

**PERIYAR INSTITUTE OF DISTANCE EDUCATION
(PRIDE)**

**PERIYAR UNIVERSITY
SALEM - 636 011.**

**B.Sc. COMPUTER SCIENCE
THIRD YEAR
PRACTICAL – III : (PROGRAMMING IN VISUAL BASIC
AND RDBMS)**

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FOREWORD

“In human affairs we have reached a point where the problems that we must solve are no longer solvable without the aid of computers. I fear not computers but the lack of them”

Issac Asimov

Dear Students,

The importance of computers is felt in every field and it has become an integral part of our society. This book has been planned in a way that an in depth learning about **RDBMS (Relational Database Management System) - ORACLE** and **IDE (Integrated Development Environment) Event Driven Programming Language VISUAL BASIC** practical programs. The syllabus is mainly focused on Windows Environment practical and backend RDBMS concept. The **VISUAL BASIC** is a GUI based language used to create an application for real life problems. The **RDBMS** is a powerful backend tool to maintain a database.

This booklet consists of 4 practical programs in RDBMS and 7 practical programs in Visual Basic. In this booklet contains all the practical programs with procedure, form design, output form and reports. It has an introduction about **RDBMS** and **VISUAL BASIC IDE** windows and steps to create a program.

All the above said Programming in **VISUAL BASIC** and **RDBMS (ORACLE)** practical programs in SIM pattern of this booklet have been prepared **Professor N. RAJENDRAN, M.C.A., M.Phil.**, to make your practical learning's much easier while going through it.

PRIDE would be happy in you could make use of this learning material to enrich your knowledge and skills to serve the society.

Practical – III : Programming in VISUAL BASIC and RDBMS

List of Practicals : RDBMS (ORACLE)

1. Creating Tables and writing simple queries using
 - a) Comparison Operators
 - b) Logical Operators
 - c) Set Operators
 - d) Sorting and Grouping
2. Creation of Reports using Column format.
3. Writing Queries using built_in functions
4. Updating and altering tables using SQL.

List of Practical:

1. Construction of an Arithmetic Calculator (Simple).
2. Preparation of Students Mark Sheet.
3. Personal Information System (Using Tables).
4. Quiz Program System (Using Tables).
5. Railways Reservation System (Using Tables).
6. Voters Information System (Using Tables).
7. Library Information System (Using Tables).

RDBMS (Relational Database Management System)

Introduction

Date - A raw fact.

Database – A Database is a collection of data, typically describing the activities of one or more related organizations. For example, a university database might contain information about the following:

Entities: such as students, faculty, courses and classrooms.

Relationships between entities: such as students enrollment in courses, faculty teaching courses, and the use of rooms for courses.

Database Management System – A database management system, or DBMS, is software designed to assist in maintaining and utilizing large collections of data, and the need for such systems, as well as their use, is growing rapidly.

Relational Database – A Relational database is a collection of relations with distinct relation names on database.

Relational Database Management System – A relational database management system, or RDBMS, is software designed to assist in maintaining and utilizing large collections of data with its relations.

Query Languages

Generally the query languages are used to creating, manipulation (Accessing and Retrieving data) and querying data in a RDBMS.

SQL

SQL (Structured Query Language) is the most widely used commercial relational database language. The SQL language has several aspects to it:

- ❖ **The Data Definition Language (DDL)** : This subset of SQL supports the creation, deletion, and modification of definitions for tables and views. Integrity constraints can be defined on tables, either when the table is created or later. The DDL also provides commands for specifying access rights or privileges to tables and views.
- ❖ **The Data Manipulation Language (DML)** : This subset of SQL allows users to pose queries and to insert, delete and modify rows.
- ❖ **Embedded and dynamic SQL** : Embedded SQL features allow SQL code to be called from a host language such as C or COBOL. Dynamic SQL features allow a query to be constructed at run-time.
- ❖ **Triggers:** Triggers are actions executed by the RDBMS whenever changes to the database meet conditions specified in the trigger.

- ❖ **Security:** SQL provides mechanisms to control users' access to data objects such as tables and views.
- ❖ **Transaction management:** Various commands allow a user to explicitly control aspects of how a transaction is to be executed.
- ❖ **Client-Server execution and remote database access:** These commands control how a client application program can connect to an SQL database server, or access data from a database over a network.

Here include some practical program to learn about RDBMS through SQL.

Program 1 : Creating Tables and writing simple queries using

- a) Comparison Operators
- b) Logical Operators
- c) Set Operators
- d) Sorting and Grouping

Aim:

To create the database table and to insert the values to the table and to write queries with comparison operators, set operators and sorting and grouping functions.

Procedure

Step 1 : i. Create table sailor1

ii. Create table reserves1

Step 2 : i. Insert the corresponding values in sailor1

ii. Insert the corresponding values in reserves1

Step 3 : i. Using table sailor1 perform simple query with comparison operators such as <, >, LIKE, BETWEEN etc.

ii. Using table sailor1 perform simple query with logical operators such as AND, OR and NOT.

iii. Using table sailor1 and reserves1 perform simple query with sorting and grouping functions.

Step 4 : Stop the process

Program

TABLE CREATION USING SIMPLE QUERIES

TABLE CREATION

```
SQL>create table sailor1(sid number(2)not null,sname varchar(10),rating number(4),age number(2)); Table created.
```

INSERT THE VALUES

```
SQL> insert into sailor1 values('&sid','&sname','&rating','&age');
```

Enter value for sid: 1

Enter value for sname: sree

Enter value for rating: 10

Enter value for age: 24

```
old 1: insert into sailor1 values('&sid','&sname','&rating','&age')
```

```
new 1: insert into sailor1 values('1','sree','10','24')
```

1 row created.

```
SQL> /
```

Enter value for sid: 2

Enter value for sname: jai

Enter value for rating: 20

Enter value for age: 25
old 1: insert into sailor1 values('&sid','&sname','&rating','&age')
new 1: insert into sailor1 values('2','jai','20','25')
1 row created.

SQL> /

Enter value for sid: 3
Enter value for sname: jaya
Enter value for rating: 30
Enter value for age: 18
old 1: insert into sailor1 values('&sid','&sname','&rating','&age')
new 1: insert into sailor1 values('3','jaya','30','18')
1 row created.

SQL> /

Enter value for sid: 4
Enter value for sname: sri
Enter value for rating: 40
Enter value for age: 27
old 1: insert into sailor1 values('&sid','&sname','&rating','&age')
new 1: insert into sailor1 values('4','sri','40','27')
1 row created.

SQL> /

Enter value for sid: 5
Enter value for sname: prema
Enter value for rating: 50
Enter value for age: 28
old 1: insert into sailor1 values('&sid','&sname','&rating','&age')
new 1: insert into sailor1 values('5','prema','50','28')
1 row created.

DESCRIBING TABLE

SQL> desc sailor1;

Name	Null?	Type
SID		NOT NULL NUMBER(2)
SNAME		VARCHAR2(10)
RATING		NUMBER(4)
AGE		NUMBER(2)

SELECTION

SQL> select * from sailor1;

SID	SNAME	RATING	AGE
1	sree	10	24
2	jai	20	25
3	jaya	30	18
4	sri	40	27
5	prema	50	28

TABLE CREATION

SQL> create table reserves1(sid number(2)not null,sname varchar(5),bno number(3));

Table created.

INSERT THE VALUES

SQL> insert into reserves1 values('&sid','&sname','&bno');

Enter value for sid: 1

Enter value for sname: shree

Enter value for bno: 10

old 1: insert into reserves1 values('&sid','&sname','&bno')

new 1: insert into reserves1 values('1','shree','10')

1 row created.

SQL> /

Enter value for sid: 2

Enter value for sname: jai

Enter value for bno: 23

old 1: insert into reserves1 values('&sid','&sname','&bno')

new 1: insert into reserves1 values('2','jai','23')

1 row created.

SQL> /

Enter value for sid: 4

Enter value for sname: sri

Enter value for bno: 65

old 1: insert into reserves1 values('&sid','&sname','&bno')

new 1: insert into reserves1 values('4','sri','65')

1 row created.

SQL> /

Enter value for sid: 5

Enter value for sname: prema

Enter value for bno: 20

old 1: insert into reserves1 values('&sid','&sname','&bno')

new 1: insert into reserves1 values('5','prema','20')

1 row created.

SELECTION

SQL> select * from reserves1;

SID	SNAME	BNO
-----	-------	-----

1	shree	10
2	jai	23
4	sri	65
5	prema	20

COMPARISION OPERATOR

1.IN OPERATOR

SQL> select * from sailor1 where sid in(select sid from reserves1);

SID	SNAME	RATING	AGE
-----	-------	--------	-----

1	sree	10	24
2	jai	20	25
4	sri	40	27
5	prema	50	28

2.NOT IN OPERATOR

SQL> select * from sailor1 where sid not in(select sid from reserv

SID	SNAME	RATING	AGE
-----	-------	--------	-----

3	jaya	30	18
---	------	----	----

3.BETWEEN OPERATOR

SQL> select * from sailor1 where age between 18 and 20;

SID	SNAME	RATING	AGE
-----	-------	--------	-----

3	jaya	30	18
---	------	----	----

4.LIKE OPERATOR

SQL> select * from sailor1 where sname like 'j%';

SID	SNAME	RATING	AGE
-----	-------	--------	-----

2	jai	20	25
3	jaya	30	18

SQL> select * from sailor1 where sname like '%e';

SID	SNAME	RATING	AGE
1	sree	10	24

5. NOT NULL OPERATOR

SQL> select * from sailor1 where sid is not null;

SID	SNAME	RATING	AGE
1	sree	10	24
2	jai	20	25
3	jaya	30	18
4	sri	40	27
5	prema	50	28

6. IS NULL OPERATOR

SQL> select * from sailor1 where sid is null;

no rows selected

7. ANY OPERATOR

SQL> select * from sailor1 where age > any(19,20);

SID	SNAME	RATING	AGE
1	sree	10	24
2	jai	20	25
4	sri	40	27
5	prema	50	28

LOGICAL OPERATOR

1. AND OPERATOR

SQL> select * from sailor1 where age=18 and rating=4;

no rows selected

SQL> select * from sailor1 where age=18 and rating=30;

SID	SNAME	RATING	AGE
3	jaya	30	18

2. OR OPERATOR

SQL> select * from sailor1 where age=18 or rating=4;

SID	SNAME	RATING	AGE
3	jaya	30	18

SET OPERATOR

1.UNION OPERATOR

SQL> select sid from sailor1 union select sid from reserves1;

SID

1

2

3

4

5

2.INTERSECT OPERATOR

SQL> select sname from sailor1 intersect select sname from reserves1;

SNAME

jai

prema

sri

3.EXCEPT OPERATOR

SQL> select sname from sailor1 minus select sname from reserves1;

SNAME

jaya

sree

SORTING AND GROUPING

1.ORDER BY

SQL> select sname from sailor1 order by age;

SNAME

jaya

sree

jai

sri

prema

2.GROUP BY

SQL> select sname from sailor1 group by sname;

SNAME

jai
jaya
prema
sree
sri

3.GROUP BY USING HAVING CLAUSE

SQL> select age from sailor1 group by age having age>19;

AGE

24

25

27

28

Program 2 : Creation of Reports using Column format.

Aim

To create database table, insert values for the table and create reports with column format commands.

Procedure

Step 1 : Create table student2

Step 2 : Insert the corresponding values of the table student2

Step 3 : Using column format commands create reports

Step 4 : Ttitle command is used to give top title for the report to be generated

Step 5 : Break the page based on primary key

Step 6 : Btitle command is used to give bottom title

Step 7 : By using select command, we can select the columns to be generated in a report

Step 8 : Stop the execution

Program

REPORT CREATION

```
SQL> set serveroutput on
SQL> set pagesize20
SQL> column rno,name format a20 heading 'student info';
SQL> column av,re format 99,999 heading 'result'
SQL> ttitle center 'REPORT CREATION FOR STUDENT INFORMATION'
left 'PAGE NO.' sql.pno skip
SQL> break on m1 skip page
SQL> compute sum of tot on m1
SQL> btitle center 'BEST WISHES'
SQL> slect rno,name,tot,m1 from student2 order by m1;
unknown command beginning "slect rno,..." - rest of line ignored.
SQL> select rno,name,tot,m1 from student2 order by m1;
PAGE NO.      1      REPORT CREATION FOR STUDENT INFORMATION
```

RNO	NAME	TOT	M1
2	kavi	176	7
----- *****			
		176	sum
BEST WISHES			

PAGE NO. 2 REPORT CREATION FOR STUDENT INFORMATION

RNO NAME TOT M1

3 sri 182 56
----- *****
182 sum

BEST WISHES

PAGE NO. 3 REPORT CREATION FOR STUDENT INFORMATION

RNO NAME TOT M1

6 kala 173 67
7 jaya 183
----- *****
356 sum

BEST WISHES

PAGE NO. 4 REPORT CREATION FOR STUDENT INFORMATION

RNO NAME TOT M1

4 pari 234 89
----- *****
234 sum

BEST WISHES

PAGE NO. 5 REPORT CREATION FOR STUDENT INFORMATION

RNO NAME TOT M1

5 ratha 235 94
----- *****
235 sum

BEST WISHES

6 rows selected.

Program 3 : Writing Queries using built_in functions

Aim

To create a database table, insert corresponding values of table and perform various functions using SQL built-in functions.

Procedure

Step 1 : Create a database table sailor1.

Step 2 : Insert the corresponding values to the table.

Step 3 : Write a simple query to perform number functions such as max, min, sum etc.

Step 4 : Write a simple query to perform count functions. It displays the number of records in table.

Step 5 : Write a simple query to perform character functions such as ltrim, rtrim, substring etc.

Step 6 : Write a simple query to perform date functions such as add_months, months_between, last_day etc.

Step 7 : Stop the process.

Program

BUILT-IN-FUNCTIONS

NUMBER FUNCTIONS

1.ABS:

```
SQL> select abs(-15) from dual;
```

```
ABS(-15)
```

```
-----
```

```
15
```

2.POWER:

```
SQL> select power(2,3) from dual;
```

```
POWER(2,3)
```

```
-----
```

```
8
```

3.ROUND:

```
SQL> select round(15.93456,2) from dual;
```

```
ROUND(15.93456,2)
```

```
-----
```

```
15.93
```

4.SQRT:

```
SQL> select sqrt(25) from dual;
```


SQRT(25)

5

NUMBER GROUP FUNCTIONS

1.AVG:

SQL> select avg(rating) from sailor1;

AVG(RATING)

30

2.MIN:

SQL> select min(age) from sailor1;

MIN(AGE)

18

3.MAX:

SQL> select max(age) from sailor1;

MAX(AGE)

28

4.SUM:

SQL> select sum(rating) from sailor1;

SUM(RATING)

150

CHARACTER FUNCTIONS

1.LOWER:

SQL> select lower('ORACLE')from dual;

LOWER

oracle

2.UPPER:

SQL> select upper('color') from dual;

UPPER

COLOR

3.LENGTH:

```
SQL> select length('abcdefgh') from dual;  
LENGTH('ABCDEFGH')
```

```
-----  
          8
```

4.SUBSTR:

```
SQL> select substr('abcdefgh',2,4) "substr" from dual;
```

```
SUBS
```

```
-----  
bcde
```

5.RTRIM:

```
SQL> select rtrim('abcdefgh   ') "RTRIM" from dual;  
RTRIM
```

```
-----  
abcdefgh
```

6.LTRIM:

```
SQL> select ltrim('   abcdefgh') "LTRIM" from dual;  
LTRIM
```

```
-----  
abcdefgh
```

COUNT FUNCTIONS

1.COUNT:

```
SQL> select count('bno') "COUNT" from reserves1;  
COUNT
```

```
-----  
          4
```

```
SQL> select count(*) "COUNT" from sailor1;  
COUNT
```

```
-----  
          5
```

DATE FUNCTIONS

1.ADD_MONTHS:

```
SQL> select add_months('20-aug-87',2) from dual;  
ADD_MONTH
```

```
-----  
20-OCT-87
```

2.LAST_DAY:

```
SQL> select last_day('10-jan-98') from dual;
```

LAST_DAY

31-JAN-98

3.MONTH_BETWEEN:

```
SQL> select months_between('20-apr-99','20-aug-87') from dual;
```

MONTHS_BETWEEN('20-APR-99','20-AUG-87')

140

4.NEXT_DAY:

```
SQL> select next_day('20-aug-87','thursday') from dual;
```

NEXT_DAY

21-AUG-87

5.TO_DATE:

```
SQL> select to_date('april 20 1999','month-dd-yyyy') from dual;
```

TO_DATE

20-APR-99

Program 4 : Updating and altering tables using SQL.

Aim

To create a database table, insert the values to the table and applying update operations.

Procedure

Step 1 : Create database table sailor1 using DDL command CREATE TABLE.

Step 2 : Insert the corresponding values to the table sailor1

Step 3 : Write simple query to applying update operations such as modify, alter and rename.

Step 4 : Stop the execution.

Program

UPDATE OPERATION USING SQL

DESCRIBE

SQL> desc sailor1;

Name	Null?	Type
SID	NOT NULL	NUMBER(2)
SNAME		VARCHAR2(10)
RATING		NUMBER(4)
AGE		NUMBER(2)

SELECTION:

SQL> select * from sailor1;

SID	SNAME	RATING	AGE
1	sree	10	24
2	jai	20	25
3	jaya	30	18
4	sri	40	27
5	prema	50	28

UPDATE

SQL> update sailor1 set sname='jaisree' where sid='2';

1 row updated.

SELECTION:

SQL> select * from sailor1;

SID	SNAME	RATING	AGE
1	sree	10	24
2	jaisree	20	25
3	jaya	30	18
4	sri	40	27
5	prema	50	28

ALTER:

SQL> alter table sailor1 add(amount number(3));

Table altered.

DESCRIBE

SQL> desc sailor1;

Name	Null?	Type
SID	NOT NULL	NUMBER(2)
SNAME		VARCHAR2(10)
RATING		NUMBER(4)
AGE		NUMBER(2)
AMOUNT		NUMBER(3)

UPDATE:

SQL> update sailor1 set amount=150;

5 rows updated.

SELECTION:

SQL> select * from sailor1;

SID	SNAME	RATING	AGE	AMOUNT
1	sree	10	24	150
2	jaisree	20	25	150
3	jaya	30	18	150
4	sri	40	27	150
5	prema	50	28	150

Programming in VISUAL BASIC

Introduction

Visual Basic (VB) is an event driven programming language. An “Event” refers to an action on controls. Visual Basic allows us to write code to respond to such action. The word “Visual” refers to the method used to create the Graphical User Interface (GUI). And the word “Basic” refers to the BASIC Language, which is used by more programmers to learn about computer program.

Windows operating system and its applications became popular because of its easy, user-friendly processing method through GUI (Graphical User Interface). The window GUI is event driven. Like window, VB also helps us to create application similar as GUI.

One of the most significant changes in VB is the Integrated Development Environment (IDE). IDE is a term commonly used in the programming world to describe the interface and environment that we use to create our application. It is called integrated because we can access virtually all of the development tools that we need from one screen called an interface. The IDE is also commonly referred to as the design environment, or the program.

Steps to develop a VB application

We have to follow the following steps to make VB program

Step 1 : Design the User Interfaces as forms.

Step 2 : Write code to respond to User Input / Events.

The User Interface is formed by using the controls and its properties, code to an event performed on those controls.

Controls

A control is an object on the form. It makes user-friendly input and output formats for the applications.

Ex:

- Text box
- Check box
- Combo box
- Image box
- Data control

Properties

The developer should give some attribute values to controls. This attribute values are simply known as properties of that control. These controls are used to do some activities.

Ex :

Control : Text box

Properties : Name, length, size, value etc.

Events

Event is an action. When we make an event on control that it invoke its associated method.

Ex:

Click

Double Click

Mouse over

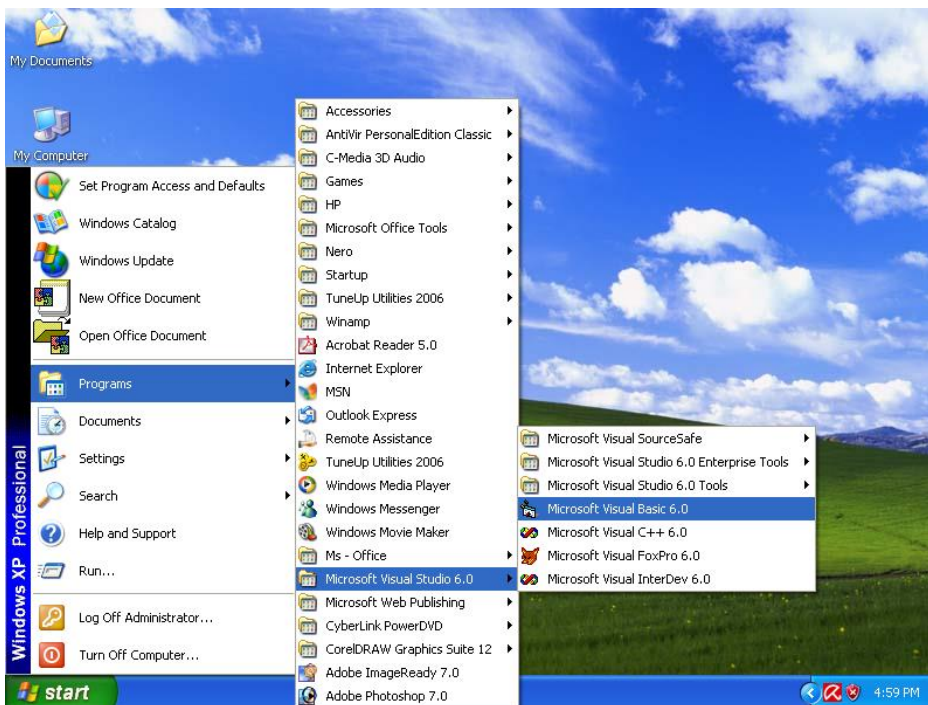
Methods

The action taken when the event occurs is the method. It is a block of statements to do the actions on the controls.

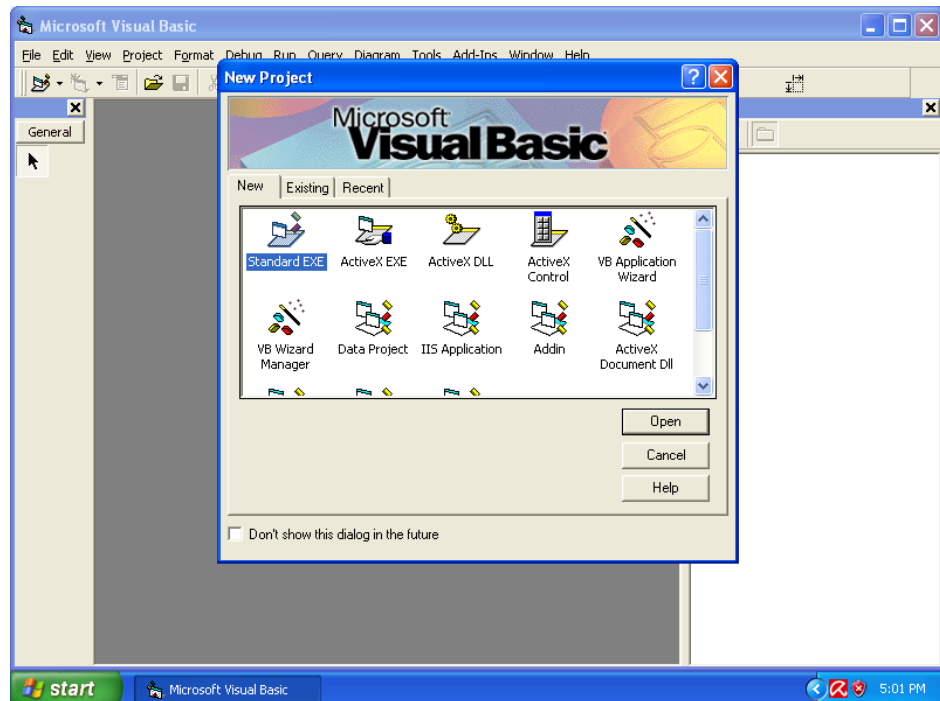
Getting into Visual Basic

Click on desktop

Start -> Programs -> Microsoft Visual Studio 6.0 -> Microsoft Visual Basic 6.0



Now it shows a “New Project window” in Microsoft Visual Basic screen.



It has three tabs

1. **New** – Default tab. It displays so many icons, which represent project type.
2. **Existing** – It will display the existing VB projects on system.
3. **Recent** – It will display the projects on which we have recently worked.

The “new” tab has the following icons to represent the project types.

Standard EXE – It is used to develop a small or large standalone application.

ActiveX EXE – Used to create an executable components in which executed from other application.

ActiveX DLL – It provides added functionality in which executed from our application.

ActiveX control – It is used to create a custom ActiveX control that can be used in other application. It is like third party software

VB Application Wizard – It helps us to create a new VB application from existing profile

VB Wizard manager – It helps us to arrange and control the wizards

Data Project – Used to provide the background details about the project

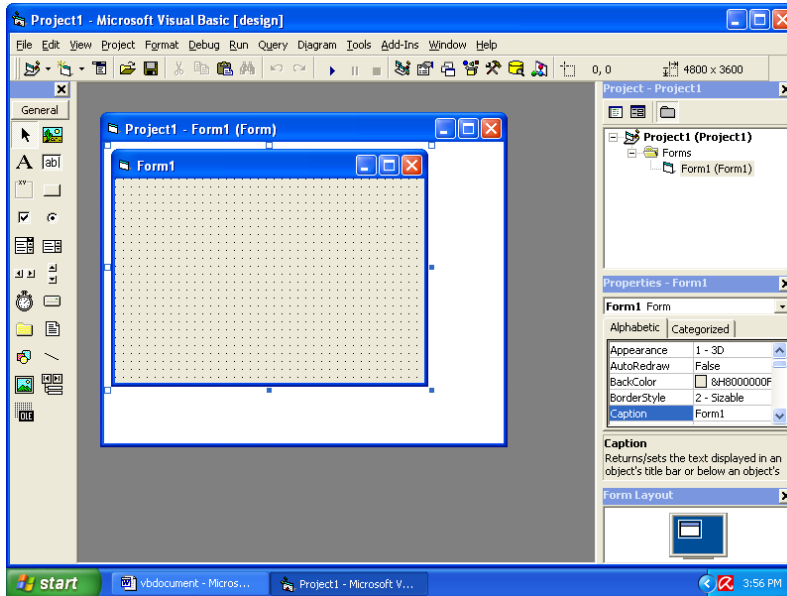
IIS Application – It helps to create an Internet application

Addin – Used to include the control manager of application

Activex document Exe – Creates a component that can takes over the application at runtime.

DHTML Application – Creates an application that can be executed from a web browser only.

If we want to open a home page on VB for new project click on “Standard EXE” in “New” tab. It shows a window look like a following screen.



This screen has the following integral window parts.

i. Title bar

It shows the title of project on VB and it has minimize, Restore and close button on top right corner. This title tells us that we are currently working on project (Title) and we are in the design stage or design mode. There are two other modes. One is “Run” – The program is in run mode what it will execute. Other one is “Break” – The program is in break mode what it has error (Debugging).

ii. Menu bar

It shows so many menus and list out its options when we click on it.

File Edit View Project Format Debug Run Query Diagram Tools Add-Ins Window Help

File menu – Used to Open, Close, Save, Print and make an existing or new file. Ctrl + F is a shortcut key to open it.

Edit menu – Used to make all editing process such as Cut, Copy, Paste, Find, Undo, Redo etc., Ctrl + E is a shortcut key to open it.

View menu – Used to view the various part of our program. Ctrl + V is a shortcut key to open it.

Project menu – Used to inserting and removing forms, objects, modules, data reports etc., to our project.

Format menu – used to place and arrange the controls in the form.

Debug menu – To remove the control that have crept in.

Run menu – To compile, start and stop a program.

Query menu– Used to verify and execute a query.

Tools menu – To add procedure and customize the environment of project.

Add-Ins menu – To add tools like data manager and other wizards.

Window menu – Arrange the appearances of various windows on the desktop.

Help menu – Used for the online help that every programmer needs to refer to.

iii. Standard tool bar

It has various icons to make some process in menu bars like Cut, Copy, New project etc.,

iv. Tool box

Usually it located on left side on window. It has various tools to design a form in application.



- Selection tool : Used to select an object on form.



- Picture box : Display a graphical picture from a bitmap or metafile.



- Label box : Display the caption text.



- Text box : To display or accept text input.



- Frame : Used to frames a control



- Command button : Instruct to a procedure by means of applying events on it.



- Check box : Used to select more than one choice among list.



- Option button : Used to select only one choice among list



- Combo box : Used to select any one option from list. (Or) Enter new value in text box. It added with existing item.



- List box : List out the items.



- Horizontal scroll bar : If the project has long item in horizontally, it is used to indicate the current position on a scale.




- Vertical scroll bar : If the project has long item in vertically, it is used to indicate the current position on a scale.




- Timer : Used to fix the timer on project.





- Drive : Used to display available drives


 - Directory : Used to display available directories.

 - List control : Used to display available files.

 - Shape and Line controls : Used to draw lines, squares, circles etc.,

 - Image box : Like picture box. Display an image.

 - Data control : Permit us to access to databases through the controls on project form.

 - OLE (Object Linking and Embedding) : Used to link a program with another object or programs.

v. Project Explorer window

Usually located on the right side of project window. It organizes the application as one project. All the code and controls that are used in the applications are stored in separate files. It has an interface to deals with the project. It has three icons.

1. To view the code
2. To view the controls
3. To show or hide the forms.

vi. Property window

It displayed below the project explorer window. It lists all properties for a selected object on form. We can change and set the property values according to need of an object.

vii. Form Layout window

It displayed below the property window. It allows us to position the form in application using a small graphical representation of the screen.

viii. Immediate, Local and Watch windows

These windows are used to debugging our application. They are only available at run time of our application.

ix. Object browser

It lists objects available in libraries. Every object has its methods and properties associated it.

x. Form designer

It used to design a form interfaces in format.

xi. Code editor window

It used to entering and editing application code.

Steps to make an Program

Step 1 : Open new project in Visual Basic

Step 2 : Design a form using required interfaces and sets its properties

Step 3 : Edit a code to all required interfaces with its events

Step 4 : Create a data base

Step 5 : Connect the application with its data base

Step 6 : Compile and Execute the application.

Program 1 : Construction of an Arithmetic Calculator (Simple).

Aim :

Design a project to create an Arithmetic calculator.

Procedure :

Step 1: Open a new VB project.

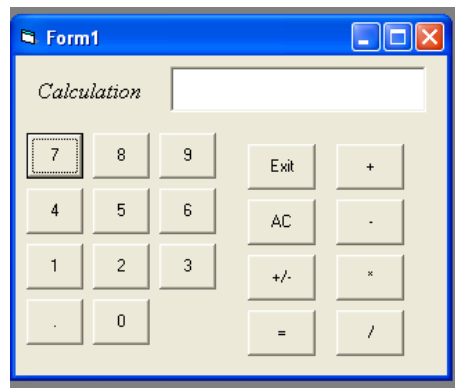
Step 2 : Place the command button on form similar to the simple calculator.

Step 3 : Place the text boxes to display the result and set the properties of it.

Step 4 : Based on the event on controls do appropriate task.

Step 5 : Display the result.

Form Design



Program

Construction of an Arithmetic Calculator (Simple).

```
Dim cur As Double
Dim pre As Double
Dim res As Double
Dim ch As String
Dim sta As Integer
Private Sub AC_Click()
cur = pre = 0
Text1.Text = " "
End Sub
Private Sub ADD_Click()
sta = 1
pre = cur
cur = 0
ch = "+"
End Sub
```

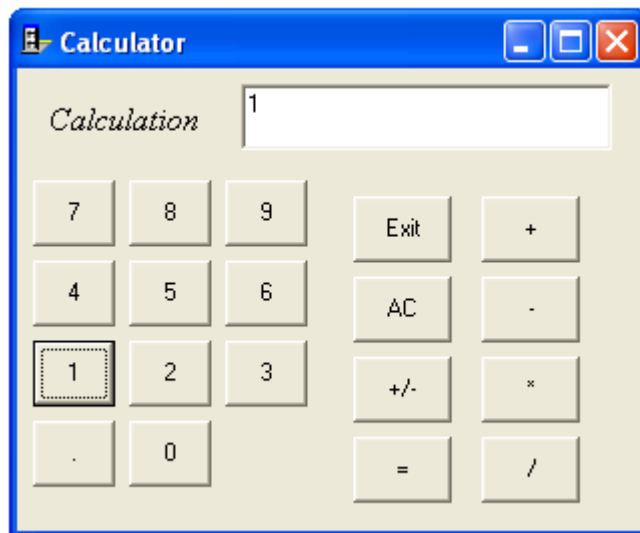
```

Private Sub Command1_Click(Index As Integer)
If sta = 1 Then Text1.Text = " "
Text1.Text = Text1.Text & Command1(Index).Caption
cur = Val(Text1.Text)
sta = 0
End Sub
Private Sub div_Click()
sta = 1
pre = cur
cur = 0
ch = "/"
End Sub
Private Sub Equal_Click()
Select Case ch
Case "+"
res = pre + cur
Text1.Text = Str(res)
Case "-"
res = pre - cur
Text1.Text = Str(res)
Case "*"
res = pre * cur
Text1.Text = Str(res)
Case "/"
res = pre / cur
Text1.Text = Str(res)
End Select
cur = res
End Sub
Private Sub Exit_Click()
Unload Me
End Sub
Private Sub Form_Load()
sta = 0
End Sub
Private Sub MUL_Click()
sta = 1
pre = cur

```

```
cur = 0
ch = "*"
End Sub
Private Sub Plus_Click()
cur = -cur
Text1.Text = Str(cur)
End Sub
Private Sub SUB_Click()
sta = 1
pre = cur
cur = 0
ch = "-"
End Sub
```

Output



Program 2 : Preparation of Students Mark Sheet.

Aim :

Design a project to maintain students mark details.

Procedure :

Step 1: Open a new VB project.

Step 2 : Design a form using controls and set the properties of controls.

Step 3 : Design a database for maintaining students details.

Step 4 : Connect the database to the form and display the details.

Step 5 : Using the events on controls do necessary manipulations.

Step 6 : Display the results and data reports.

Form Design

The screenshot shows a Windows application window titled "Mark Sheet". The main content area is titled "STUDENT MARK REPORT". It features a form with the following elements:

- Text boxes for "Name", "English", "Tamil", "Major", "Allied", "Total", and "Result".
- Buttons for "AddNew", "Delete", "Update", "Result", "Report", "Total", and "Exit" positioned to the right of their respective text boxes.
- A data grid control at the bottom right, labeled "Data1", with navigation arrows.

The Windows taskbar at the bottom displays the Start button, several open applications (vb - Microsoft Word, Project1 - Microsoft V..., Mark Sheet), and the system tray with the time 1:37 PM.

Program

Preparation of Students Mark sheet

```
Private Sub Command1_Click()
```

```
Text1.SetFocus
```

```
Data1.Recordset.AddNew
```

```
End Sub
```

```
Private Sub Command2_Click()
```

```
Data1.Recordset.Delete
```

```
End Sub
```



```

Private Sub Command3_Click()
Data1.Recordset.Update
End Sub
Private Sub Command4_Click()
If Text2.Text > 39 And Text3.Text > 39 And Text4.Text > 39 And Text5.Text
> 39 Then
Text7.Text = "Pass"
Else
Text7.Text = "Fail"
End If
End Sub
Private Sub Command5_Click()
DataReport1.Show
DataReport1.WindowState = 2
End Sub
Private Sub Command6_Click()
End
End Sub
Private Sub Command7_Click()
Text6.Text = Val(Text2.Text) + Val(Text3.Text) + Val(Text4.Text) +
Val(Text5.Text)
End Sub
Private Sub Command8_Click()
If Val(Text2.Text > 39) And Val(Text3.Text > 39) And Val(Text4.Text > 39)
And Val(Text5.Text > 39) Then
Text7.Text = "Pass"
Else
Text7.Text = "Fail"
End If
End Sub

```

OUTPUT

Mark Sheet

STUDENT MARK REPORT

Name	Keerthana	AddNew
English	100	Delete
Tamil	100	Update
Major	100	Result
Allied	100	Report
Total	400	Total
Result	Pass	Exit

Navigation: < Data1 >

Taskbar: start | vb - Microsoft Word | Project1 - Microsoft V... | Mark Sheet | 1:39 PM

DataReport1

Zoom: 100%

Student Marksheet

Name:	Keerthana
English:	100
Tamil:	100
Major:	100
Allied:	100
Total:	400
Result:	Pass
Name:	Padma
English:	90
Tamil:	90
Major:	90
Allied:	90

Pages: 1

Taskbar: start | Project1 - Micros... | Mark Sheet | DataReport1 | vb - Microsoft W... | 2:01 PM

Program 3 : Personal Information System (Using Tables).

Aim :

Design a project to maintain people personal information.

Procedure :

Step 1: Open a new VB project.

Step 2 : Design a form using controls and set the properties of controls.

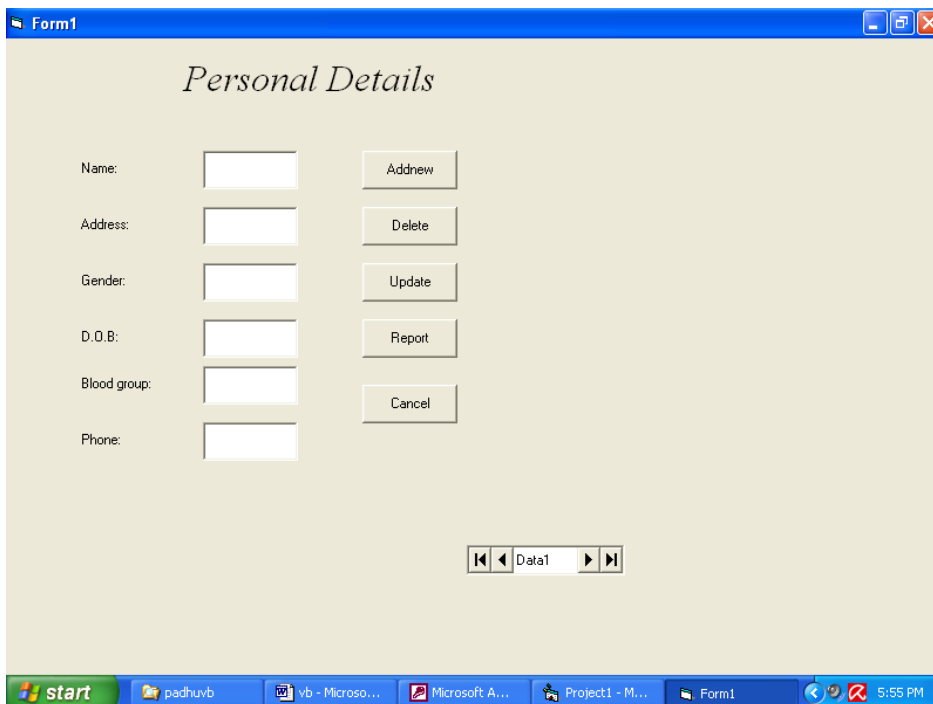
Step 3 : Design a database for maintaining students details.

Step 4 : Connect the database to the form and display the details.

Step 5 : Using the events on controls do the process such as insertion, deletion, updation on database.

Step 6 : Display the data reports.

Form Design



Program

```
Private Sub Command1_Click()  
Data1.Recordset.AddNew  
Text1.SetFocus  
End Sub
```

```
Private Sub Command2_Click()  
Data1.Recordset.Delete  
End Sub
```

```
Private Sub Command3_Click()  
Data1.Recordset.Update  
End Sub
```

```
Private Sub Command4_Click()  
DataReport1.Show  
End Sub
```

```
Private Sub Command5_Click()  
End  
End Sub
```

Output

Form1

Personal Details

Name:

Address:

Gender:

D.O.B:

Blood group:

Phone:

Navigation: Data1

Windows Taskbar: start | padhuvb | vb - Microso... | Microsoft A... | Project1 - M... | Form1 | 5:56 PM

Program 4 : Quiz Program System (Using Tables).

Aim :

Design a project to form queries to conduct a quiz program.

Procedure :

Step 1: Open a new VB project.

Step 2 : Design a form using controls and set the properties of controls.

Step 3 : Set the maximum time in timer control property to time out the quiz program.

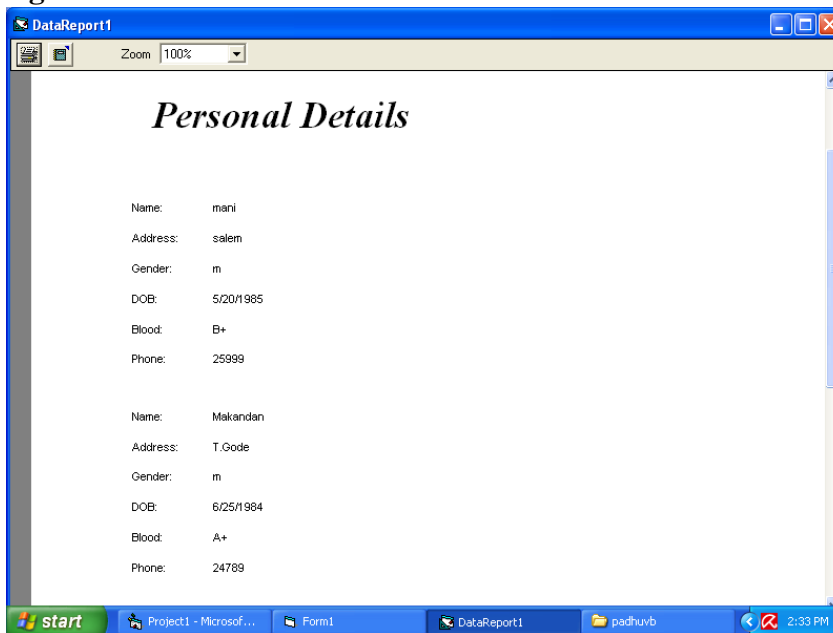
Step 4 : Design a database for maintaining participants score in quiz.

Step 5 : Connect the database to the form and display the details.

Step 6 : Using the events on controls do the necessary processes.

Step 7 : Display the score of participant.

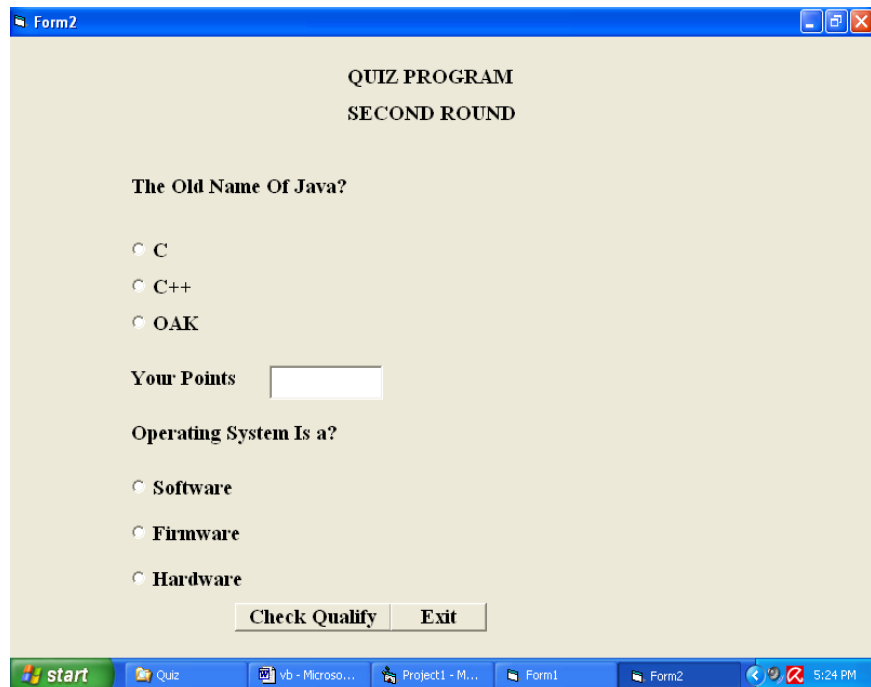
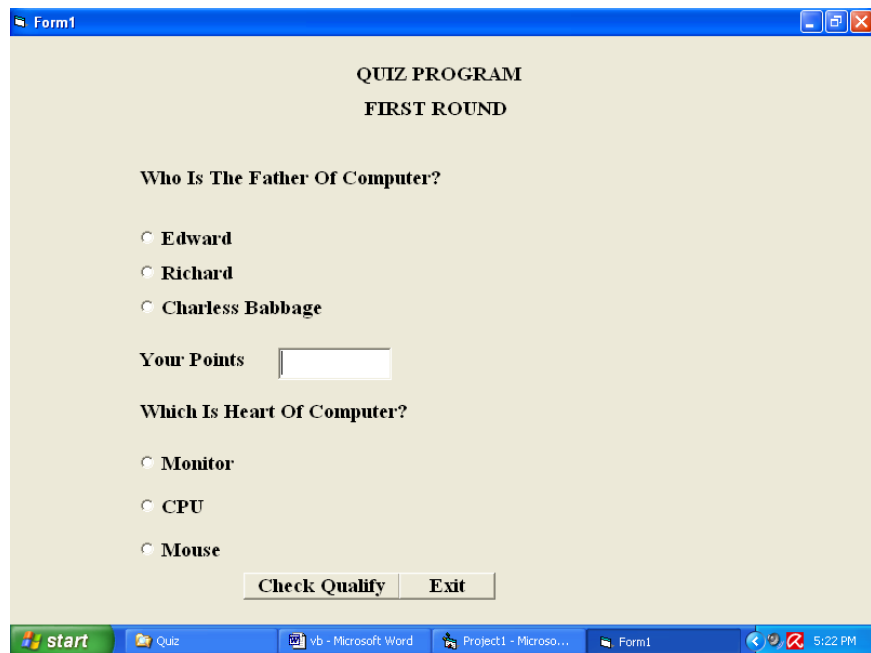
Form Design

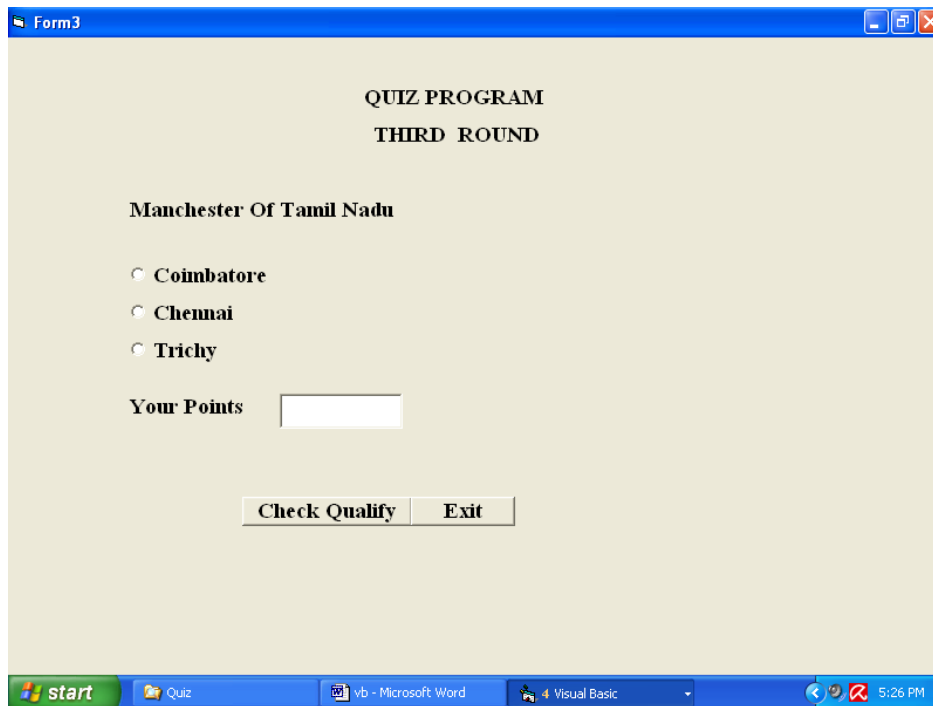


The screenshot shows a Windows application window titled "DataReport1" with a zoom level of 100%. The main content area displays a report titled "Personal Details" in a serif font. The report lists personal information for two individuals:

Name:	mani
Address:	salem
Gender:	m
DOB:	5/20/1985
Blood:	B+
Phone:	25999
Name:	Makandan
Address:	T.Gode
Gender:	m
DOB:	6/25/1984
Blood:	A+
Phone:	24789

The Windows taskbar at the bottom shows the Start button, several open applications (Project1 - Microsof..., Form1, DataReport1, padhuvb), and the system clock showing 2:33 PM.





Program

Form -1

Dim a As Integer

```
Private Sub Command1_Click()
```

```
If a = 40 Then
```

```
MsgBox ("You Are Selected For Second Round")
```

```
Form2.Show
```

```
Else
```

```
MsgBox ("You Are Not Selected")
```

```
End If
```

```
End Sub
```

```
Private Sub Command2_Click()
```

```
End
```

```
End Sub
```

```
Private Sub Form_Load()
```

```
MsgBox "Welcome You"
```

```
MsgBox "All The Best"
```

```
Option1.Value = False
```

```
Option2.Value = False
```

```
Option3.Value = False
```

```
Option4.Value = False
```

```
Option5.Value = False
```

```

Option6.Value = False
a = 20
End Sub
Private Sub Option1_Click()
MsgBox "No Points"
Option2.Value = False
Option3.Value = False
End Sub
Private Sub Option2_Click()
MsgBox "No Points"
Option1.Value = False
Option3.Value = False
End Sub
Private Sub Option3_Click()
MsgBox "20 Points!"
Option1.Value = False
Option2.Value = False
Text1.Text = Val(a)
MsgBox "Got Points" & a
End Sub
Private Sub Option4_Click()
MsgBox "No Points"
Option5.Value = False
Option6.Value = False
End Sub
Private Sub Option5_Click()
MsgBox "20 Points!"
Option4.Value = False
Option6.Value = False
a = Val(Text1.Text) + a
Text1.Text = (a)
MsgBox "Got Points" & a
End Sub
Private Sub Option6_Click()
MsgBox "No Points"
Option4.Value = False
Option5.Value = False
End Sub

```


Form - 2

```
Dim e As Integer
Private Sub Command1_Click()
If e = 80 Then
MsgBox "you Are Selected for Third Round"
Form3.Show
Else
MsgBox "You Are Not Selected"
End If
End Sub
Private Sub Command2_Click()
End
End Sub
Private Sub Form_Load()
Option1.Value = False
Option2.Value = False
Option3.Value = False
Option4.Value = False
Option5.Value = False
Option6.Value = False
a = Val(Form1.Text1.Text)
End Sub
Private Sub Option1_Click()
MsgBox "No Points"
Option1.Value = False
Option2.Value = False
End Sub
Private Sub Option2_Click()
MsgBox "No Points"
Option1.Value = False
Option3.Value = False
End Sub
Private Sub Option3_Click()
MsgBox "20 points!"
Option1.Value = False
Option2.Value = False
e = 40
e = e + 20
```

```

Text1.Text = e
MsgBox "Got Points" & e
End Sub
Private Sub Option4_Click()
MsgBox "20 points!"
Option4.Value = False
Option5.Value = False
e = Val(Text1.Text) + 20
Text1.Text = e
MsgBox "Got Points" & e
End Sub
Private Sub Option5_Click()
MsgBox "No Points"
Option4.Value = False
Option6.Value = False
End Sub
Private Sub Option6_Click()
MsgBox "No Points"
Option4.Value = False
Option5.Value = False
End Sub
Form - 3
Dim g As Integer
Private Sub Command1_Click()
If g = 100 Then
MsgBox "Congratulate You Won!Bye"
Else
MsgBox "U have not won"
End If
End Sub
Private Sub Command2_Click()
End
End Sub
Private Sub Form_Load()
Option1.Value = False
Option2.Value = False
Option3.Value = False
g = Val(Form2.Text1.Text)

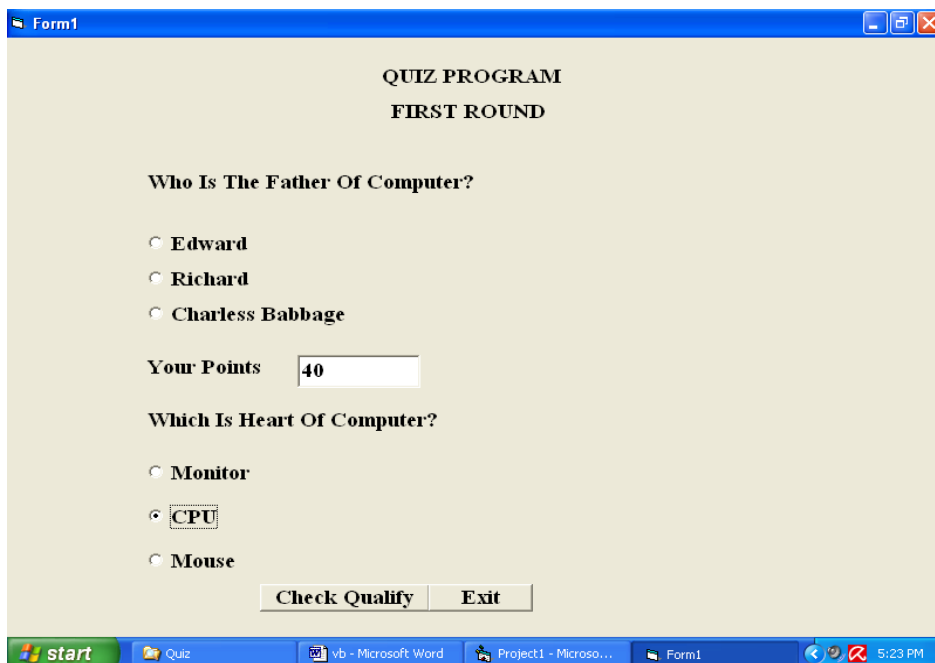
```

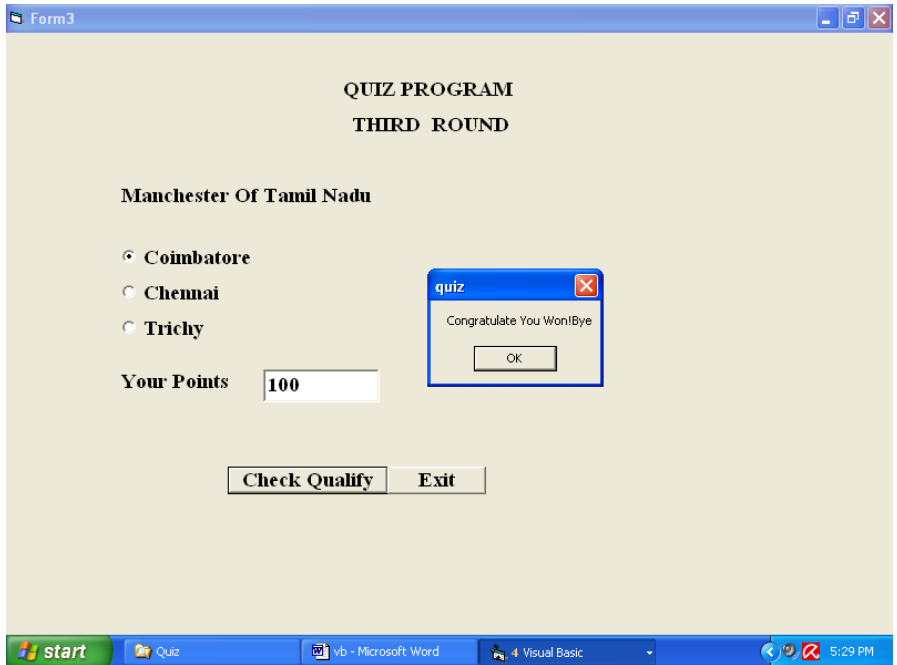
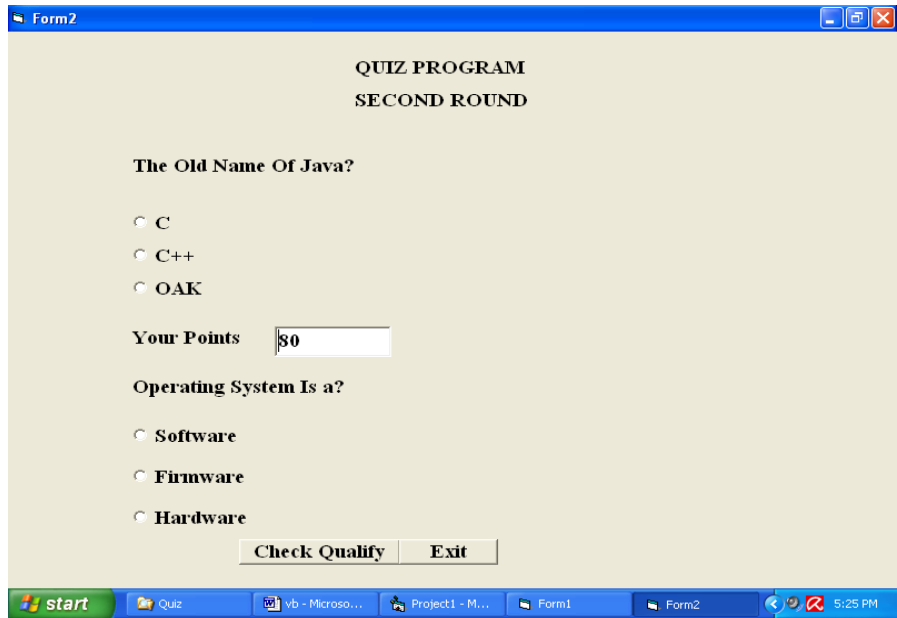
```

End Sub
Private Sub Option1_Click()
MsgBox "20 points!"
Option2.Value = False
Option3.Value = False
g = Val(Form2.Text1.Text) + 20
Text1.Text = g
MsgBox "Got Points" & g
End Sub
Private Sub Option2_Click()
MsgBox "No Points"
Option1.Value = False
Option2.Value = False
End Sub
Private Sub Option3_Click()
MsgBox "No Points"
Option1.Value = False
Option2.Value = False
End Sub

```

Output





Program 5 : Railways Reservation System (Using Tables).

Aim :

Design a project for railway reservation.

Procedure :

Step 1: Open a new VB project.

Step 2 : Design a MDI form with Train-details, Reservation and Exit menu.

Step 3 : Design a Train-details form with required controls and set that's properties.

Step 4 : Design a Reservation form with required controls and set that's properties.

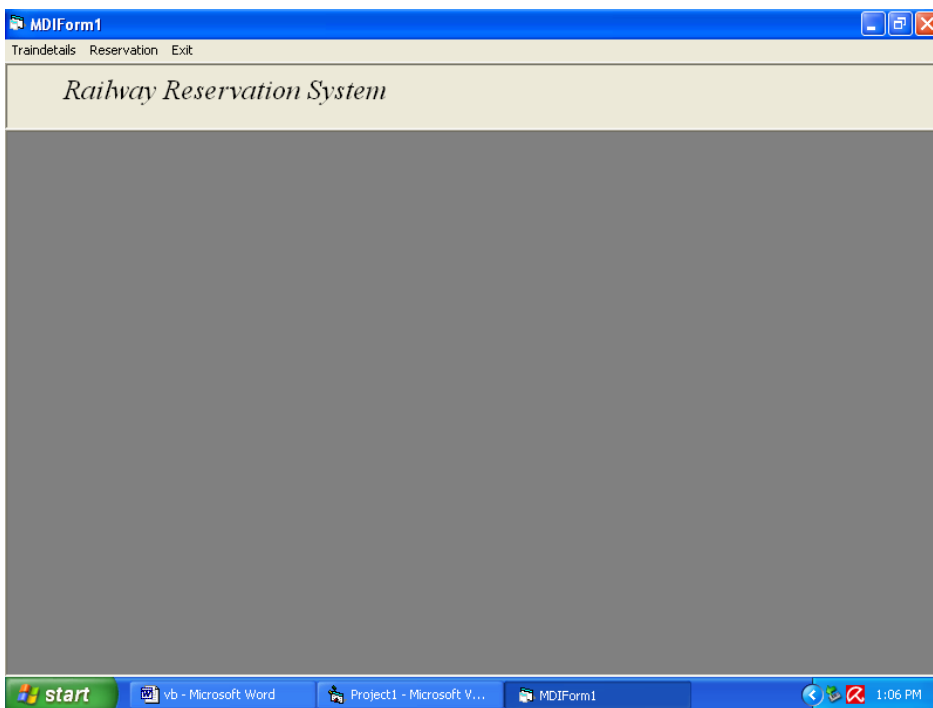
Step 5 : Design a database for maintaining passengers details.

Step 6 : Connect the database to the form and display the details.

Step 7 : Using the events on controls do the necessary processes.

Step 8 : Display the information and data reports.

Form Design



Form1

Address Edit Delete Save Report Exit

Train details

Train no.

Train name Train de

No. of seats

start vb - Microsoft Word Project1 - Microso... MDIForm1 Form1 1:07 PM

Form2

Address Edit Delete Save Report Exit

Reservation Details

Reservation no	<input type="text"/>	Address	<input type="text"/>
Train no	<input type="text"/>	Reserved seats	<input type="text"/>
Train date	<input type="text"/>	Source	<input type="text"/>
Passenger name	<input type="text"/>	Destination	<input type="text"/>
Gender	<input type="text"/>	Train name	<input type="text"/>
Age	<input type="text"/>	No. of seats	<input type="text"/>

Reservation

start vb - Microsoft Word Project1 - Microso... MDIForm1 Form2 1:11 PM

Program

Railways Reservation System

```
Private Sub exit_Click()
```

```
End
```

```
End Sub
```

```
Private Sub MDIForm_Load()
```

```
Me.WindowState = 2
```

```
End Sub
```

```
Private Sub reser_Click()
```

```
Form2.Show
```

```
End Sub
```

```
Private Sub train_Click()
```

```
Form1.Show
```

```
End Sub
```

Form 1

```
Private Sub add_Click()
```

```
Text1.SetFocus
```

```
Data1.Recordset.AddNew
```

```
End Sub
```

```
Private Sub del_Click()
```

```
If MsgBox("Do you want to delete this record", vbYesNo, "confirmation") =  
vbYes Then
```

```
Data1.Recordset.Delete
```

```
MsgBox ("Record deleted")
```

```
End If
```

```
End Sub
```

```
Private Sub edit_Click()
```

```
Data1.Recordset.edit
```

```
MsgBox ("Successfully Edited")
```

```
End Sub
```

```
Private Sub exit_Click()
```

```
End
```

```
End Sub
```

```
Private Sub report_Click()
```

```
DataReport1.Show
```

```
End Sub
```

```
Private Sub save_Click()
```

```
Data1.Recordset.Fields(0) = Text1.Text
```

```

Data1.Recordset.Fields(1) = Text2.Text
Data1.Recordset.Fields(2) = Text3.Text
Data1.Recordset.Update
MsgBox "Record saved"
End Sub
Form 2
Private Sub add_Click()
Data1.Recordset.AddNew
MsgBox "Ready to add"
End Sub
Private Sub del_Click()
Data1.Recordset.Delete
MsgBox "Record Deleted"
End Sub
Private Sub edit_Click()
Data1.Recordset.edit
End Sub
Private Sub exit_Click()
End
End Sub
Private Sub Form_Load()
Me.WindowState = 2
End Sub
Private Sub report_Click()
DataReport2.Show
End Sub
Private Sub save_Click()
Data1.Recordset.Update
MsgBox "Record saved"
End Sub
Private Sub search_Click()
Dim a As String
a = InputBox("Enter the no.")
Data1.Recordset.FindFirst "no=" & a & " "
Text1.Text = Data1.Recordset.Fields(0)
Text2.Text = Data1.Recordset.Fields(1)
Text3.Text = Data1.Recordset.Fields(2)
Text4.Text = Data1.Recordset.Fields(3)

```

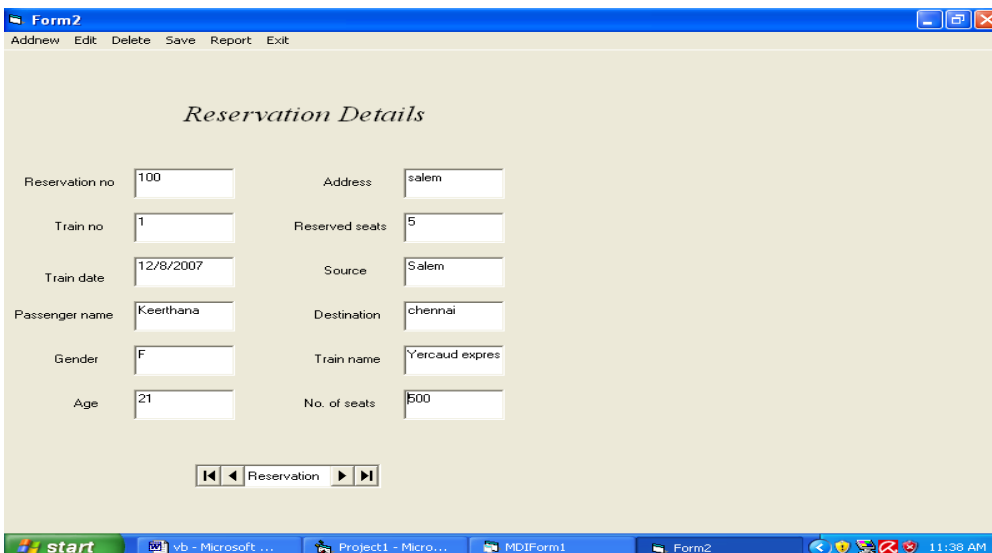
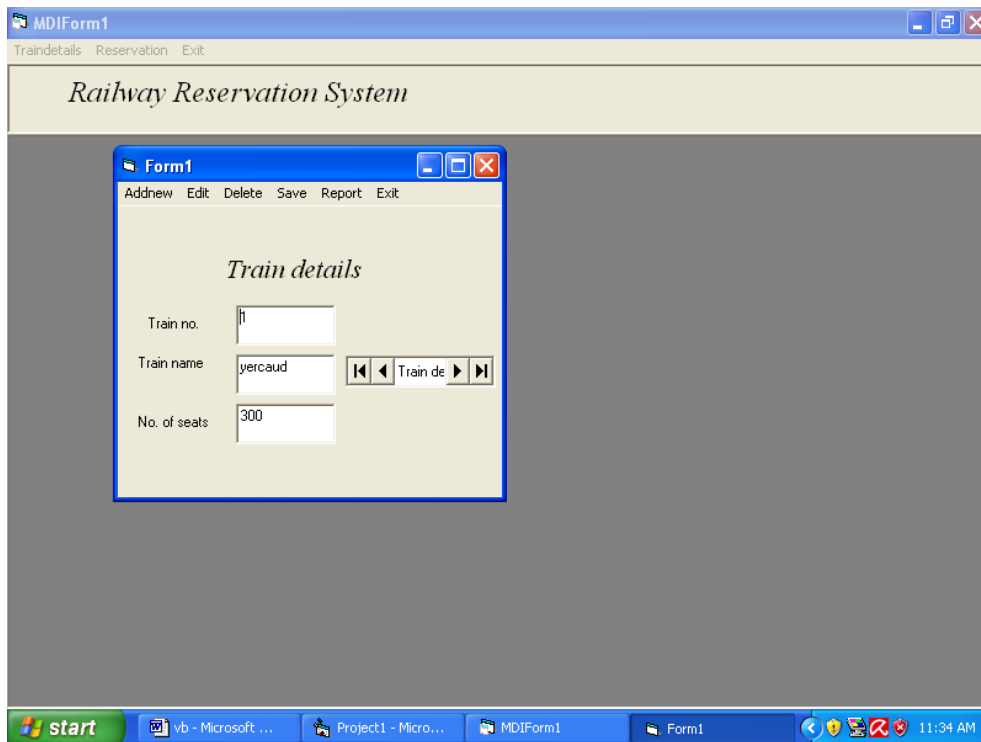


```

Text5.Text = Data1.Recordset.Fields(4)
Text6.Text = Data1.Recordset.Fields(5)
Text7.Text = Data1.Recordset.Fields(6)
Text8.Text = Data1.Recordset.Fields(7)
Text9.Text = Data1.Recordset.Fields(8)
Text10.Text = Data1.Recordset.Fields(9)
Text11.Text = Data1.Recordset.Fields(10)
Text12.Text = Data1.Recordset.Fields(11)
End Sub

```

Output



DataReport1

Zoom 100%

Train Details

<i>Train no.</i>	<i>Train name</i>	<i>No. of seats</i>
1	yercaud	300
2	mumbai	200
3	CHENNAI	500

start vb - Microsoft Word 5 Visual Basic 11:40 AM

DataReport2

Zoom 100%

Reservation Details

```

rn:      100
tn:      1
td:      12/8/2007
pn:      Keerthana
g:       F
age:     21
add:     salem
rs:      5
s:       Salem
des:     chennai
tna:     Yercaud express
seats:   500
rn:      50

```

start vb - Microsoft Word 4 Visual Basic 11:46 AM

Program 6 : Voters Information System (Using Tables).

Aim :

Design a project for maintaining voters information.

Procedure :

Step 1: Open a new VB project.

Step 2 : Design a form with required controls.

Step 3 : Design a database for maintaining voters details.

Step 4 : Connect the database to the form and display the details.

Step 5 : Using the events on controls do the necessary processes.

Step 6 : Display the votes information and data reports.

Form Design

The screenshot displays a Windows application window titled "Voter's Information System". The window has a blue title bar and standard Windows window controls (minimize, maximize, close). The main area is a light beige color with the text "Voter's Information System" centered at the top. Below the title, there are eight input fields arranged vertically on the left side, each with a label: "Voter's ID:", "Voter's Name:", "Address:", "Father's Name:", "Gender:", "Age:", "Ward no:", and "Marital status:". To the right of these fields is a vertical column of seven buttons: "Addnew", "Delete", "Edit", "Update", "Clear", "Exit", and "Report". Below the "Report" button is a set of four navigation arrows: "<<", "<", ">", and ">>". At the bottom of the window, there is a taskbar with the Windows Start button on the left. The taskbar shows three open applications: "vb - Microsoft Word", "Project1 - Microsoft V...", and "Voter's Information". On the right side of the taskbar, there are system icons for network, volume, and power, along with the system clock showing "1:14 PM".

Program

Voter's information system

```
Private Sub Addnew_Click()
```

```
Text1.SetFocus
```

```
Data1.Recordset.Addnew
```

```
End Sub
```

```
Private Sub Clear_Click()
```

```
Text1.Text = " "
```

```
Text2.Text = " "
```

```
Text3.Text = " "
```

```
Text4.Text = " "
```

```
Text5.Text = " "
```

```
Text6.Text = " "
```

```
Text7.Text = " "
```

```
Text8.Text = " "
```

```
End Sub
```

```
Private Sub Delete_Click()
```

```
Data1.Recordset.Delete
```

```
MsgBox "Record deleted"
```

```
End Sub
```

```
Private Sub Edit_Click()
```

```
Data1.Recordset.Edit
```

```
End Sub
```

```
Private Sub Exit_Click()
```

```
End
```

```
End Sub
```

```
Private Sub First_Click()
```

```
Data1.Recordset.MoveFirst
```

```
End Sub
```

```
Private Sub Form_Load()
```

```
Me.WindowState = 2
```

```
End Sub
```

```
Private Sub Last_Click()
```

```
Data1.Recordset.MoveLast
```

```
End Sub
```

```
Private Sub Next_Click()
```

```
Data1.Recordset.MoveNext
```

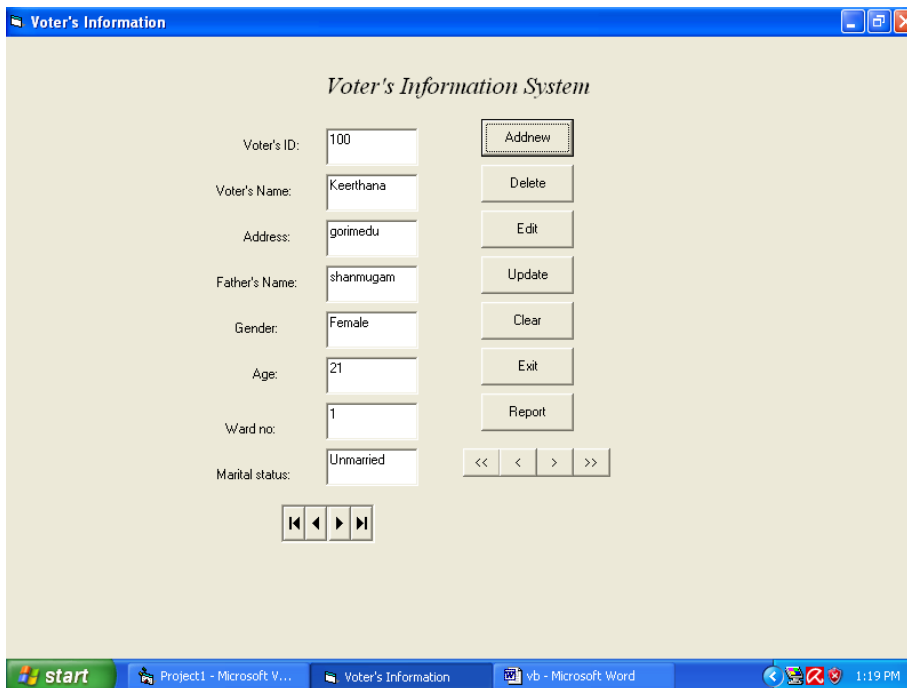
```
End Sub
```

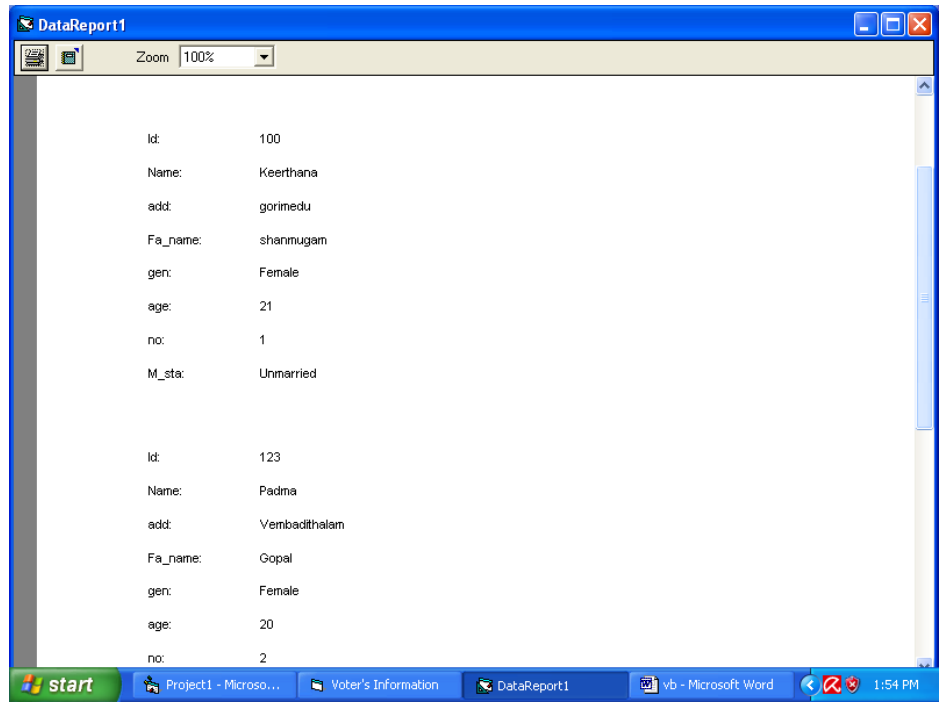
```

Private Sub Previous_Click()
Data1.Recordset.MovePrevious
End Sub
Private Sub Report_Click()
DataReport1.Show
End Sub
Private Sub Text6_LostFocus()
If Val(Text6.Text) >= 18 Then
MsgBox "Eligible for vote"
Else
MsgBox "Not eligible for vote"
End If
End Sub
Private Sub Update_Click()
Data1.Recordset.Update
MsgBox "Record saved"
End Sub

```

Output





Program 7 : Library Information System (Using Tables).

Aim :

Design a project for maintaining library process such as issue and return.

Procedure :

Step 1: Open a new VB project.

Step 2 : Design MDI form with Book-Information, Book-Issue-Return, Student-detail and Exit menu.

Step 3 : Design Book-Information form with required controls and set that's properties.

Step 4 : Design Book-Issue-Return form with required controls and set that's properties.

Step 5 : Design Student-Details form with required controls and set that's properties.

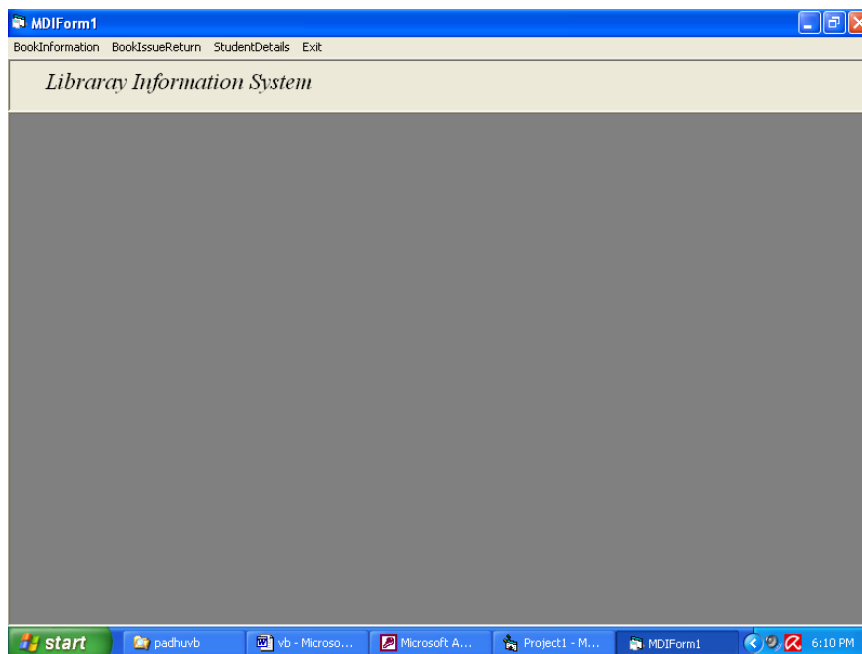
Step 6 : Design a database for maintaining Library process.

Step 7 : Connect the database to the form and display the details.

Step 8 : Using the events on controls do the necessary processes.

Step 9 : Display the Book and Student details and data reports.

Form Design



Form1

Addnew Delete Save Report Exit

Book Information

Access no.

Book Name <> <|

Subject

Author <<| Book ir |>>

Publisher

Book no.

start padhuvb vb - Microsoft Word Microsoft Access 3 Visual Basic 6:11 PM

Form2

Addnew Delete Save Edit Report Exit

Book Issues and Return

Access no. << >>

Subject

Book name <<| Book I |>>

Reg no.

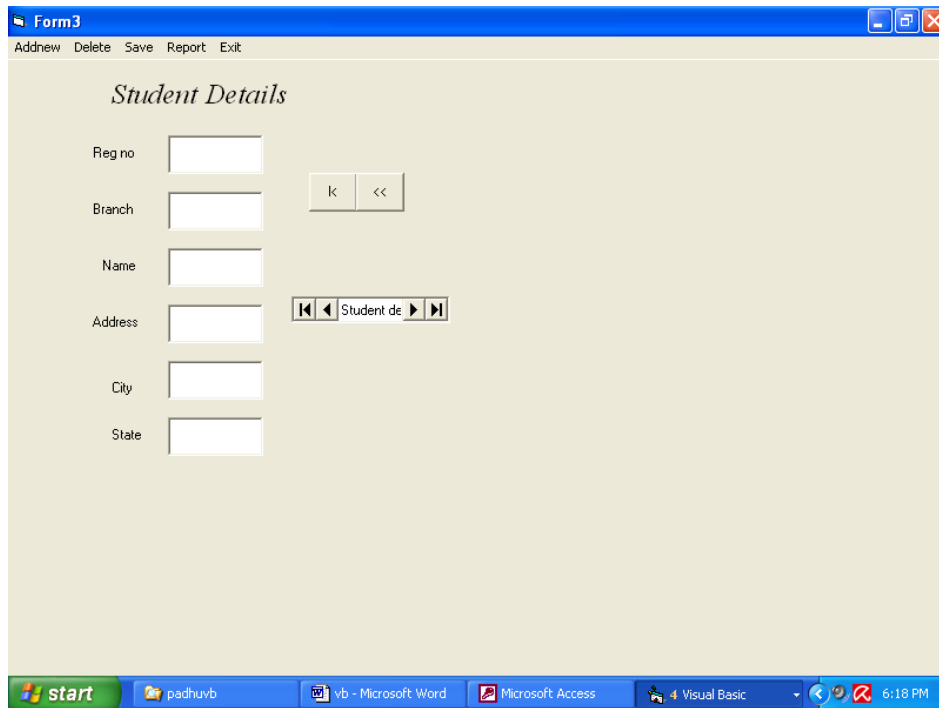
Issue date

Due date

Return date

Fine

start padhuvb vb - Microsoft Word Microsoft Access 3 Visual Basic 6:16 PM



Program

Library Information System

```

Private Sub b_infor_Click()
Form1.Show
End Sub
Private Sub b_Issue_Click()
Form2.Show
End Sub
Private Sub exit_Click()
End
End Sub
Private Sub MDIForm_Click()
Me.WindowState = 2
End Sub
Private Sub S_Details_Click()
Form3.Show
End Sub
Form 1
Private Sub add_Click()
Data1.Recordset.AddNew

```

```

End Sub
Private Sub Command1_Click()
Form2.Show
End Sub
Private Sub Command2_Click()
Form3.Show
End Sub
Private Sub del_Click()
Data1.Recordset.Delete
MsgBox "Record deleted"
End Sub
Private Sub exit_Click()
End
End Sub
Private Sub Form_Load()
Me.WindowState = 2
End Sub
Private Sub report_Click()
DataReport1.Show
End Sub
Private Sub save_Click()
Data1.Recordset.Update
MsgBox "Record saved"
End Sub
Form2
Private Sub add_Click()
Data1.Recordset.AddNew
End Sub
Private Sub Command1_Click()
Form1.Show
End Sub
Private Sub Command2_Click()
Form3.Show
End Sub
Private Sub del_Click()
Data1.Recordset.Delete
MsgBox "Record deleted"
End Sub

```

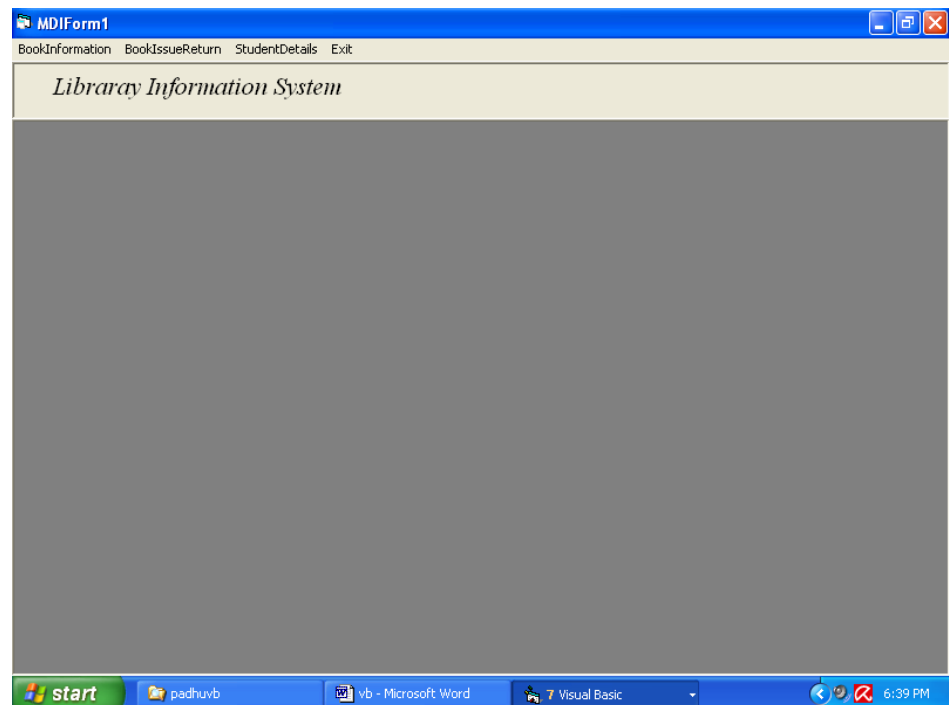
```

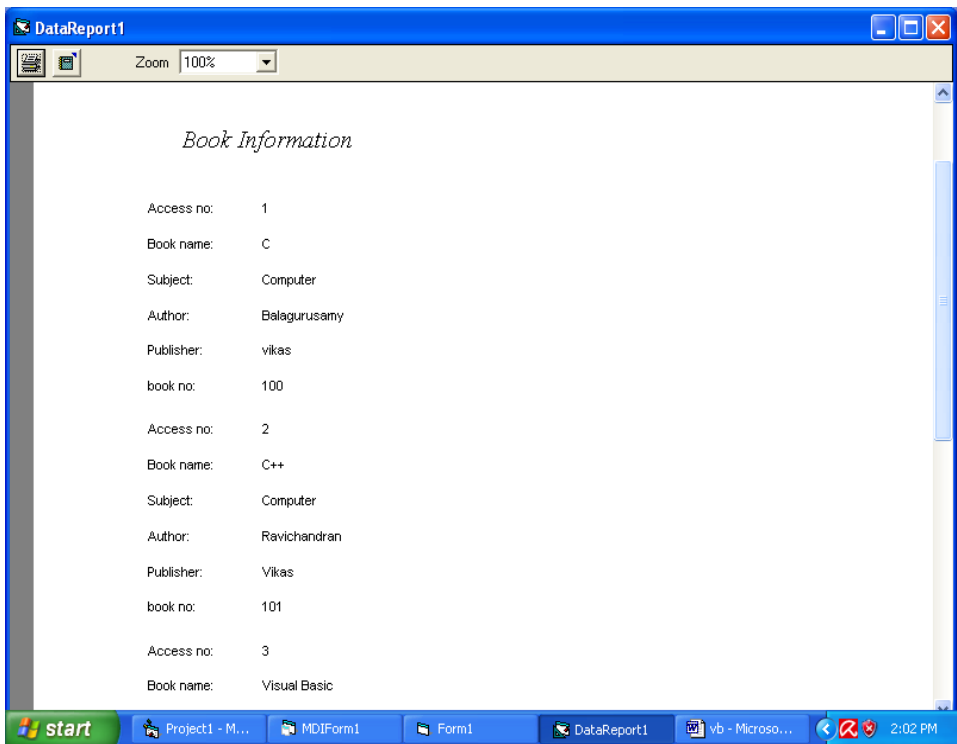
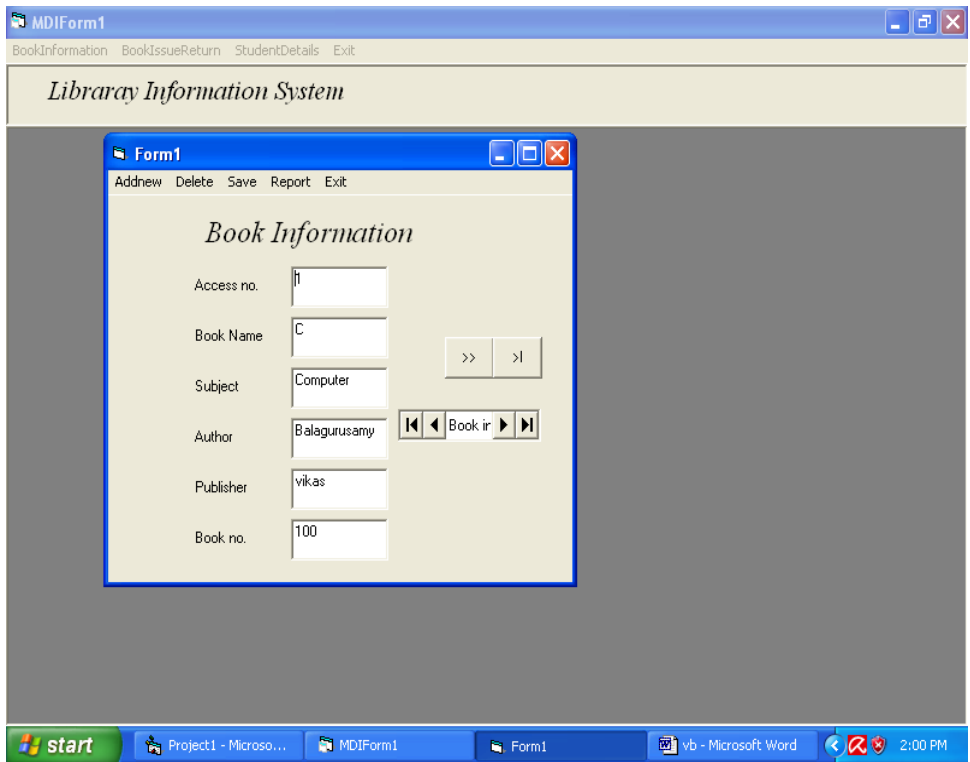
Private Sub edit_Click()
Data1.Recordset.edit
End Sub
Private Sub exit_Click()
End
End Sub
Private Sub Form_Load()
Me.WindowState = 2
End Sub
Private Sub report_Click()
DataReport2.Show
End Sub
Private Sub save_Click()
Data1.Recordset.Update
MsgBox "Record saved"
End Sub
Private Sub Text7_LostFocus()
Dim d As Variant
d = Val(Text7.Text) - Val(Text6.Text)
If d > 0 Then
Text8.Text = d * 0.5
MsgBox (d & " Days passed")
End If
End Sub
Form 3
Private Sub add_Click()
Data1.Recordset.AddNew
End Sub
Private Sub Command1_Click()
Form1.Show
End Sub
Private Sub Command2_Click()
Form2.Show
End Sub
Private Sub del_Click()
Data1.Recordset.Delete
MsgBox "Record deleted"
End Sub

```

```
Private Sub exit_Click()  
End  
End Sub  
Private Sub Form_Load()  
Me.WindowState = 2  
End Sub  
Private Sub report_Click()  
DataReport3.Show  
End Sub  
Private Sub save_Click()  
Data1.Recordset.Update  
MsgBox "Record saved"  
End Sub
```

Output





Form2
 Addnew Delete Save Edit Report Exit

Book Issues and Return

Access no.

Subject << >>

Book name <<< Book 1 >>>

Reg no.

Issue date

Due date

Return date

Fine

Windows taskbar: start | padhuvb | vb - Microsoft Word | 5 Visual Basic | 6:35 PM

DataReport2
 Zoom 100%

Book Issues and Return

Access no: 1
 Subject: computer
 Book name: Ansi C
 Reg no: 123
 Issue date: 2/11/2007
 Due date: 3/12/2007
 Return date: 4/12/2007
 Fine: 0.5

Access no: 3
 Subject: computer
 Book name: c++
 Reg no: 2123
 Issue date: 12/6/1988
 Due date: 12/9/1988

Pages: <<< 1 >>>

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Form3

Address Delete Save Report Exit

Student Details

Reg no: 111

Branch: Computer

Name: Padma

Address: Vembadithalam

City: Salem

State: Tamil nadu

Navigation: [K] << [Student de] >>

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DataReport3

Zoom: 100%

Student details

Reg no:	111
Branch:	Computer
Name:	Padma
Address:	Vembadithalam
City:	Salem
State:	Tamil nadu
Reg no:	222
Branch:	Computer
Name:	Sumathi
Address:	Attayampatti
City:	Salem
State:	Tamil nadu

Pages: 1

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