes.
This test was successful because when you press on the a row of the combo box a list of genres certificates and prices are available.

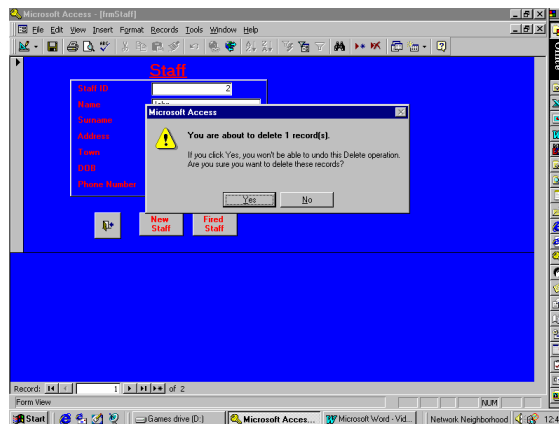


Test 17- Test the staff form's add staff button.
This test was successful as when you press the new staff button a new empty record is visible.



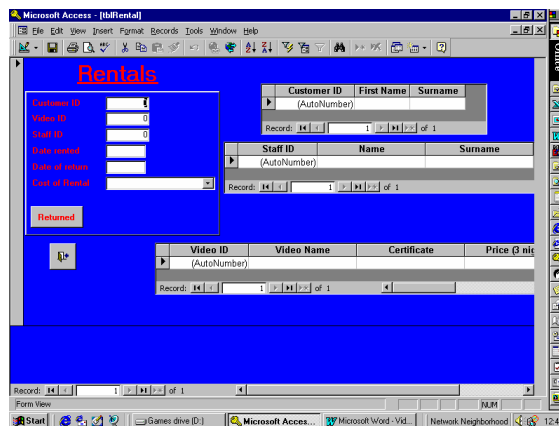
Test 18- Test the staff form's fired staff button

This test was successful as when you press the fired staff button the record selected is deleted.



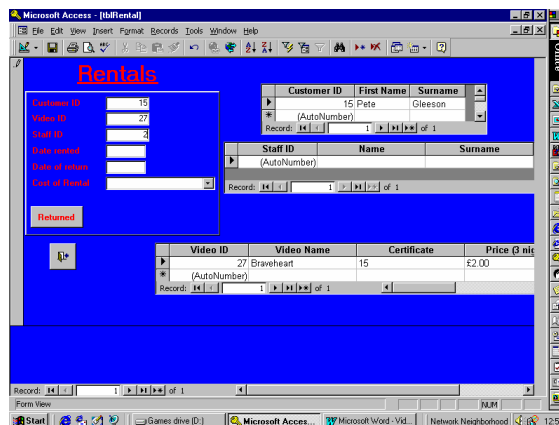
Test 19- Test the rentals button in the rentals menu.

This test was successful because when you press the button the rentals form opens.

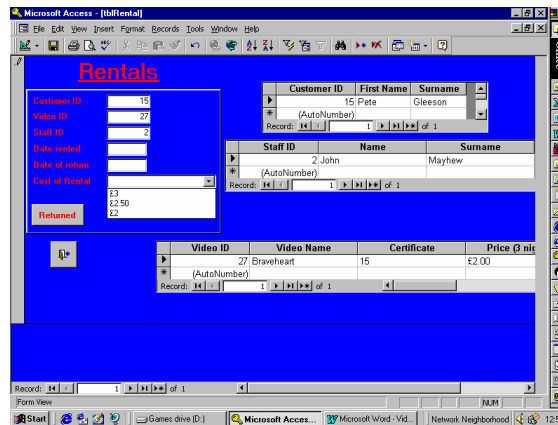


Test 20- Test the subform's relationships.

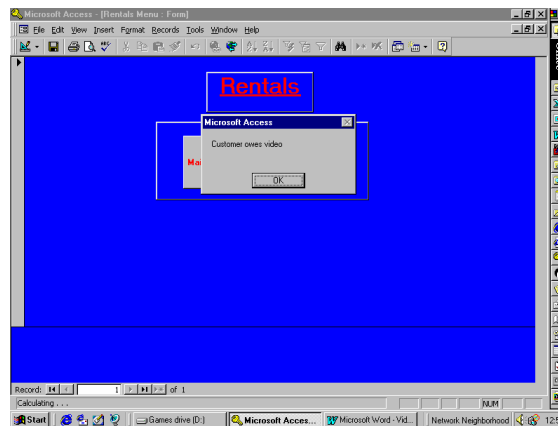
This test was successful because all the relevant subform IDs were related to the main form.



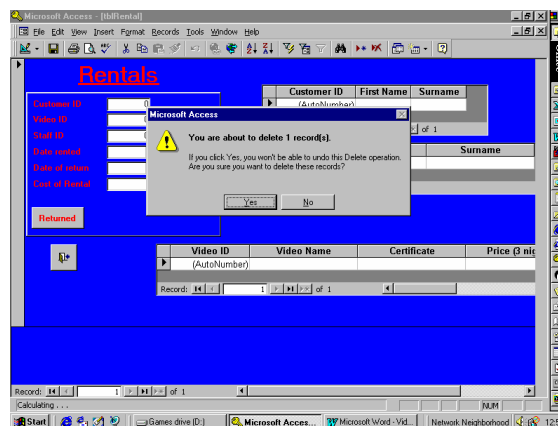
Test 21- Test the combo box for the price entity.
 This test was successful because when you click on the arrow a list of prices appears.



Test 22- Test macro Overdue
 This test was successful because when a video has not been returned by the date it is supposed to be, a message box appears.



Test 23- Test the returned button in the rentals form.
 This test was successful because when you press the button the record is deleted.



Test 24- Test all the menu options in the reports menu.

This test was successful because all of the reports opened. To see screenshots look at the reports section of the implementation section.

Test 25- Test all the back to main menu buttons.

This test was successful as all of the buttons worked correctly.

Test 26- Test recovery after power failure.

This test was successful as when there was a power failure only the current changes were lost.

Test 27- Acceptance test by end user.

This test was successful as he could do all of the necessary tasks without any trouble.

Evaluation

The system has been installed on the Video World computer where the end user works. The system was downloaded from floppy disk and was easily installed. The system has been stable since implementation.

Qualitative

Data entry should be as intuitive as possible.

The data entry forms are provided with combo boxes wherever possible to facilitate entry. The end user understands the fields that provide the rest of the data. The movement around each input screen is logical in progression. The colours, fonts and groupings have been chosen for easy use.

The input screens should be self-explanatory.

Due to the design features introduced such as combo boxes many of the input fields are obvious. The navigation around the input screens is fast and logical in progression. The use of logical text box object input names aids in the input of information

Data entry should be quick.

Most of the fields require only one word, which speeds the inputting process up. Also the combo boxes require only a click of a button. The design of the screens of general layout makes them easy to read and navigate quickly.

The mechanics of the application chosen should not be apparent to the user.

There is no need for the end user to go into the inner workings of the database. No obscure data formatting is required. Error messages make it obvious when input is of an incorrect type. The use of Menus which seamlessly blend, make navigation around the whole system intuitive.

A main menu should be loaded automatically when the database is loaded, and the whole system should be menu driven.

When the database is loaded the first screen is the main menu. This menu allows fast and efficient access to other menus. All of the menus are of similar design and layout. You are able to navigate through the whole database using only menu buttons.

Quantitative

It should be possible to rent a video without referring to video or member input screens.

By using combo boxes and sub forms supplying appropriate information, the input of rented videos is quick and easy.

It should be possible to input new videos, staff members, and customers in less than thirty seconds.

The average times to input are:

Videos	15 seconds
Staff	25 seconds
Customers	30 seconds.

These times have been verified by the end user who is a proficient user of a keyboard.

It should be possible to provide reports in less than 60 seconds in each of the following areas:

- Videos rented
- The staff that rented the videos out
- Staff currently employed
- Videos owned by the store
- Customer details

This has been achieved by using queries and also reports based upon these queries. The access times for these reports are very short indeed. The end user simply has to click on two buttons and the reports are generated.

Test Plan Results

All of my tests ran correctly and there were no problems.

Areas for Improvement and Development

In retrospect my Query "Late" should have been labelled "Rentals" and my "Fired Staff" button in my Staff form should be labelled "Delete Staff Member" because the staff may have left rather than being fired.

My rentals menu only has a button leading to the rental form and therefore has no purpose, I could have just had a button leading from the main menu to the rental form.

I should also have had a delete button for videos no longer held in stock.

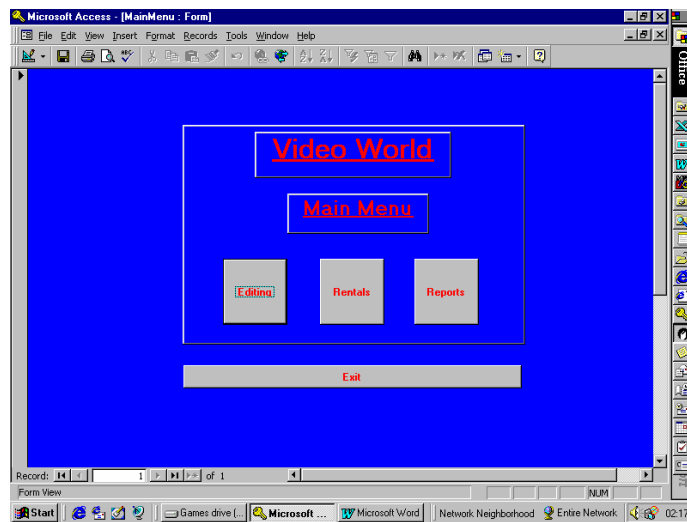
User Manual

Introduction

This database is for the keeping track of video rentals in a video shop. Features include the ability to keep track of customers, videos in stock and staff details. There is also the ability to keep track of when videos are due back and how much money is owed.

Getting Started

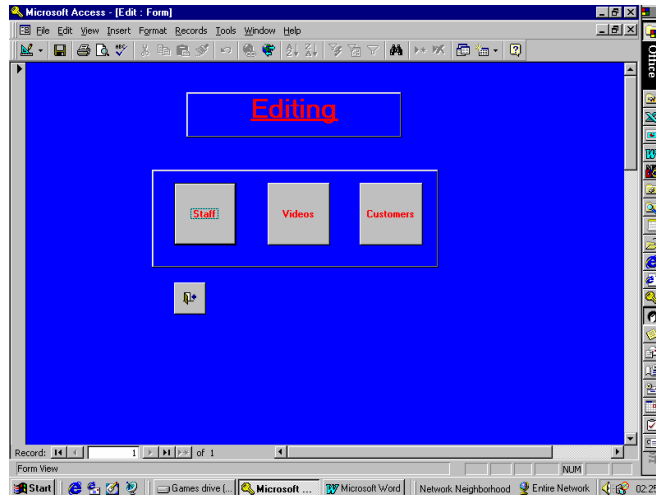
When the database is loaded, a password screen will come up. Enter the preset password, press the enter key and you will be taken to the main menu.



From here you can go to the edit data menu, the rentals menu and the reports menu. There is also an exit button to close the database.

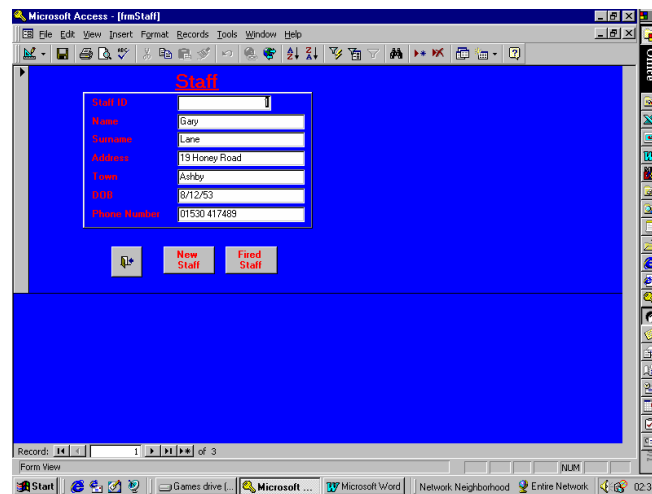
Editing Menu

From the main menu press the editing button. This will take you to the editing menu. From there you can see buttons for Staff, Video and Customer input forms. This menu is where you can input and edit the data for the database.



Staff Input Form

Press the staff button and you will be taken to the staff input form. In this form you can add and delete staff and also edit data.



To input your staff members into this form simply click on the new staff button.

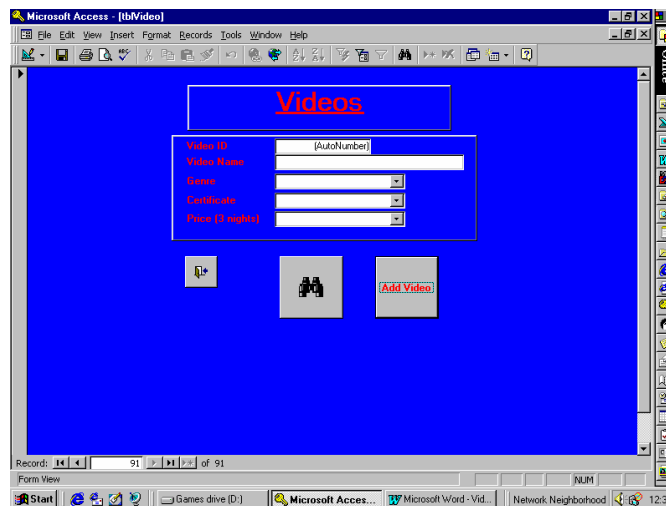
The data is easy to input all you have to do is put the relevant data into each attribute. You don't have to type in a staff ID because the database will do it for you.

To delete a staff member that no longer works for your company, click on the fired staff button. ▲ box will ask you if you are sure you want to delete that particular staff member, click yes.

To go back to the editing menu press on the button, with an open door with an arrow pointing to it (back button).

Video Input Form

From the editing menu press on the video button. You will be taken to the video input form. This is the form for adding the videos that your business owns.



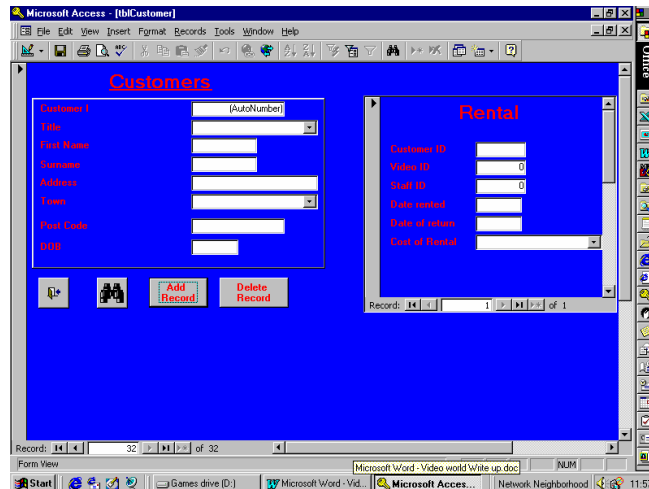
To add a video click on the add video button a new record will appear and you have to type in the video name. ▲s before the video ID will not have to be inputted as the computer will do it for you. For the price, certificate and genres there is a combo box that you can bring down and it will give you a list to choose from instead of you having to type it in.

▲After you have put in all of your videos you can search for a particular video by pressing on the binoculars button. ▲ box will appear asking what you would like to find, type in the word you would like to look for and the computer will find it. If the computer finds more than one you can click on next to see the next record it has found. Click the close button to exit the find box.

To go back to the editing menu click on the back button.

Customer Input Form

From the editing menu click on the customers button and you will be taken to the customers input form. From here you can add and delete customers, find customers and later you can see what videos that customer has rented.



You can add customers by clicking the add record button and then enter the data the same way in which you would add staff and videos. There are combo boxes for title and town to save time on inputting the data.

To delete a customer click the delete record button and a box will appear asking if you are sure you want to delete that customer, click yes.

When all the customers are added you can find specific ones by pressing on the binoculars button. A box will appear asking what you would like to find, type in the word you would like to look for and the computer will find it. If the computer finds more than one you can click on next to see the next record it has found. Press the close button to exit the find box.

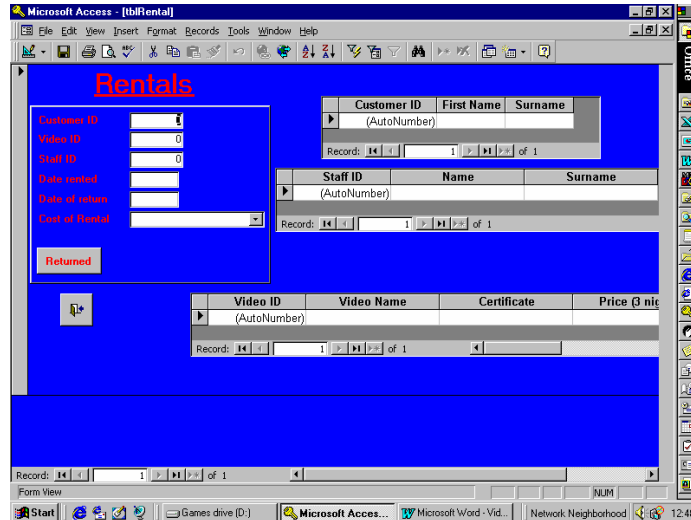
Also when a customer has rented a video out you can see which one from this form. Search for the customer you want to view and the rental subform will show you which video that person has rented.

To exit the form press the back button.

Rentals Form

From the main menu click on the rentals button, you will be taken to the rentals menu. Click on rentals again and you shall be taken to the rental form.

From this form you will be able to rent out the videos to customers.



To enter a rental you need to know the Staff ID, the Customer ID and the Video ID. Enter these ID numbers in the relevant attributes. To check if you have the right ID numbers the subforms will show the relevant data. Then enter today's date in the date rented entity. Then enter the date it is to be returned in the date of return entity. Enter the cost of rental in the relevant space, (if you are unsure of how much the video costs look in the video subform and it will tell you).

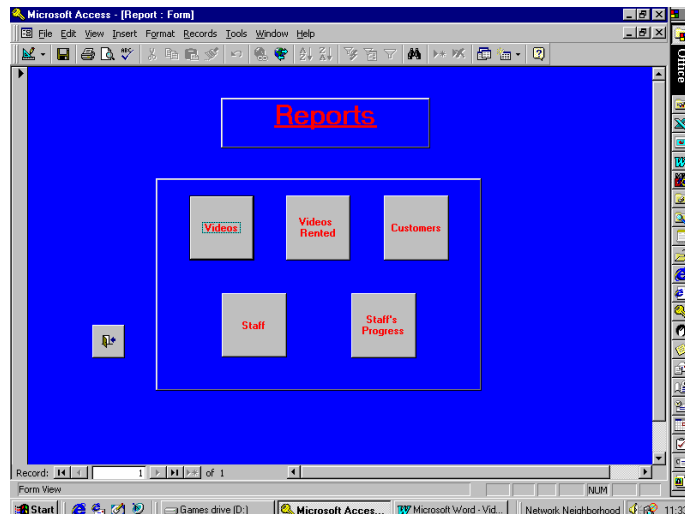
When a video is returned click on the returned button and the record will be deleted.

If the date passes the date of return a message box will appear saying that the person owes a video. Click OK on the box and it will disappear.

To go back into the rentals menu click on the back button.

Reports

From the main menu click on the reports button and you will be taken to the reports menu. From here you can view reports on videos, videos rented, customers, staff and staff's progress.



To view a report simply click on the button with the report you would like to see.

The Videos report shows all of the videos that you have entered in the video input form. It shows all the videos you own.

The videos rented report shows what videos are rented and who by. It also shows when the video was due back and the price of the rental.

The customer report shows a list of all the customers that are in the customer form.

The staff report shows the members of staff currently employed by your business.

The staffs progress shows what videos the staff have rented to people and when they served the customer.

To go back to the main menu press the back button.

Exiting

When you have finished using the database go to the main menu and click on the exit button.