

DATABASE ANALYSIS AND DATABASE DESIGN PROJECT
DVD LIBRARY FOR MOVING IMAGES

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ASSIGNMENT

Moving Images operates a DVD library. The library has a large number of titles, each title having at least one copy. Each title falls into a specific category some of these are adventure, thriller, fantasy, action or education. (There are others)

All titles are loan only to registered members of Moving Images. Information is kept about the members is only personal details including name, address and contact number.

Any titles overdue incur a surcharge of 50% of the loan fee.

As an employee of a software company, you are required to design a Relational Database for Moving Images. The client requires that information is stored so that they can maintain details of all of their DVD's, they wish to track loaned titles and check on overdue titles. They also require the facility to produce ad-hoc reports.

You need to use appropriate Data Analysis and Database Design Techniques to structure your data and build the database system. Notes must be made in all stages of the process from Analysis through to Implementation and Testing.

Learning Outcomes

Students will be able to:

1. **Design Small Databases**
 - 1.1 Apply data analysis and design techniques for a given context
 - 1.2 Verify that a design meets user requirements
 - 1.3 Use appropriate software to document designs
2. **Implement and use Databases**
 - 2.1 Use a variety of tools to convert logical designs to physical databases.
 - 2.2 Use and maintain data in a relational database system.

Tasks

1. Data Analysis and Database Design

(a) Produce a detailed data requirements specification for Moving Images.

(Learning outcome 1.1)

The requirement specification should enable you to identify the appropriate **entities, relationships between entities and the attributes** associated with the entities and relationship types. It must also include the features of the database which are defined as:

- Forms that include the ability to add, delete, edit all titles and membership details.
- Lists of titles/members according to stated criteria
- Report based on queries.

(b) Produce a short report **(Learning outcome 1.2)**

- **Verify** and **evaluate** that your design matches the requirements of the company and justify how each of the requirements is matched by your design

2. Data Modelling (Learning outcome 1.1 and 1.3)

Build a Conceptual Data Model of the system using Entity Relationship Modelling Techniques and produce the following:

- Draw an Entity Relationship Model (ERM) for the system showing cardinality using Chen notation for the above narrative.
- Produce a Logical Entity Relationship Model that resolves any cardinality or participation problems in the Conceptual Model
- Provide a database schema with detailed design and analysis notes demonstrating how data has been normalised to third normal form.
- Produce a Data Dictionary for three related entities showing the name, description, data type, field size, constraint and any default values for each attribute.

3. Implement and use Databases (Learning outcome 2.1 and 2.2)

Using Microsoft Access 97, 2000 or Xp to implement your database you must ensure that your database is robust and able to record information correctly. Validation should be used. The users should find the system easy and attractive to use. They should have the ability to produce ad-hoc queries and print out other reports with the confidence that they will be correct.

All data entry screens should be user friendly, which will include well laid out forms with titles, field names and concise instructions for entering data into multiple tables.

The database must be rigorously tested with specifically designed test data that demonstrates the effective use of validation and the resulting error

messages. You should have at least 20 records in all tables to ensure that the validation checks are effective.

The following activities must be performed:

- Design the tables and identify Primary and Foreign Keys
- Define the relationships between the tables
- Create suitable data entry forms
- Enter Test Data
- Create at least five relevant queries to interrogate the database
- Create and print reports that present a consistent and professional image which are accurate and complete

INTRODUCTION

I have been given the task to design a database for a company call Moving images.

Moving images is a company that rents out DVDs for their register member, each member can take a DVD and that information will be store in to the system until the DVD has been return.

REQUIREMENTS OF THE NEW SYSTEM

Moving images is a DVD shop (to rent DVDs), as we been informed the company is growing and so are the numbers of DVDs and the number of customers which means the staff need access to this information faster than before.

The management of Moving Images is requesting prototypes from different designers.

Database will allow the user to enter new and view existing information in to the system using Microsoft Access.

USER REQUIREMENTS

These are the specification for the system, what the user needs to get from the system

- Add new customer
- Edit customer's details
- Add new DVDs
- Edit DVDs' details
- Rent DVDs (only to register members)
- Track Loans
- Each DVD must have at least one copy. (Must have **DVD titles, actor director, producer, rating and category**)
- Different categories. (Must have **sci-fi, comedy, Action, education, foreign films, family and thriller**)
- DVDs can only be rented to register member. (must have **member name, address, and telephone number**)
- Surcharge must be applicable for DVDs that are return late. (50% **surcharge** of the original price, it could either be daily or as the total without counting how many days the DVD was late)

BOLD = POSSIBLE ENTITIES

ADVANTAGES OF COMPUTER BASED SYSTEM

There are many advantages of using a computerized system for Moving Images they are:

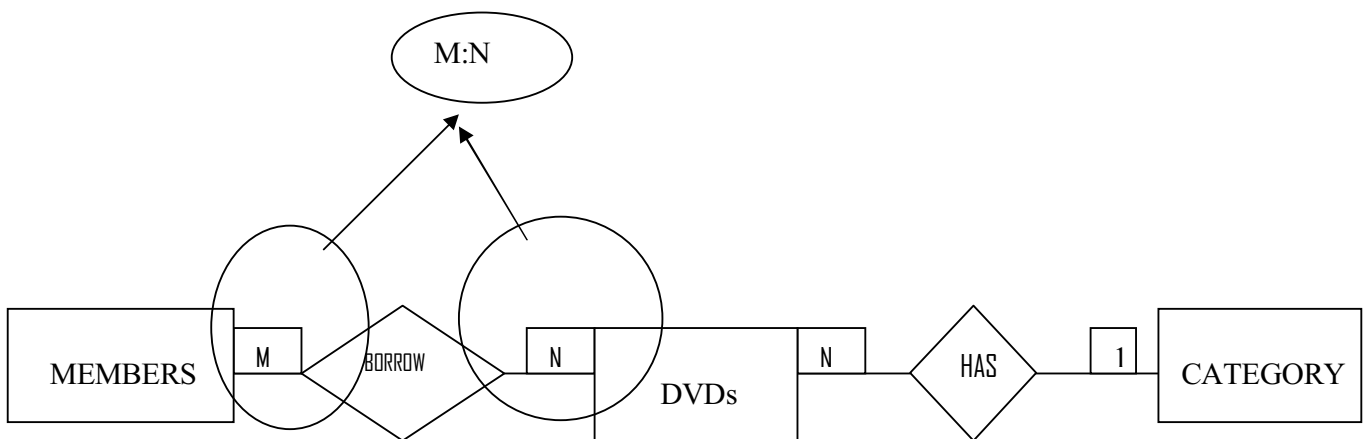
The files can be backed up, if the computer is affect by a virus or the system crashes or if there is a fire, then no all files will be lost .

It could be update or change more easily.

The files could be found more easily.

MOVING IMAGES DATABASE DESIGN**ENTITY RELATIONSHIP DIAGRAMS – CONCEPTUAL MODEL**

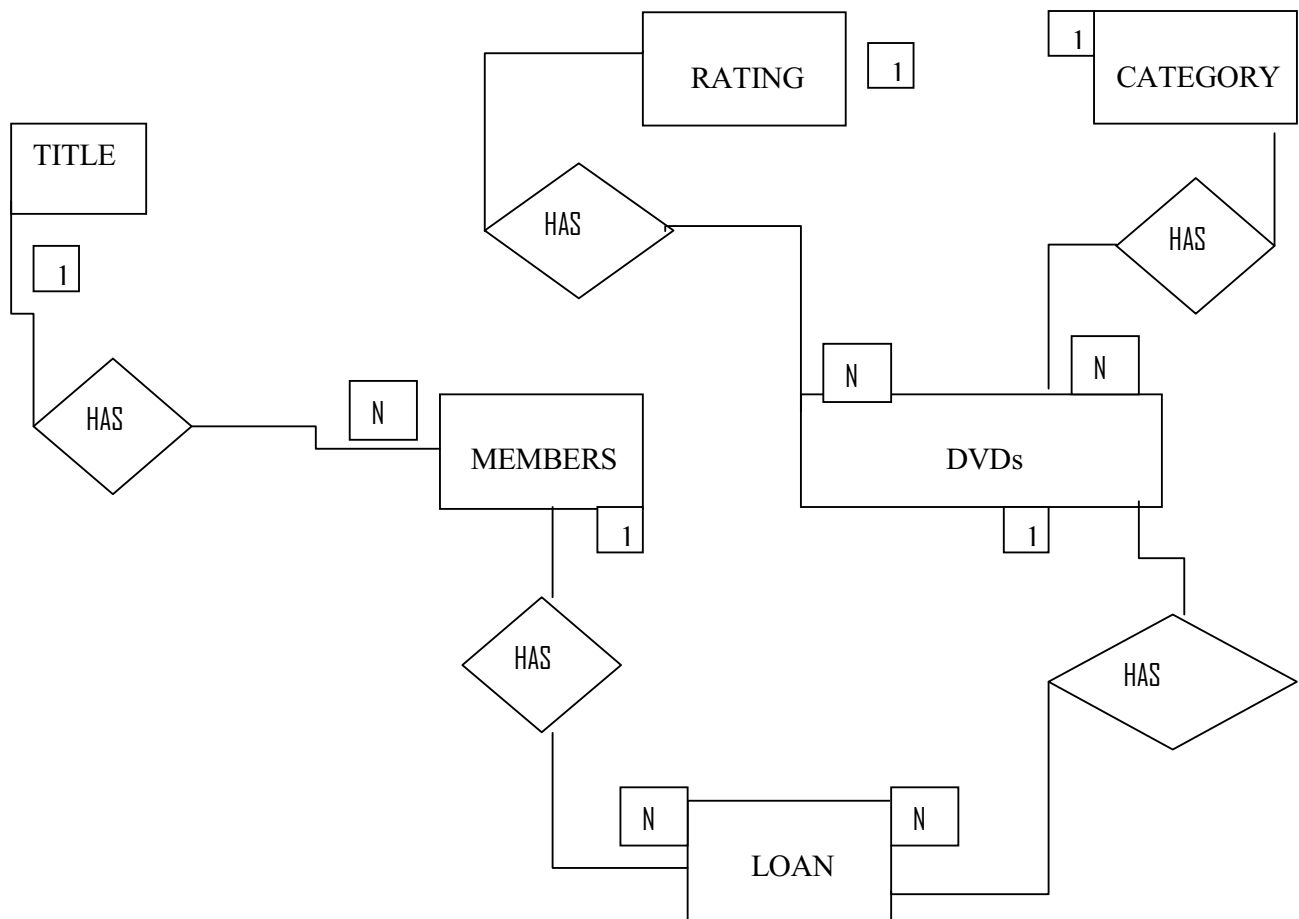
As we can see on the conceptual model below, there is a M:N relationship, a database cannot be create when there is a M:N relationship.



ENTITY RELATIONSHIP DIAGRAM – LOGICAL MODEL

On the logical model below, we can see that the M:N relationship is no longer on our diagram.

The way I solved this was by creating a intersection entity called loan, this table will have a primary key of its own and two foreign keys, one from the members table and the other one from the DVDs table that way the relationship between the three tables will be create.

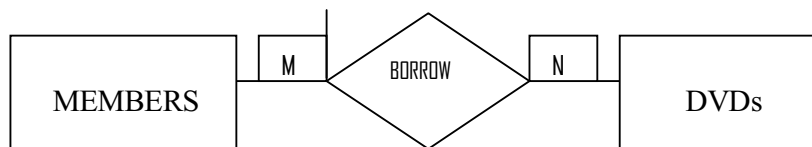


DATABASE SCHEME

UNF

MEMBERS: (MEMBER_ID , TITLE, F_NAME, M_NAME, L_NAME,
ADDRESS, COUNTY, POST_CODE CONTACT_#,
DATE_JOINING, EXPIRED_DATE)

DVDs: (DVD_ID, DVD_TITLE, DIRECTOR, ACTOR,
, PRODUCER)



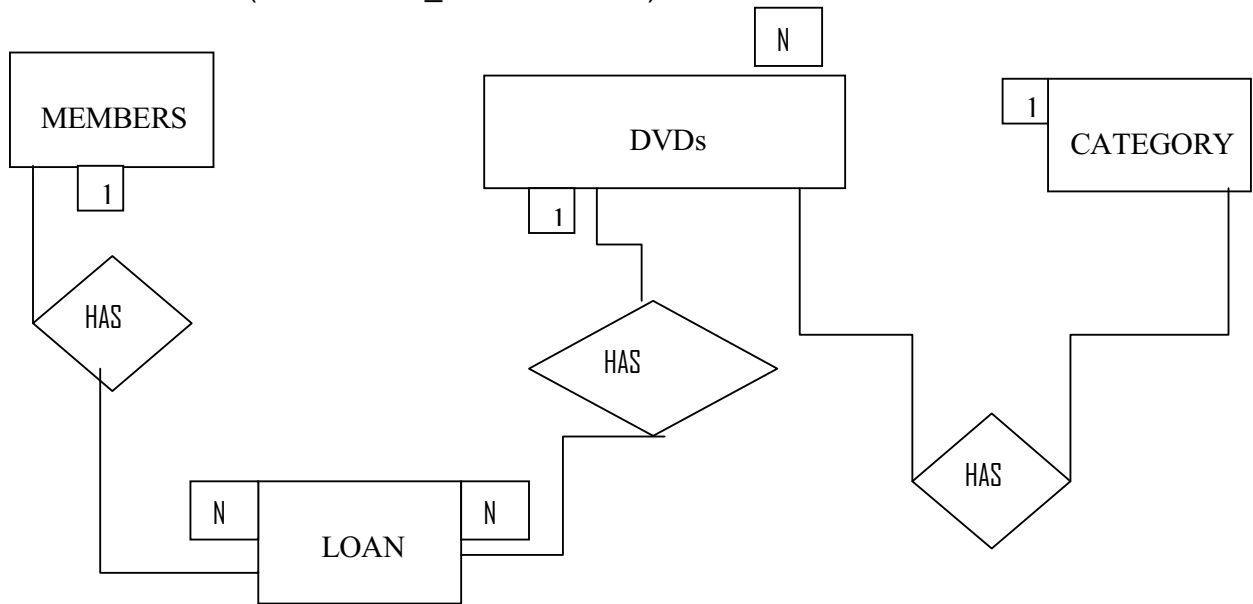
1NF

MEMBERS: (MEMBER_ID , TITLE, F_NAME, M_NAME, L_NAME,
ADDRESS, COUNTY, POST_CODE CONTACT_#,
DATE_JOINING, EXPIRED_DATE)

DVDs: (DVD_ID, DVD_TITLE, DIRECTOR,
CATEGORY_DESCRIPTION, RATING, PRODUCER)

LOANS: (LOAN_ID, MEMBER_ID, DVD_ID, QUANTITY, PRICE,
DATE_OUT, DATE_IN, DATE, SURCHARGE, DAYS_LATE,
TOTAL)

CATEGORY: (CATEGORY_DESCRIPTION)



2NF/3NF

MEMBERS: (MEMBER ID, TITLE, F_NAME, M_NAME, L_NAME,
ADDRESS, COUNTY, POST_CODE CONTACT_#,
DATE_JOINING, EXPIRED_DATE)

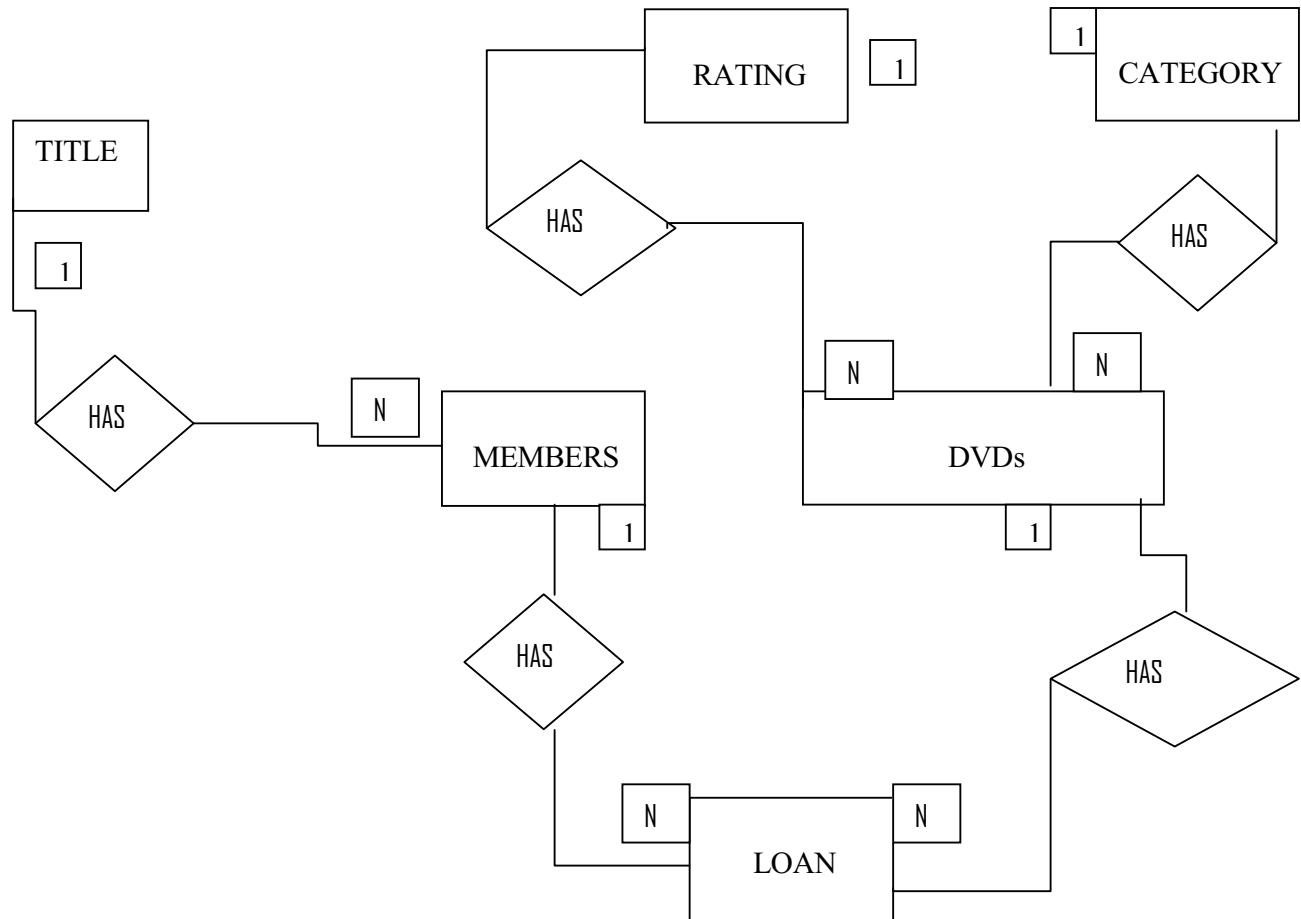
DVDs: (DVD ID, DVD_TITLE, DIRECTOR
,
CATEGORY_DESCRIPTION, RATING, PRODUCER)

LOANS: (LOAN ID, MEMBER ID, DVD ID, QUANTITY, PRICE,
DATE_OUT, DATE_IN, SURCHARGE, DAYS_LATE,
TOTAL)

TITLE: (TITLE)

CATEGORY: (CATEGORY DESCRIPTION)

RATING: (RATING)



MOVING IMAGES DATA DICTIONARY**MEMBERS TABLE**

ENTITY NAME	ATTRIBUTE NAME	ATTRIBUTE DESCRIPTION	FIELD SIZE	DEFAULT MODE	CONSTRAINS
MEMBERS	MEMBER_ID	UNIQUE MEMBER IDENTIFIER	AUTONUMBER (LONG INTEGER)		PRIMARY KEY (P.K)
	TITLE	CUSTOMER TITLE (MR, MRS)	TEXT (5)		FOREIGN KEY (F.K) FROM TITLE TABLE
	F_NAME	CUSTOMER FIRST NAME	TEXT (15)		
	M_NAME	CUSTOMER MIDDLE NAME	TEXT (15)		
	L_NAME	CUSTOMER LAST NAME	TEXT (15)		
	ADDRESS	CUSTOMER ADDRESS	TEXT (25)		
	COUNTY	LOCAL COUNTY	TEXT (10)		
	POST_CODE	ADDRESS POST CODE	TEXT (10)		
	CONTACT_#	HOME OR MOBILE NUMBER	TEXT (11)		
	DATE_JOINING	MEMBERSHIP JOIN DATE		DATE()	
	EXPIRED_DATE	MEMBERSHIP EXPIRED DATE		DATE() + 1460	

DVDs TABLE

ENTITY NAME	ATTRIBUTE NAME	ATTRIBUTE DESCRIPTION	FIELD SIZE	DEFAULT MODE	CONSTRAINS
DVDs	DVD_ID	UNIQUE DVD IDENTIFIER	AUTONUMBER (LONG INTEGER)		PRIMARY KEY (P.K)
	DVD_TITLE	DVD NAME	TEXT (30)		
	DIRECTOR	DIRECTOR NAME	TEXT (20)		
	ACTOR	ACTOR NAME	TEXT (25)		
	CATEGORY _DESCRIPTION	CATEGORY OF THE MOVIE	TEXT (15)		FOREIGN KEY (F.K) FROM CATEGORY TABLE
	RATING	MOVIE RATING	TEXT(2)		FOREIGN KEY (F.K) FROM RATING TABLE
	PRODUCER	COMPANY	TEXT (25)		
	COPIES	NUMBER OF COPIES	NUMBER		

LOANS TABLE

ENTITY NAME	ATTRIBUTE NAME	ATTRIBUTE DESCRIPTION	FIELD SIZE	DEFAULT MODE	CONSTRAINS
LOANS	LOAN_ID	UNIQUE LOAN IDENTIFIER	AUTONUMBER (LONG INTEGER)		PRIMARY KEY (P.K)
	MEMBER_ID	UNIQUE MEMBER IDENTIFIER	NUMBER (LONG INTEGER)		FOREING KEY (F.K) FROM MEMBER TABLE
	DVD_ID	UNIQUE DVD IDENTIFIER	NUMBER (LONG INTEGER)		FOREIGN KEY (F.K) FROM DVD TABLE
	QUANTITY	NUMBER OF DVDS TAKEN	NUMBER (SINGLE)	1	
	PRICE	COST OF THE RENT	CURRENCY	3	
	DATE_OUT	DVD TAKEN OUT		DATE()	
	DATE_IN	DVD RETURN		DATE()+1	
	TOTAL	TOTAL OF DVD RENT			

TITLE TABLE

ENTITY NAME	ATTRIBUTE NAME	ATTRIBUTE DESCRIPTION	FIELD SIZE	DEFAULT MODE	CONSTRAINS
TITLE	TITLE	CUSTOMER TITLE (MR, MRS)	TEXT (5)		PRIMARY KEY (P.K)

CATEGORY TABLE

ENTITY NAME	ATTRIBUTE NAME	ATTRIBUTE DESCRIPTION	FIELD SIZE	DEFAULT MODE	CONSTRAINS
CATEGORY	CATEGORY_DESCRIPTION	CATEGORY OF THE MOVIE	TEXT (15)		PRIMARY KEY (P.K)

RATING TABLE

ENTITY NAME	ATTRIBUTE NAME	ATTRIBUTE DESCRIPTION	FIELD SIZE	DEFAULT MODE	CONSTRAINS
RATING	RATING	MOVIE RATING	TEXT(2)		PRIMARY KEY (P.K)

IMPLEMENTATION

TABLES

This design will have six tables.

Members this is where all the customers personal information is going to be store.

DVDs this is where all the information about the DVDs will be store.

Loans this is where all the information about the loans will be store.

Title this is where the customers title will be store (Mr, mrs, miss).

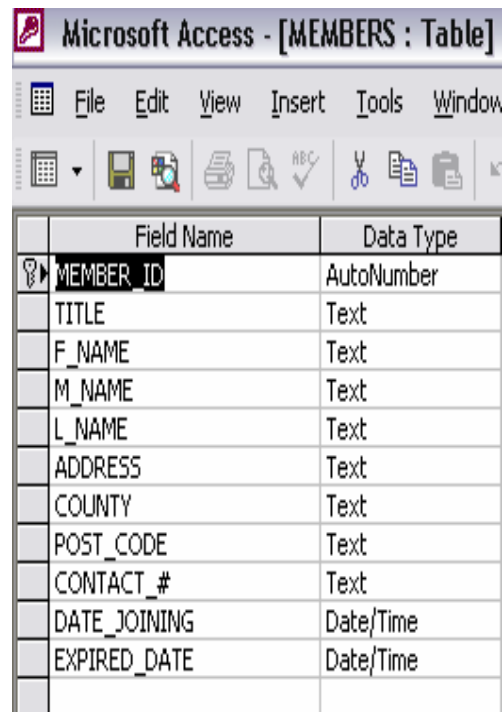
Category this where all the DVDs categories will be store (comedy, action).

Rating this is where the rating for each DVD will be store (12, 15, and 18)

MEMBERS TABLE

This table includes the following fields:

- ✓ MEMBER ID
- ✓ TITLE
- ✓ F_NAME
- ✓ M_NAME
- ✓ L_NAME
- ✓ ADDRESS
- ✓ COUNTY
- ✓ POST_CODE
- ✓ CONTACT_#
- ✓ DATE_JOINING
- ✓ EXPIRED_DATE



The screenshot shows the Microsoft Access interface for the 'MEMBERS' table. The table structure is displayed in a grid with two columns: 'Field Name' and 'Data Type'. The fields listed are MEMBER_ID (AutoNumber), TITLE (Text), F_NAME (Text), M_NAME (Text), L_NAME (Text), ADDRESS (Text), COUNTY (Text), POST_CODE (Text), CONTACT_# (Text), DATE_JOINING (Date/Time), and EXPIRED_DATE (Date/Time).

Field Name	Data Type
MEMBER_ID	AutoNumber
TITLE	Text
F_NAME	Text
M_NAME	Text
L_NAME	Text
ADDRESS	Text
COUNTY	Text
POST_CODE	Text
CONTACT_#	Text
DATE_JOINING	Date/Time
EXPIRED_DATE	Date/Time

To the right we can see a copy of the table on design view, most of field use the same data type, which is text, including the telephone number, the reason for this is because the numeric data type will not allow a leading zero as text data type will.

On members id the data type is autonumber, which is a numeric number automatically, generate by the system and the user has not control over it, and this is also the primary key as not other customer will have the same number.

Joining date and expire date are the same data type, but as we can see below the setting are very different.

On the joining date I used as default value Date() which means the actual day that is set in the computer, it will change as soon as the date on the computer changes.

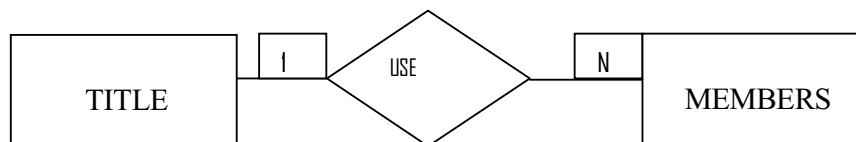
DATE_JOINING		Date/Time
General	Lookup	
Format	Short Date	
Input Mask		
Caption	JOINING DATE	
Default Value	Date()	
Validation Rule		

on the expired date the customer is given 1460 days or three years and the default value is Date()+1460 which means that it is the actual date plus 1460 days.

EXPIRED_DATE		Date/Time
General	Lookup	
Format	Short Date	
Input Mask		
Caption	EXPIRED DATE	
Default Value	Date()+1460	
Validation Rule		

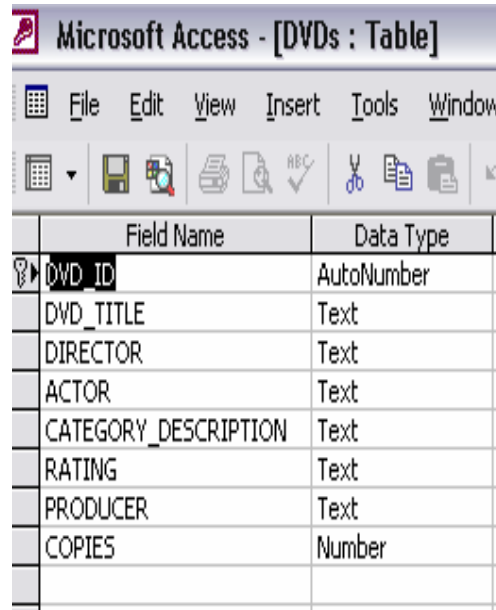
I also got a foreign key (title) this will crate the relationship between the title table and the customers table.

One title can be use by many customers



DVDs TABLE

- ✓ DVD_ID
- ✓ DVD_TITLE
- ✓ DIRECTOR
- ✓ ACTOR
- ✓ CATEGORY DESCRIPTION
- ✓ RATING
- ✓ PRODUCER
- ✓ COPIES



The screenshot shows the Microsoft Access interface for a table named 'DVDs'. The table structure is as follows:

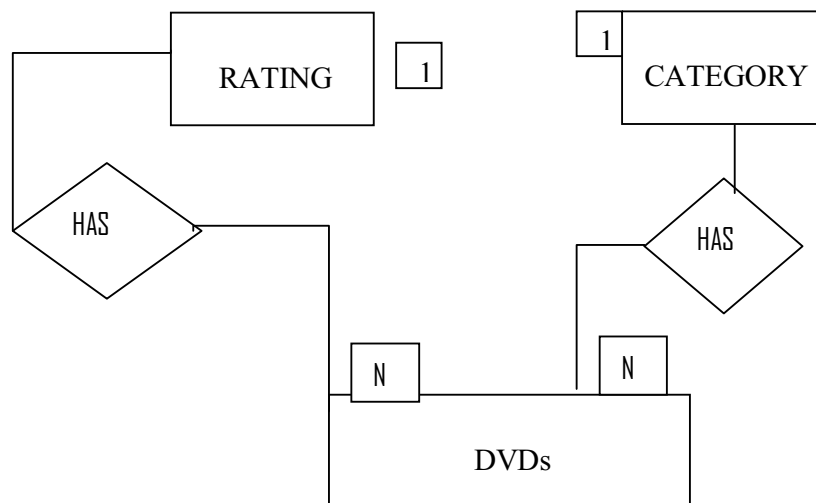
Field Name	Data Type
DVD_ID	AutoNumber
DVD_TITLE	Text
DIRECTOR	Text
ACTOR	Text
CATEGORY_DESCRIPTION	Text
RATING	Text
PRODUCER	Text
COPIES	Number

On the DVDs table I also used autonumber for DVD_ID because it becomes the unique identifier for that DVD and also becomes the primary key for this table.

I also have two foreign keys from different tables one foreign key is: category_description from the category table and the other one is rating from the rating table.

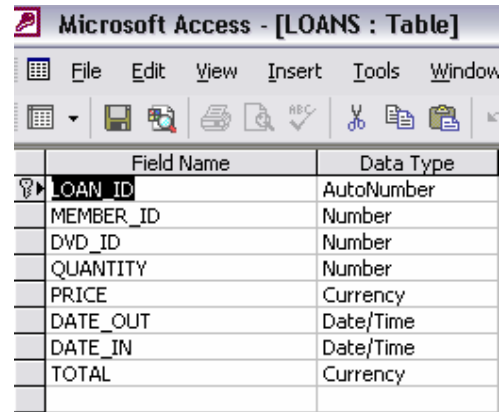
This two foreign keys will create the relationship between the three tables.

One rating can be use by many DVDs and many DVDs can use one category.



LOANS TABLE

- ✓ LOAN ID
- ✓ MEMBER ID
- ✓ DVD ID
- ✓ QUANTITY
- ✓ PRICE
- ✓ DATE_OUT
- ✓ DATE_IN
- ✓ TOTAL



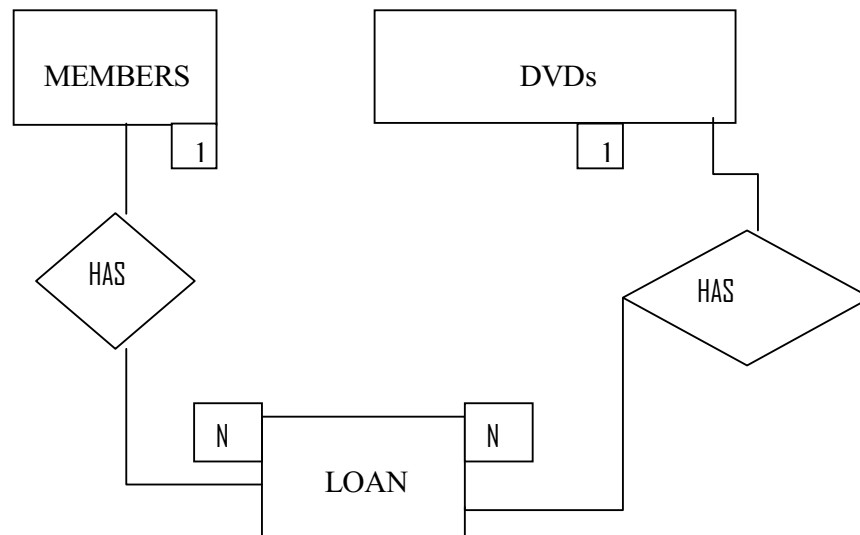
Microsoft Access - [LOANS : Table]

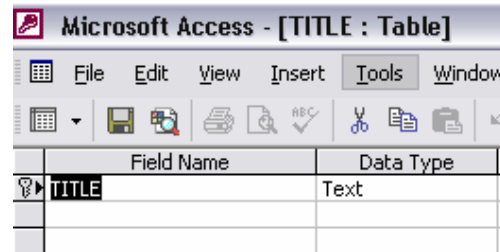
	Field Name	Data Type
PK	LOAN ID	AutoNumber
	MEMBER_ID	Number
	DVD_ID	Number
	QUANTITY	Number
	PRICE	Currency
	DATE_OUT	Date/Time
	DATE_IN	Date/Time
	TOTAL	Currency

In the loan table I used the autonumber for the loan id which will be unique and because is unique it will become the primary key for this table. The two foreign keys are member's id from members table and DVD id from the DVD table.

With this two foreign keys the relationship between the three tables will be possible

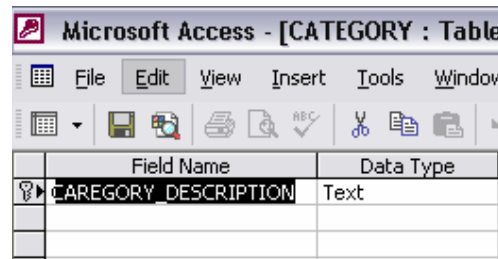
One member can take many loans and many loads can have one DVD.



TITLE TABLE✓ **TITLE**


Field Name	Data Type
TITLE	Text

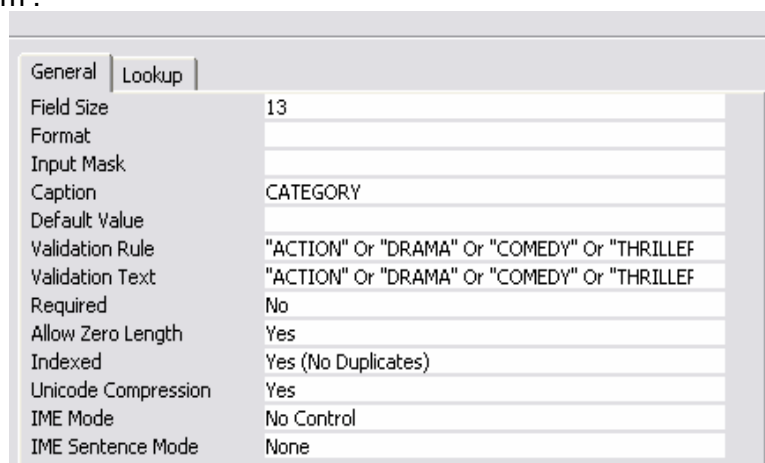
This table is only one field (title) and that title being the only one becomes the primary key of that table and the foreign key in the members table to create the relationship.

CATEGORY TABLE✓ **CATEGORY DESCRIPTION**


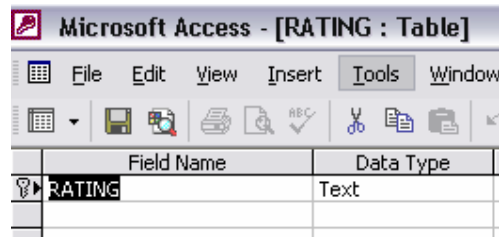
Field Name	Data Type
CATEGORY DESCRIPTION	Text

This table also has one field (category_description) and being the only one it becomes the primary key on this table and then becomes the foreign key on the DVD table to create the relationship between the two tables.

As we can see below I have use a validation rule so not other data can be enter onto the system .



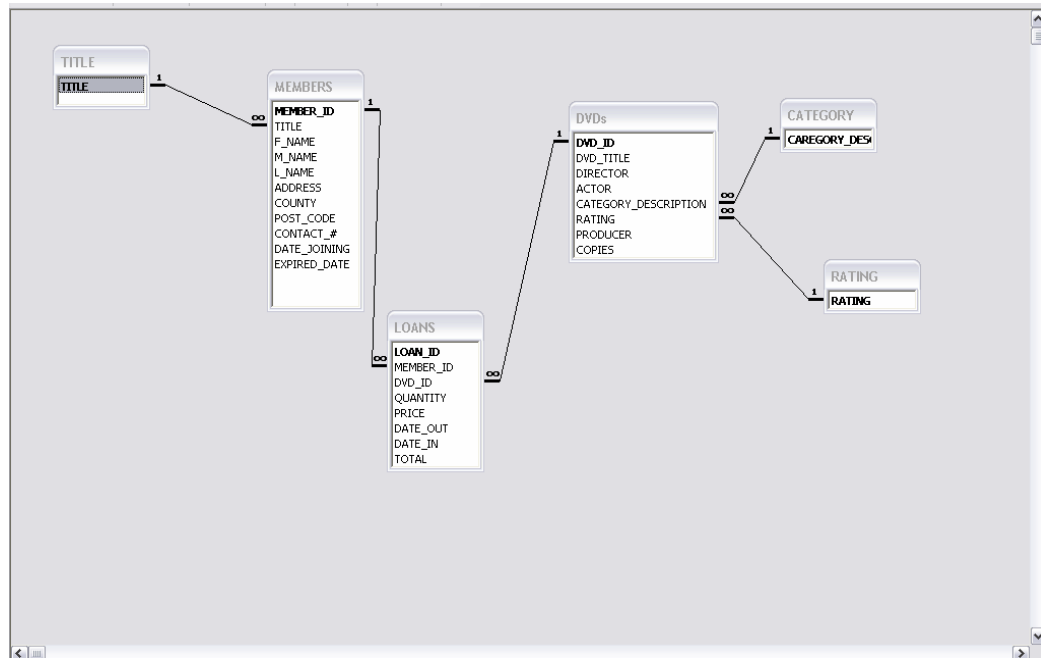
Property	Value
Field Size	13
Format	
Input Mask	
Caption	CATEGORY
Default Value	
Validation Rule	"ACTION" Or "DRAMA" Or "COMEDY" Or "THRILLEF
Validation Text	"ACTION" Or "DRAMA" Or "COMEDY" Or "THRILLEF
Required	No
Allow Zero Length	Yes
Indexed	Yes (No Duplicates)
Unicode Compression	Yes
IME Mode	No Control
IME Sentence Mode	None

RATING TABLE✓ **RATING**

The screenshot shows the Microsoft Access interface for a table named 'RATING'. The title bar reads 'Microsoft Access - [RATING : Table]'. The menu bar includes 'File', 'Edit', 'View', 'Insert', 'Tools', and 'Window'. Below the menu is a toolbar with various icons. The table structure is displayed in a grid with two columns: 'Field Name' and 'Data Type'. The first row shows a field named 'RATING' with a data type of 'Text'. A small key icon is visible to the left of the 'RATING' field name, indicating it is the primary key.

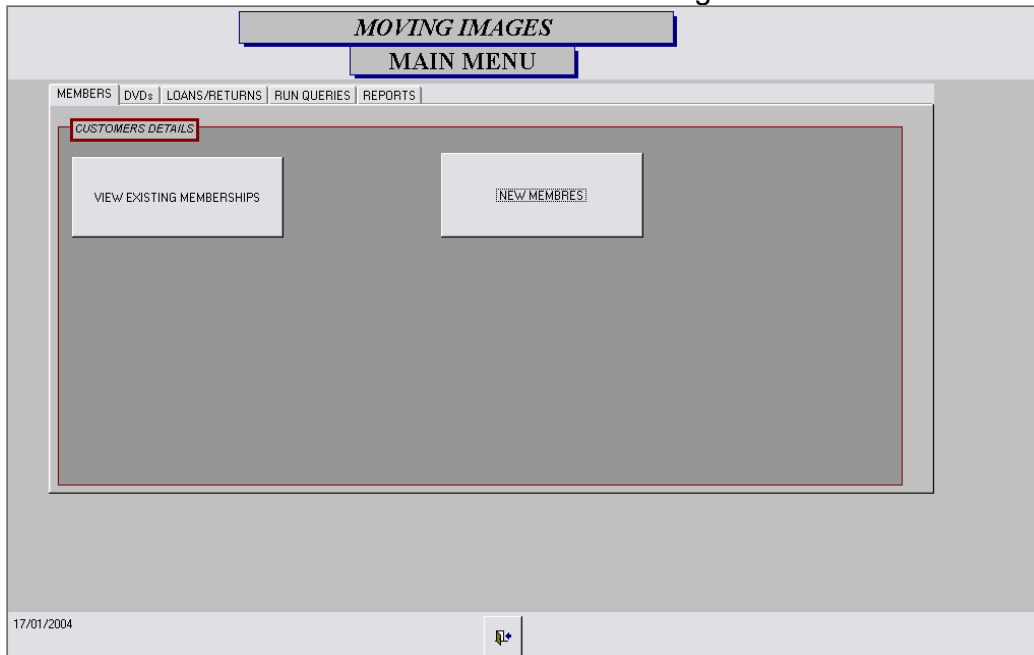
Field Name	Data Type
RATING	Text

On this table I also have only one field, which is rating , being the only one and like in all the other tables where I only got one field this will become the primary key on this table and the it will become the foreign key on the DVDs table to create the relationship between the tw o tables.

RELATIONSHIP BETWEEN THE TABLES

PROTOTYPES OF USER INTERFACE

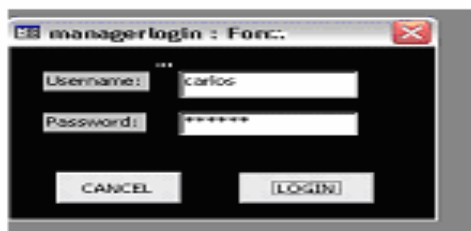
My design has several forms and they are divide in two. the ones where all the information can be edit and the others ones is where the user can enter new information without altering the information that is already store in the system, as we can see in picture 1.1 this form is the main form to enter new information and one of the commands is “edit existing information” .



PICTURE 1.1

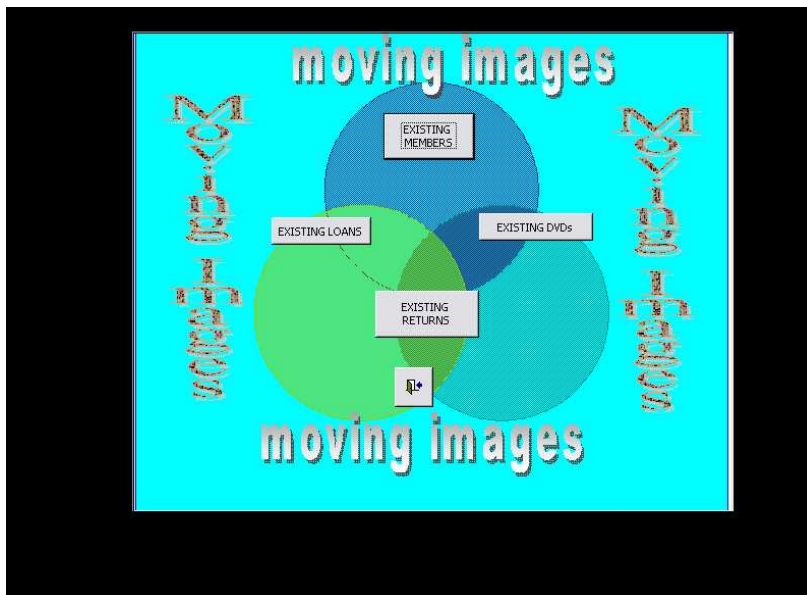
The command “edit existing information” is where the information for the managers is stored.

The reason for doing this is that only the manager will be able to edit any information that has already been stored in the system , so I achieve this by creating a username and password form and we can see in picture 1.2 .



PICTURE 1.2

After the username and password has been enter the manager or the person in charge will be able to enter the second form where all the information can be edit or erase, as we can see in picture 1.3



.PICTURE 1.3

On my design, each DVD has multiples copies and each DVD belongs to a category and rating.

On the loans form in the managers menu we are able to see which DVDs has not been return and how much the sur charge is.

On the member form (manager's menu), we can see all the details of the customer and their personal information.

On the DVD table on the manager's menu, we can see all the detail of the DVDs that we currently have in Moving Images .

VERIFYING AND EVALUATING MY DESIGN

MOVING IMAGES

Moving Images operates a DVD library. The library has a large number of titles, each title having at least one copy. Each title falls into a specific category some of these are adventure, thriller, fantasy, action or education. (There are others)

All titles are only loaned to registered members of Moving Images. Information is store on members personal details including name, address and contact number.

Any titles overdue incur a surcharge of 50% of the loan fee.

As an employee of a software company I am required to design a Relational Database for Moving Images. The client requires that information is stored so that they can maintain details of all of their DVD's, they wish to track loaned titles and check on overdue titles. They also require the facility to produce ad-hoc reports.

You need to use appropriate Data Analysis and Database Design Techniques to structure your data and build the database system. Notes must be made in all stages of the process from Analysis through to Implementation and Testing.

POINTS TO REMEMBER

- Design for DVD library.
- Each title must have a least one copy.
- Each title must have a category
- Only registry members can loan DVDs
- Must keep records of all members.

If a DVD is return late, a late surcharge must be applicable.

TESTING BUTTONS

Here I am testing all the buttons, this command buttons are the one the user is going to use to move from form to form o to make any kind of queries or report

FROM	TO	WORKED	
MAIN MENU	VIEW EXISTING MEMBERS	YES	MANAGER LOGIN BOX COMES UP
MAIN MENU	NEW MEMBERS	YES	
MAIN MENU	EXISTING DVDs	YES	MANAGER LOGIN BOX COMES UP
MAIN MENU	NEW DVDs	YES	
MAIN MENU	LOANS / RETURNS	YES	
MAIN MENU	EXISTING LOANS	YES	MANAGER LOGIN BOX COMES UP
MAIN MENU	LOAN QUERY	YES	
MAIN MENU	MEMBERS QUERY	YES	
MAIN MENU	DVD QUERY	YES	
MAIN MENU	RUN QUERIES	YES	
MAIN MENU	MEMBERS REPORT	YES	
MAIN MENU	LOANS REPORT	YES	
MAIN MENU	DVDs REPORT	YES	

FROM	TO	WORKED	
EXISTING / NEW MEMBERS FORM	NAVIGATION BUTTON	YES	
EXISTING / NEW MEMBERS FORM	EXIT	YES	
EXISTING / NEW MEMBERS FORM	DELETE RECORD	YES	MESSAGE BOX COMES UP

FROM	TO	WORKED
MANAGER LOGIN	MANAGER FORM	YES
MANAGER LOGIN	CANCEL	YES

FROM	TO	WORKED	
NEW / EXISTING DVDs FORM	NAVIGATION BUTTONS	YES	
NEW / EXISTING DVDs FORM	MAIN MENU	YES	
NEW / EXISTING DVDs FORM	EXIT	YES	

FROM	TO	WORKED	
LOANS RETURN	NAVIGATION BUTTONS	YES	
LOANS RETURN	DVD RETURN	YES	MESSAGE BOX COMES UP
LOANS RETURN	DVD RENTED	YES	MESSAGE COMES UP
LOANS RETURN	FIND RECORD	YES	MESSAGE BOX COMES UP
LOANS RETURNS	MAIN MENU	YES	
EXISTING LOANS	NAVIGATION BUTTONS	YES	
EXISTING LOANS	DVD RETURN	YES	MESSAGE BOX COMES UP
EXISTING LOANS	DVD RENTED	YES	MESSAGE COMES UP
EXISTING LOANS	FIND RECORD	YES	MESSAGE BOX COMES UP
EXISTING LOANS	MAIN MENU	YES	

FROM	TO	WORKED	
RUN QUERY	MEMBER QUERY	YES	MESSAGE BOXES FOR QUERY PARAMETER COMES UP.
RUN QUERY	DVD QUERY	YES	MESSAGE BOXES FOR QUERY PARAMETER COMES UP.
RUN QUERY	LOANS QUERY	YES	MESSAGE BOXES FOR QUERY PARAMETER COMES UP.
RUN QUERY	EXIT	YES	
RUN QUERY	MANAGERS MENU	YES	LOGIN FORM COMES UP
RUN QUERY	MAIN MENU	YES	

TESTING THE QUERIES**➤ LOANS QUERY**

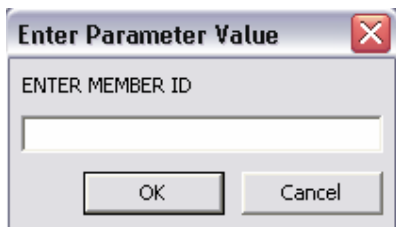
I am going to test all the queries to make sure that all of them are working properly.

I am going to start with the loans query, o this query we will retrieve from the system all the information on the DVDs that are on loan a this moment.

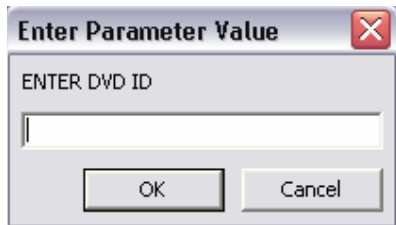
I have set up two parameter for the search of this query, one of them is for the member id and the other one if for the DVD id.

The set up the parameter all I did was write this following criteria on the criteria option on the query:

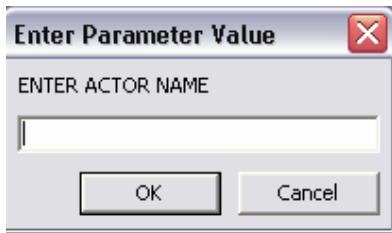
Like "*" & [enter member id] & "*"

A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a close button (X) in the top right corner. The text "ENTER MEMBER ID" is displayed above a single-line text input field. Below the input field are two buttons: "OK" and "Cancel".

like "*" & [enter DVD id] & "*"

A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a close button (X) in the top right corner. The text "ENTER DVD ID" is displayed above a single-line text input field. Below the input field are two buttons: "OK" and "Cancel".

like "*" & [enter actor name] & "*"

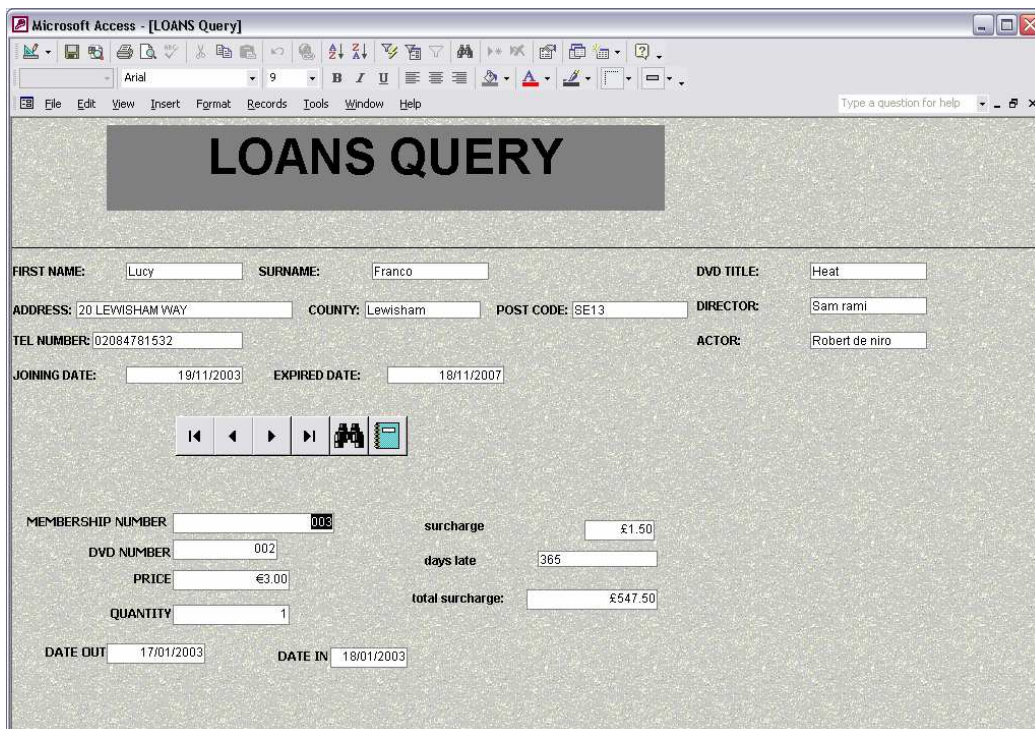
A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a close button (X) in the top right corner. The text "ENTER ACTOR NAME" is displayed above a single-line text input field. Below the input field are two buttons: "OK" and "Cancel".

Like "*" & [enter DVD title] & "*"



A small dialog box titled "Enter Parameter Value" with a close button (X) in the top right corner. Inside the dialog, there is a text label "ENTER DVD TITLE" above a single-line text input field. At the bottom of the dialog, there are two buttons: "OK" and "Cancel".

This is the interface that the user will be able to see after the parameter for the query has been entered.



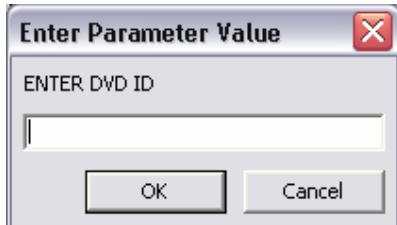
A screenshot of the Microsoft Access application window titled "Microsoft Access - [LOANS Query]". The window features a standard menu bar (File, Edit, View, Insert, Format, Records, Tools, Window, Help) and a toolbar. The main area has a title "LOANS QUERY" in a large, bold, black font. Below the title, there is a form with various input fields and labels. The fields are organized into two columns. The left column contains: FIRST NAME: Lucy, SURNAME: Franco, ADDRESS: 20 LEWISHAM WAY, COUNTY: Lewisham, POST CODE: SE13, TEL NUMBER: 02084781532, JOINING DATE: 19/11/2003, EXPIRED DATE: 18/11/2007, MEMBERSHIP NUMBER: 0008, DVD NUMBER: 002, PRICE: €3.00, QUANTITY: 1, DATE OUT: 17/01/2003, and DATE IN: 18/01/2003. The right column contains: DVD TITLE: Heat, DIRECTOR: Sam rami, ACTOR: Robert de niro, surcharge: £1.50, days late: 365, and total surcharge: £547.50. A set of navigation buttons (back, forward, search, etc.) is located in the center of the form.

➤ DVDs QUERY

On the query for the DVDs, I used four different parameter of criteria to search if none of the criteria is enter then it will displays all the DVDs on the system.

Here is asking for the DVD id and I set up this parameter by written this on the criteria:

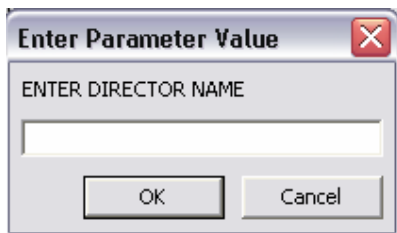
Like "*" &[enter DVD id]& "*"

A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a close button (X) in the top right corner. The text "ENTER DVD ID" is displayed above a single-line text input field. Below the input field are two buttons: "OK" and "Cancel".

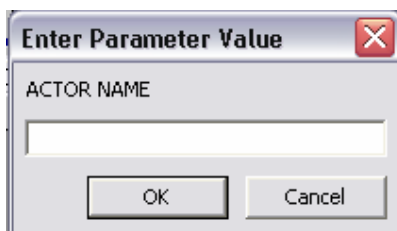
like "*" &[enter DVD title]& "*"

A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a close button (X) in the top right corner. The text "ENTER DVD TITLE" is displayed above a single-line text input field. Below the input field are two buttons: "OK" and "Cancel".

like "*" &[enter director name]& "*"

A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a close button (X) in the top right corner. The text "ENTER DIRECTOR NAME" is displayed above a single-line text input field. Below the input field are two buttons: "OK" and "Cancel".

like "*" &[enter actor name]& "*"

A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a close button (X) in the top right corner. The text "ACTOR NAME" is displayed above a single-line text input field. Below the input field are two buttons: "OK" and "Cancel".

This is the interface that the user will see after the search for the query has been finished.

DVD NUMBER	DVD TITLE	DIRECTOR	ACTOR	CATEGORY	RATING	PRODUCER	COPIES
001	Showtime	Sam rami	Robert de niro	Comedy	12	Warner	4
002	Heat	Sam rami	Robert de niro	Action	12	Warner	3
003	The one	Jet li	Jet li	Action	12	Walt	19
004	Romeo must die	Jet li	Jet li	Action	12	Walt	19
005	Minority report	Steven spielberg	Tom cruise	SCI-FI	15	Warner	20
006	Top gun	Steven spielberg	Tom cruise	Action	15	Warner	20
007	Y tu mama tambien	Diego luna	Gael garcia	Foreign films	18	Mexican pictur	20
008	Amore perros	Diego luna	Gael garcia	Foreign films	18	Mexican pictur	20
009	Spiderman	Stan lee	Tobey maguire	SCI-FI	PG	Warner	20
010	Lord of the rings	Stan lee	Tobey maguire	SCI-FI	PG	Warner	20
011	The last castle	Robert bedford	Robert bedford	Drama	15	Warner	20
014	Mission implosible	Jong lee	Tom cruise	Action	15	Warner	20
022	Scarface	Robert the niro	Al pacino	Action	18	Paramount	20
025	Gans of new york	Francis coppola	Leonardo dicaprio	Action	15	Warner	20

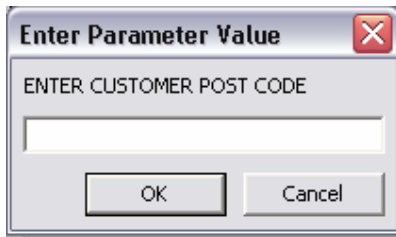
➤ MEMBERS QUERY

On the members query I have set up three different parameters to allow the user easier access to the information they may need.

Like "*" & [enter member id] & "*"

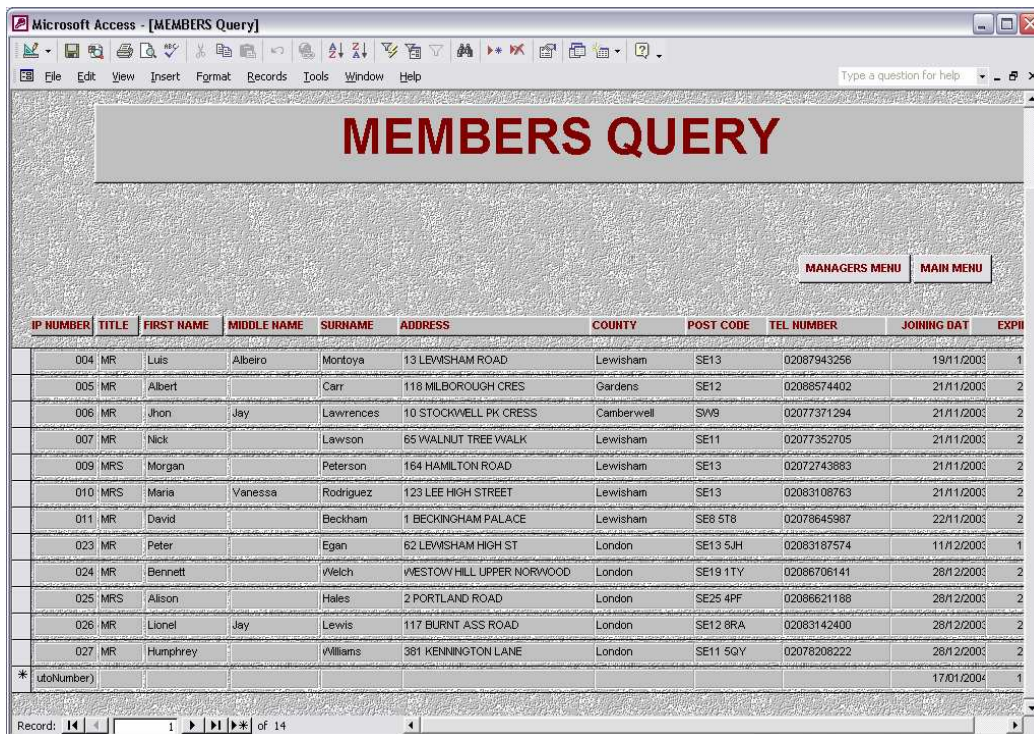
like "*" & [enter customer id] & "*"

like "*" & [enter customer post code] & "*"



A dialog box titled "Enter Parameter Value" with a close button (X) in the top right corner. Inside the dialog, the text "ENTER CUSTOMER POST CODE" is displayed above a text input field. Below the input field are two buttons: "OK" and "Cancel".

This is the user interface:

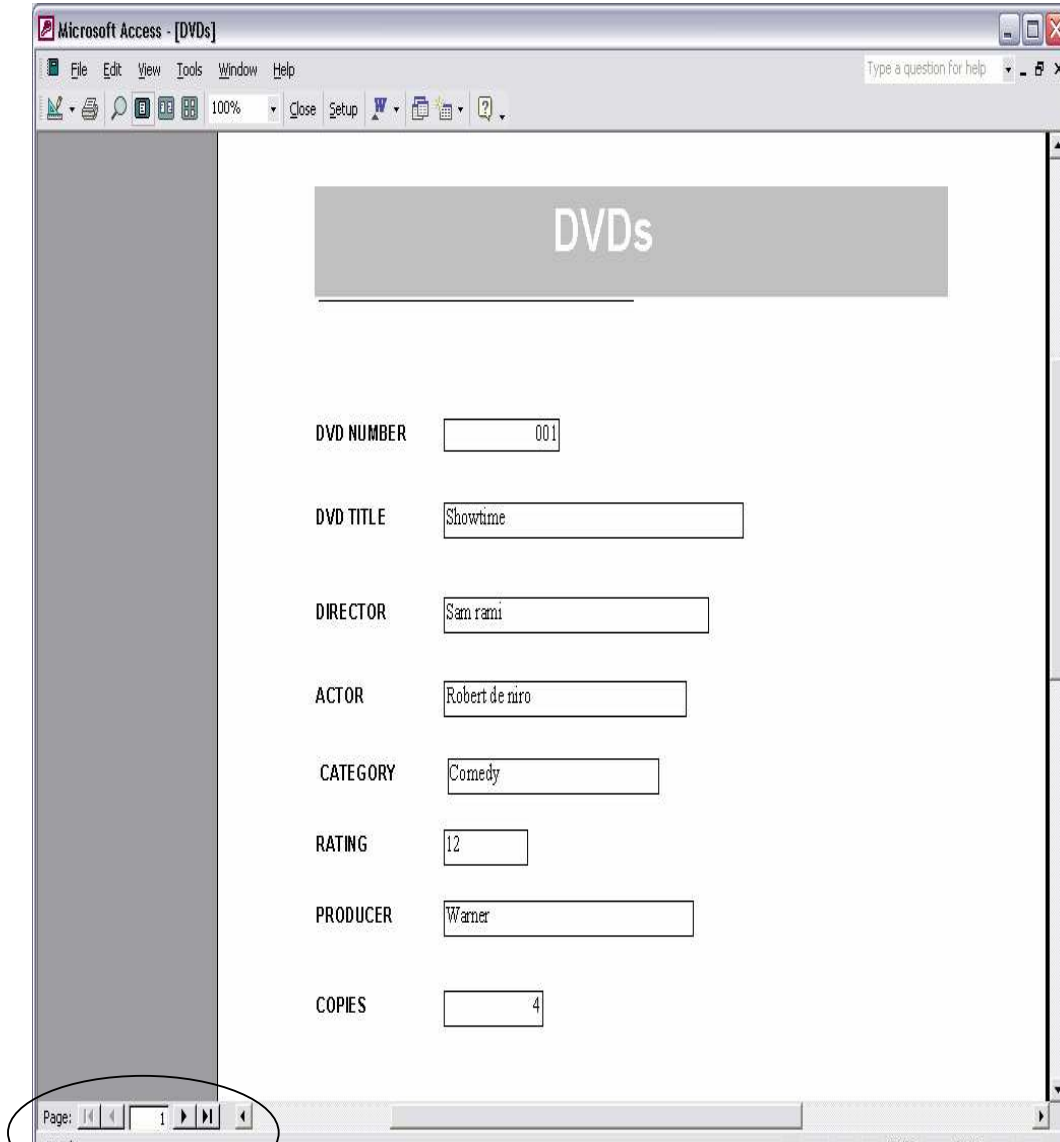


A screenshot of the Microsoft Access application window titled "Microsoft Access - [MEMBERS Query]". The window displays a table named "MEMBERS QUERY" with the following columns: IP NUMBER, TITLE, FIRST NAME, MIDDLE NAME, SURNAME, ADDRESS, COUNTY, POST CODE, TEL NUMBER, JOINING DAT, and EXPI. The table contains 14 records. At the bottom of the window, there is a status bar showing "Record: 1 of 14".

IP NUMBER	TITLE	FIRST NAME	MIDDLE NAME	SURNAME	ADDRESS	COUNTY	POST CODE	TEL NUMBER	JOINING DAT	EXPI
004	MR	Luis	Albeiro	Montoya	13 LEWISHAM ROAD	Lewisham	SE13	02087943256	19/11/2003	1
005	MR	Albert		Carr	118 MILBOROUGH CRES	Gardens	SE12	02088574402	21/11/2003	2
006	MR	Jhon	Jay	Lawrences	10 STOCKWELL PK CRESS	Camberwell	SW9	02077371294	21/11/2003	2
007	MR	Nick		Lawson	65 WALNUT TREE WALK	Lewisham	SE11	02077352705	21/11/2003	2
009	MRS	Morgan		Peterson	164 HAMILTON ROAD	Lewisham	SE13	02072743883	21/11/2003	2
010	MRS	Maria	Vanessa	Rodriguez	123 LEE HIGH STREET	Lewisham	SE13	02083108763	21/11/2003	2
011	MR	David		Beckham	1 BECKINGHAM PALACE	Lewisham	SE8 5TB	02078645987	22/11/2003	2
023	MR	Peter		Egan	62 LEWISHAM HIGH ST	London	SE13 5JH	02083187574	11/12/2003	1
024	MR	Bennett		Welch	WESTOW HILL UPPER NORWOOD	London	SE19 1TY	02086706141	28/12/2003	2
025	MRS	Allison		Hales	2 PORTLAND ROAD	London	SE25 4PF	02086621188	28/12/2003	2
026	MR	Lionel	Jay	Lewis	117 BURNT ASS ROAD	London	SE12 8RA	02083142400	28/12/2003	2
027	MR	Humphrey		Williams	381 KENNINGTON LANE	London	SE11 5QY	02078208222	28/12/2003	2
* (AutoNumber)									17/01/2004	1

TESTING REPORTS➤ **DVDs REPORT**

This is preview of the report for all the DVDs on the store.
The user must use the navigations buttons to move from record to record.



The screenshot shows a Microsoft Access window titled "Microsoft Access - [DVDs]". The window contains a form with a header "DVDs" and several input fields for recording DVD information. The fields are labeled and contain the following values:

Field Label	Value
DVD NUMBER	001
DVD TITLE	Showtime
DIRECTOR	Sam rami
ACTOR	Robert de niro
CATEGORY	Comedy
RATING	12
PRODUCER	Warner
COPIES	4

At the bottom of the form, there is a navigation bar with buttons for navigating between records. A callout box with an arrow points to these buttons, labeled "Navigations buttons".

➤ MEMBERS REPORT

This is preview of the report for all the DVDs on the store.
The user must use the navigations buttons to move from record to record.

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

Field	Value
MEMBERSHIP NUMBER	002
TITLE	MR
FIRST NAME	Manuel
MIDDLE NAME	Aejandro
SURNAME	Montoya
ADDRESS	20 LETHBRIDGE CLOSE
COUNTY	Lewisham
POST CODE	SE13 7QU
TEL NUMBER	0208 694 1624
JOINING DATE	19/11/2003
EXPIRED DATE	18/11/2007

A callout box points to the navigation buttons at the bottom of the form, which are labeled "Page: 1" and include arrows for navigating between records.

Navigation buttons

➤ LOANS REPORT

This is preview of the report for all the DVDs on the store.

The user must use the navigations buttons to move from record to record.

LOANS

FIRST NAME	<input type="text" value="Lucy"/>	DVD TITLE	<input type="text" value="Heat"/>
SURNAME	<input type="text" value="Franco"/>	ACTOR	<input type="text" value="Robert de niro"/>
ADDRESS	<input type="text" value="20 LEWISHAM WAY"/>		
COUNTY	<input type="text" value="Lewisham"/>		
POST CODE	<input type="text" value="SE13"/>		
TEL NUMBER	<input type="text" value="02084781532"/>		
LOAN NUMBER	<input type="text" value="146"/>	MEMBERSHIP NUMBER	<input type="text" value="003"/>
DVD NUMBER	<input type="text" value="002"/>	QUANTITY	<input type="text" value="1"/>
PRICE	<input type="text" value="€3.00"/>		
DATE OUT	<input type="text" value="17/01/2003"/>	DATE IN	<input type="text" value="18/01/2003"/>
DAYS LATE	<input type="text" value="365"/>		
DAILY SURCHARGE	<input type="text" value="£1.50"/>		
TOTAL	<input type="text" value="€347.50"/>		

Page:

Navigations
buttons

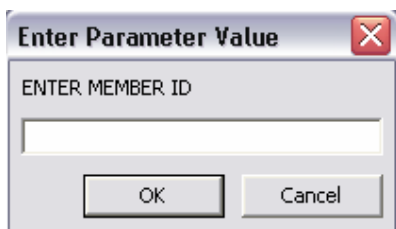
REPORT BASED ON QUERIES**➤ LOANS REPORT BASED ON QUERY**

This is very similar to using the queries form, all I am doing is asking the program to get me the information I need and the parameter will help me do that.

The only different is that I am going to get this information as a preview of a report.

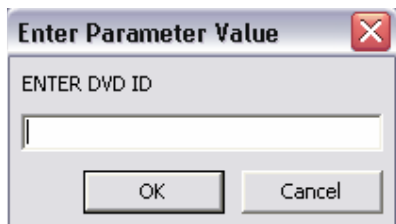
The same set up of parameter used on the query are going to be use on the report, and the program will search for the following criteria

Like "*" &[enter member id]& "*"



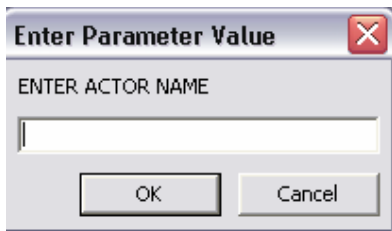
A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a red close button in the top right corner. The text "ENTER MEMBER ID" is displayed above a single-line text input field. Below the input field are two buttons: "OK" and "Cancel".

like "*" &[enter DVD id]& "*"



A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a red close button in the top right corner. The text "ENTER DVD ID" is displayed above a single-line text input field. Below the input field are two buttons: "OK" and "Cancel".

like "*" &[enter actor name]& "*"



A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a red close button in the top right corner. The text "ENTER ACTOR NAME" is displayed above a single-line text input field. Below the input field are two buttons: "OK" and "Cancel".

Like "*" & [enter DVD title] & "*"

On the report, the user must use the navigation buttons to move from record to record.

The report will look like this:

LOANS REPORT

MEMBERSHIP NUMBE	003
DVD NUMBER	002
QUANTITY	1
PRICE	€3.00
DATE OUT	17/01/2003
DATE IN	18/01/2003
DVD TITLE	Heat
ACTOR	Robert de niro
DIRECTOR	Sam rami
FIRST NAME	Lucy
MIDDLE NAME	Emilce
SURNAME	Franco
ADDRESS	20 LEWISHAM WAY
COUNTY	Lewisham
POST CODE	SE13
TEL NUMBER	020847815
JOINING DATE	19/11/2003
EXPIRED DATE	18/11/2007

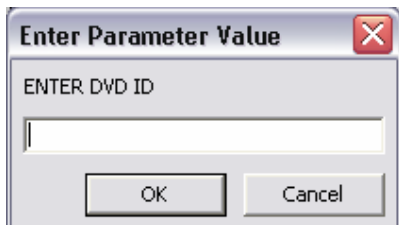
Page: 14

Navigations buttons

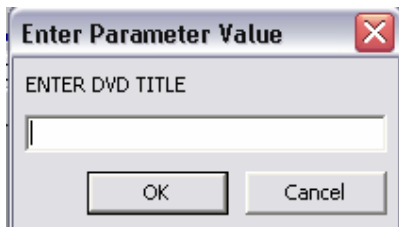
➤ DVDs REPORT BASED ON THE QUERY

On this one, the same criteria that we use on the query like in the explanation before the different is that the user will see a report instead of the DVDs query form.

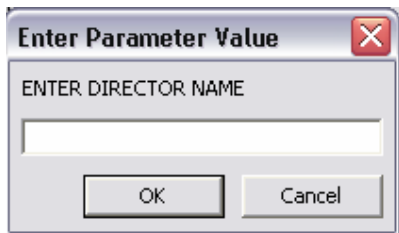
Like "*" & [enter DVD id] & "*"

A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a red close button in the top right corner. The text "ENTER DVD ID" is displayed above a single-line text input field. At the bottom, there are two buttons: "OK" and "Cancel".

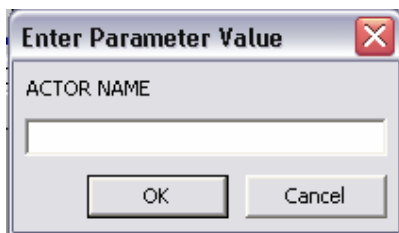
like "*" & [enter DVD title] & "*"

A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a red close button in the top right corner. The text "ENTER DVD TITLE" is displayed above a single-line text input field. At the bottom, there are two buttons: "OK" and "Cancel".

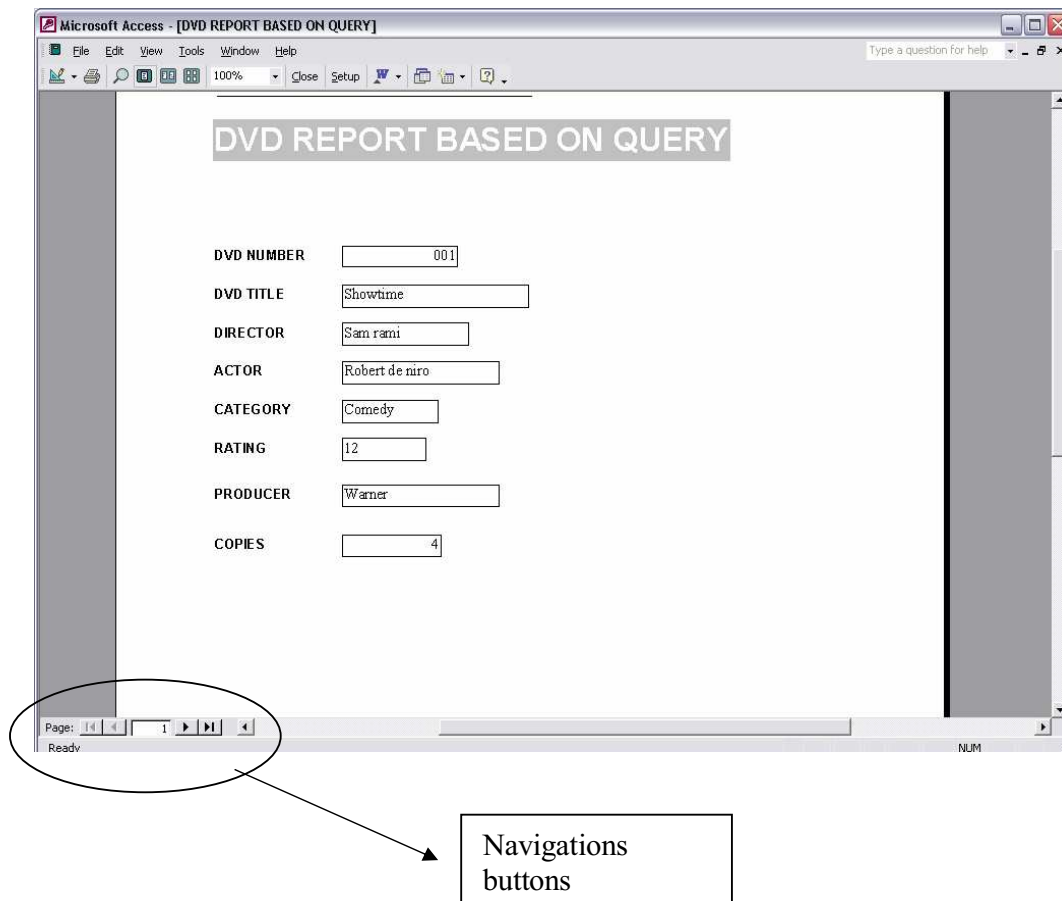
like "*" & [enter director name] & "*"

A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a red close button in the top right corner. The text "ENTER DIRECTOR NAME" is displayed above a single-line text input field. At the bottom, there are two buttons: "OK" and "Cancel".

like "*" & [enter actor name] & "*"

A screenshot of a Windows-style dialog box titled "Enter Parameter Value". It has a red close button in the top right corner. The text "ACTOR NAME" is displayed above a single-line text input field. At the bottom, there are two buttons: "OK" and "Cancel".

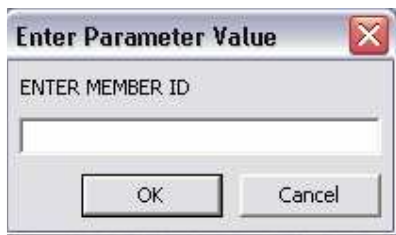
The user must use the navigations button to move to another record.
The report will look like this:



➤ MEMBERS REPORT BASED ON THE QUERY

On the members report like in the query I have set up three different parameter to allow the use easier access to the information the user may need.

Like "*" & [enter member id] & "*" *



like "*" & [enter customer id] & "*"

A dialog box titled "Enter Parameter Value" with a red close button. It contains the text "ENTER CUSTOMER LAST NAME" and a text input field. Below the input field are "OK" and "Cancel" buttons.

like "*" & [enter customer post code] & "*"

A dialog box titled "Enter Parameter Value" with a red close button. It contains the text "ENTER CUSTOMER POST CODE" and a text input field. Below the input field are "OK" and "Cancel" buttons.

Like in the other reports, the user must use the navigations buttons to move from record to record.

The report will look like this:

The screenshot shows a Microsoft Access window titled "[MEMBERS REPORT BASED ON QUERY]". The report displays a form with the following fields and values:

MEMBERSHIP NU	002
TITLE	MR
FIRST NAME	Manuel
MIDDLE NAME	Aejandro
SURNAME	Montoya
ADDRESS	20 LETHBRIDGE CLOSE
COUNTY	Lewisham
POST CODE	SE13 7QU
TEL NUMBER	0208 694 1624
JOINING DATE	19/11/2003
EXPIRED DATE	18/11/2007

At the bottom of the report, there is a navigation bar with buttons for "Page: 1/1", "First", "Previous", "Next", "Last", and "Data". A callout box with an arrow points to these buttons, labeled "Navigations buttons".

EVALUATION

USER REQUIREMENTS

These are the specification for the system, what the user needs to get from the system

- Add new customer

This user requirement has been met by creating a form on the main menu called new customer, this form will allow the user to enter the information of new customers and the information is then store into the system on the members table.

- Edit customer's details

This user requirement has been met by creating command button on the main menu call existing member, this command button will then open the manager's login and then the user will be allow to enter to the area where all the information for the customer s has been stored and edit any information for an existing customer.

- Add new DVDs

This user requirement has been met by creating in a very similar way a form on the main menu called new DVDs and it will work in the same way the new member form does.

Any new DVD that is enter in to the system will then be save in the DVDs table.

- Edit DVDs' details

This requirement has been met by creation a command button on the main menu, very similar to the way the user changes members details, a login form will then open and after the user has login the second menu comes up and in there will be a command button called existing DVDs, this will open a form for the user to find any DVD store in the system and changes any information about that DVD.

- Rent DVDs (only to register members)

When a customer will rent a DVD the customer id must be provide if the customer is not a register customer but a potential customer he would be ask to register with moving images otherwise not DVD would be rented to that person.

➤ Track Loans

This could be done through a query (loans query), this will show the user all the information about any DVD that has not been return yet and also will be able to find if any DVD is late for return and how much the surcharge is. The daily surcharge for any DVD that is return late is £1.50.