



CHAPTER 8: DATABASE CONNECTIVITY TO MYSQL

MYSQL provides connectivity for client applications developed in the Java programming language via **JDBC driver**, which is called “**MYSQL Connector/J**”.

There are four main classes in the JDBC API for database connectivity:

- (i) **Driver Manager Class:** It locates and logs on to the database and returns a connection object.
- (ii) **Connection Class:** It manages the communication between Java & MySQL.
- (iii) **Statement Class:** It contains SQL string that is submitted to the database. An SQL Select statement returns a ResultSet object that contains the data retrieved as the result of SQL statement.
- (iv) **ResultSet Class:** A result set is the logical set of records that are fetched from the database by executing a query and made available to the application program. It accesses, analyzes and converts data values returned by the SQL select statement.

Steps for Creating Database Connectivity Application:

(i) **Import the package required for database programming:**

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.Statement;
import java.sql.ResultSet;
```

or import java.sql.*

(ii) **Register the JDBC driver with Driver Manager:**

```
Class.forName("java.sql.Driver");      or      Class.forName("com.mysql.jdbc.Driver");
```

(iii) **Open a connection:**

```
Connection conn = DriverManager.getConnection("jdbc:mysql://localhost:3306/test", "root",
"tiger");
```

Test is the name of SQL database, root is user id and tiger is MySQL password.

(iv) **Execute a query:** Create an object of type Statement using createStatement() method. Then execute the SQL statement using executeQuery() method, in case of SELECT query, or executeUpdate() method, in case of UPDATE, INSERT or DELETE or Create Table query. It returns an object of resultSet type.

```
Statement stmt = conn.createStatement();
String sql= "Select id, name from employee";
ResultSet rs = stmt.executeQuery(sql);
```

OR



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```
sql = "delete from employee";
ResultSet rs = stmt.executeUpdate(sql);
```

ResultSet Cursor: When a ResultSet object is created, the cursor is placed just before the first row. To move the cursor to first row use `rs.next()` or `rs.first()`. `rs.next()` forwards the cursor by one row – since Initially cursor is before the first row, first `rs.next()` will move the cursor to first row. Any following `rs.next()` commands forward the cursor by one row.

(v) Extract data from result set: This step is required if data is fetched from the database i.e., in case of SELECT query. To retrieve the data `ResultSet.getType()` method is used. i.e., `getInt()`, `getLong()`, `getString()`, `getFloat()`, `getDate()` etc. All these method takes parameter as Column Name or Column Index. Column Index is the order of the column.

```
int id = rs.getInt("id");           // if more than one column exists in result set with same
Column Name then the first one is returned.
or int id = rs.getInt(1);           // If id is first field of table.
String name = rs.getString("name");
```

Retrieving data from result set if it contains multiple rows:

Use **rs.next()** method. In addition to moving a result-set by one row, it also returns true if cursor is positioned on a row and false if cursor is positioned after the last row.

```
int id; String name;
while (rs.next()){ id = rs.getInt(1);
name = rs.getString(2); // display or process here.}
```

(v) Clean up the environment: Close all database resources using `close()` method.

```
rs.close();           stmt.close();           conn.close();
```

Sample Questions:

1. What is a connection and a result set?
2. What does Driver Manager do?
3. Write a statement to open a connection object namely `myconn` for a MySQL database namely school.
4. What are the steps to connect to a database from the Java application?

UNIT- 2: Questions & Answers

Very Short answer types questions

1. Write the expression to print the value of a variable "Sum" of type int in a label.
Ans: `jLabel1.setText(""+Sum);`
2. Name any two commonly used method of ListBox.
Ans: `getSelectedIndex()` and `getSelectedValue()`
3. Write code to add an element ("IP") to a list (MyList) at the beginning of the list.
Ans: `MyList.add(0,"IP");`
4. Write command to display a message dialog to display prompt as "Hi! Everybody".
Ans: `JOptionPane.showMessageDialog(null,"Hi! Everybody");`
5. How would you make a combo box editable? Ans: By setting its editable property to true.



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6. Name the different list type controls offered by Java Swing.
Ans: (i) `JListBox` (ii) `JComboBox`
7. In JDBC coding, what method is used to move to last record of the recordSet with name `recSet`?
Ans: `recSet.last()`;
8. What is the name of event listener interface for action events?
Ans `ActionPerformed`
9. Name the inheritance type which is not supported by JAVA.
Ans Multiple inheritance
10. What will be the value of `textField1` after execution of following code:
`textField1.setText("Computer".substring(3,3));`
Ans: put
11. Name the character set supported by Java.
Ans: Unicode.
12. What will be the value of `b` if initial value if `a` is 13 (i) `b= ++a` (ii) `b= a++`
Ans: (i) 14 (ii) 13
13. Name the 4 essential class libraries that we need to import for setting up the connection with the database and retrieve data from the database.
Ans: `DriverManager`, `Connection`, `Statement`, `ResultSet`
14. What is Event? Ans. An Event refers to the occurrence of an activity.
15. What will be displayed in `TextArea` after executing the following? `TextArea1.setText("India \n is a great \t country");`
Ans: India
is a great country.
16. Name any Swing control which is invisible on the Frame?
Ans: `ButtonGroup`
17. How one can make a text field un-editable on a frame?
Ans: `textField1.setEditable(false);`
18. What is Message? Ans. A Message is the information/request sent to the application.
19. Which property of list box is used to add values in the list?
Ans: Model Property

Short Answers Type Questions (2 Marks)

1. What are Access Specifiers? How Access is controlled for members of Super class?
Ans: Access specifier tells a compiler about the accessibility of a data member of a class in a java program.
 - a) Private: Private members of a class can just be accessed inside the class and are hidden outside the class.
 - b) Protected: A class member with protected access specifier can be inherited by a sub class but is not accessed outside the parent class.
 - c) Public: A Class member with public access specifier is accessible outside the class.
 - d) Default: These members are accessible only in the class that are in the same package class i.e., in their own classes
2. What is a Method (Function)?
Ans: A Method or function is sequence of statement which is written to perform a specific job in the application.



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3. What do you mean by parsing?
Ans: The Parsing refers to converts textual data from GUI component into numeric type.
Byte.parseByte(String s) – string into byte.
4. What is a variable? Explain with example.
Ans: A variable is named memory location, which holds a data value of a particular data type.
Example: double sum;
5. What is 'Scope' of a variable? Explain.
Ans: The area of program within which a variable is accessible, is known as its scope. A variable can be accessed within the block where it is declared.
6. What is Focus?
Ans: Focus is the ability to receive user input/ response through Mouse or Keyboard.
7. What is casting? When do we need it?
Ans: Casting is a conversion, which uses the cast operator to specify the type name in parenthesis and is placed in front of the value to be converted. For example: Result = (float) total / count ; They are helpful in situations where we temporarily need to treat a value as another type.
8. How is the if...else if combination more general than a switch statement?
Ans: 1. switch statement only compares for equality and if-else can evaluate multiple conditions.
2. switch cannot handle ranges whereas if-else can.
3. In switch only one variable can be compared.
9. What is the purpose of break statement in a loop?
Ans: The break statement terminates the loop.
10. What is an abstract class and abstract method?
Ans: An Abstract Class is the one that simply represents a concept and whose objects can't be created. It is created through the use of keyword abstract. Abstract methods are methods with no method statements. Subclasses must provide the method statements for the inherited abstract methods.
11. What is a container and child control?
Ans: A container is a special type of control that can hold other components. Some Swing Containers are JPanel, JFrame and JDialog. The components contained in a container are called child control.e.g Textfield, Radio Button.
12. Differentiate between JDBC and ODBC?
Ans: JDBC (Java Database Connectivity) is developed by Sun Java for the purpose of connecting java applications with a variety of relation database systems like MySQL or Oracle. On the other hand, ODBC (Open Database Connectivity) is a system developed by Microsoft to connect Microsoft based programming application (like visual basic) with a variety of relational databases.
13. What are the main tasks of JDBC?
Ans: Mainly JDBC perform the following:
 - a) Establishes a connection with a relational database
 - b) Sends SQL queries/ statements to the database
 - c) Processes the results obtained from the database server.



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Programming Problems

1. How many times, the following loop gets executed? `i=0; while(i>20) { //Statements }`
 Ans: 0 times
2. Write a java program to calculate the sum of all the No. divisible by 5 in the range 1 to 50.
 Ans: `int sum=0; for(int i=1;i<=50;++i) { if(i%5==0) sum=sum+i; } jLabel1.setText(""+sum);`
3. Write method in java that takes a number returns the sum of its digits.
 Ans: `int sumdig(int n)
 { int sum=0, r;
 while(n!=0)
 { int r=n%10;
 n=n/10;
 sum=sum+r; }
 return (sum); }`
4. How many times, the following loop gets executed? `int i=0; do { //Statements }while(i>20);`
 Ans: 1 time.
5. Find the output of the code:
`int f=2, i=1; do {f*=i; }while(++i<5); jTextField1.setText (""+f);`
 Ans: 48
6. Write the output :
 (i) `jTextField1.setText("Hello".charAt(1));`
 Ans: e
 (ii) `jTextField1.setText("Pranam".substring(3));`
 Ans: nam
7. Write the value stored in variable y after executing the following code:
`int x , y = 0; for(x=1;x<5;++x) y=x++;`
 Ans: 3
8. What will be the contents of jTextField after executing the following statement:
`int mynum=3; mynum=mynum-1; if(mynum>5) jTextField1.setText(Integer.toString(mynum));
else jTextField1.setText(Integer.toString(mynum*4));`
 Ans: 8
9. Find the output of the following code:
`int First=11; int Second=50; First++; if(First+Second>60) jLabel1.setText("Qualified");
else jLabel1.setText("Not Qualified");`
 Ans: Qualified
10. What will be the value of j and k after execution of the following code:
`int j=5,k=15; if(k>=j) {k=j; j=k;}`
 Ans: j= 5 k= 5
11. Find the output
`int fnum=6, snum=9; if(fnum>1 || snum>6) if(fnum>6) jTextField1.setText("Code Worked");
else jTextField1.setText("Code Might Work"); else jTextField1.setText("Code will not Work");`
 Ans: Code Might Work
12. What will be the content of the JTextArea1 after executing the following code?
`int Num =2; do { jTextField1.setText(Integer.toString(++Num)+"\n"); Num= Num + 1;
}while(Num<=10);`



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Ans: 9

13. `String s = "Kendriya Vidyalaya"; jTextField1.setText(s.length()+"");
jTextField2.setText(Math.round(2.54)+"");`

Ans: 18 , 3

14. Give the value of a after executing following Java code.

`int p=9,q=11,a=6,b=4; while(p<=q) { if(p%2==0) a=a+b; else a=a-b; p=p+1; }`

Ans: 2

15. What will be the output produced by following code fragment?

`float x=5, y=2; int z=(int)(x/y); switch(z) { case 1: x=x+2; case 2: x=x+3; default: x=x+1; }
System.out.println("value of x:"+x);`

Ans: value of x: 9.0

16. Give the output of the following code:

`int m=50; while(m>0) { if(m<10)break; m=m-10; } System.out.println("m is"+m);`

Ans: m is 0

17. What will be the contents of jTextField1 and jTextField2 after executing the following code:

`String s = "Big Brother"; jTextField1.setText(s.length()+"");
jTextField2.setText(s.toLowerCase());`

Ans: jTextField1:11 jTextField2: Big Brother

Errors finding and conversion questions:

1. Rewrite the code after making correction.

`int sum; value; inct; int i
for(i==0; i<=10; i++)
sum=sum+i;
inct++;`

Ans: `int sum, value, inct;
for(int i=0; i<=10; i++)
sum=sum+i;
inct++;`

2. The following code has some errors. Rewrite the corrected code.

`int i=2, j=5;
while j>i {
jTextField1.getText("j is greater"); j--; ++i; }
JOptionPane.showMessageDialog("Hello");`

Ans: `int i=2,j=5;
while(j>i) {
jTextField1.setText("j is greater"); j--; ++i; }
JOptionPane.showMessageDialog("null","Hello");`

3. Find out errors and rewrite the code:

`M=1; N=0;
For(;m+n<19;++n)
System.out.println("hello");
M=m+10;`



Informatics Practices

```
Ans: int m=1, n=0;
for(;m+n<19;++n)
System.out.println("hello");
m=m+10;
```

4. Rewrite the following program code using for loop:

```
int i=0, sum=0; while(i<10) {sum+=i; i+=2; }
```

```
Ans: int i, sum=0; for(i=0; i<10; i+=2) {sum+=i; }
```

5. The following code has some error(s). Rewrite the correct code.

```
int y=3;
switch(y);
{
    case 1:      System.out.print("Yes its One");
    Case 2:      System.out.println("Yes its more than Two"); break;
    case else:   System.out.print("Invalid Number");           }
```

```
Ans:  int y=3;
switch(y)
{
    case 1: System.out.print("Yes its One"); break;
    case 2: System.out.println("Yes its more than Two"); break;
    default: System.out.print("Invalid Number");
}
```

6. Rewrite the following code using while loop :

```
int i, j;
for(i=1; i<=4; i++) {
for(j=1; j<=i; ++j) {
System.out.print(j); }
System.out.println(); }
```

```
Ans: int i=1, j;
while(i<=4) { j=1;
while (j<=i) {
System.out.print(j); ++j; }
i++;
System.out.println(); }
```

7. Rewrite the following code using while loop:

```
int i, j;
for (i=1, j=2; i<=6; i++, j+=2)
System.out.println(i++);
System.out.println("Finished!!!");
```

```
Ans: int i=1, j=2;
while (i<=6) {System.out.println(i++); i++; j+=2;}
System.out.println("Finished!!!");
```

8. Write an alternative code (Using if) of given code that saves on number of comparisons.

```
if (a==0) System.out.println("zero");
if (a==1) System.out.println("one");
if (a==2) System.out.println("two");
```



Informatics Practices

```
if (a==3) System.out.println("three");
Ans: if (a==0) System.out.println("zero");
else if (a==1) System.out.println("one");
else if (a==2) System.out.println("two");
else if (a==3) System.out.println("three");
```

9. Rewrite the following code using for loop.

```
int i=0;
while(++i<20) { if( i==8) break;
System.out.println(i++); }
Ans: int i;
for (i=1; i<20; ++i) { if( i==8) break;
System.out.println(i++);}
```

10. Rewrite the following if-else statement using switch-case statement.

```
char ch = 'A';
if (ch == 'A')                      System.out.println("Account");
if ((ch == 'C') || (ch == 'G'))      System.out.println("Admin");
if (ch == 'F')                      System.out.println("Advisor");
Ans: char ch = 'A';
switch (ch) {
case 'A' : System.out.println("Account"); break;
case 'C':
case 'G': System.out.println("Admin"); break;
case 'F' : System.out.println("Advisor"); }
```

11. Write the equivalent switch case for the following code:

```
if (num1 == 1)
    jTextField1.setText("Number is one");
else if (num1 == 2)
    jTextField1.setText("Number is two");
else if (num1 == 3)
    jTextField1.setText("Number is three");
else
    jTextField1.setText("Number is more than three");
```

```
Ans: switch(num1) {
    case 1 : jTextField1.setText("Number is one"); break;
    case 2 : jTextField1.setText("Number is two"); break;
    case 3 : jTextField1.setText("Number is three"); break;
    default : jTextField1.setText("Number is more than three"); }
```

Question Based on Application Design

1. Design an application for Movie Booking system and answer the following questions?
 - a) When the user select different seat type, then its price should be displayed in the Label.
 - b) If the user enters an invalid no of seats i.e. less than 1, then an error message should be displayed in the dialog box.



Informatics Practices

- c) When the user click at the Book Seats button, then total amount (calculated as no. of seats * price per seat) should be displayed along with payment method, next to the push button. Price per seat depend upon the seat type: Stall 625/- Circle 750/- Upper Circle 850/- Box 1000/-

Ans:

```
(a) if (jRadioButton1.isSelected())
```

```
jLabel2.setText("625");
```

```
if (jRadioButton2.isSelected())    jLabel2.setText("750");
```

```
if (jRadioButton3.isSelected())    jLabel2.setText("850");
```

```
if (jRadioButton4.isSelected())    jLabel2.setText("1000");
```

```
(b) int s = Integer.parseInt(jTextField1.getText());
```

```
if (s < 1) JOptionPane.showMessageDialog(null, "Error! Enter at least one seat.");
```

```
(c) int s = Integer.parseInt(jTextField1.getText());
```

```
int p = Integer.parseInt(jLabel2.getText());
```

```
int tp = s * p;
```

```
if (jRadioButton5.isSelected())
```

```
    jLabel5.setText("Cash Payment of " + tp);
```

```
if (jRadioButton6.isSelected())
```

```
    jLabel5.setText("Visa Payment of " + tp);
```

```
if (jRadioButton7.isSelected())
```

```
    jLabel5.setText("American Express Payment of " + tp);
```

```
if (jRadioButton8.isSelected())
```

```
    jLabel5.setText("Master Card Payment of " + tp);
```

2. Design the following application and answer the questions that follow :

(a) Write the code for the Clear button to clear all the text fields and check box. Set the default choice in the radio button as Fixed Deposit.

(b) Write the code for the calculate button to calculate compound interest and amount and display the values in the txtInterest and txtAmount depending on principal, rate and time.



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ICICI Bank

Principal Time

Rate

☐ Senior Citizen

☐ Fixed Deposit
☐ Recurring Deposit

Interest Amount

Rate is calculated based on the time according to the following table:

| Account | Time | Rate |
|-------------------|------------|------|
| Fixed Deposit | <=2 | 8% |
| | >2 and <=5 | 9% |
| | >5 | 10% |
| Recurring Deposit | <=2 | 9% |
| | >2 and <=7 | 10% |
| | >7 | 12% |

An additional rate of 2% is given to the senior citizens i.e. if the Senior citizen (chkSR checkbox) is checked.

Ans:

```
(a) jTextField1.setText("");
jTextField2.setText("");
jTextField3.setText("");
jRadioButton1.setSelected(true);
jCheckBox1.setSelected(false);

(b) int p = Integer.parseInt(jTextField1.getText());
int t = Integer.parseInt(jTextField2.getText());
int r = 0;
if (jRadioButton1.isSelected())
{
    if (t <= 2) r = 8;
    else if (t > 2 && t <= 5) r = 9;
    else r = 10;
}
else {
    if (t <= 2) r = 9;
    else if (t > 2 && t <= 7) r = 10;
    else r = 12;
}
if (jCheckBox1.isSelected()) r = r + 2;
float amt = p*Math.pow((1+(r/100)),t);
float ci = amt - p;
txtInterest.setText("" + ci);
txtAmount.setText("" + amt);
```



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3. Consider the following application and answers the following questions:

Student Record

First Term Marks

Second Term Mark

☐ NCC Cadet

☐ Medical

☐ Non Medical

Percentage

Grade

The grading criteria for the two streams are given below:

| Stream | Percentage | Grade |
|-------------|----------------------|-------|
| Medical | ≥ 80 | A |
| | ≥ 60 and < 80 | B |
| | < 60 | C |
| Non-Medical | ≥ 75 | A |
| | ≥ 50 and < 75 | B |
| | < 50 | C |

- Write code for Calculate Percentage button to calculate the Percentage after finding the total marks of I term and II term. Also ensure that NCC cadet gets an increment of 3% in their percentages.
- Write code for Calculate grade button to calculate the grade depending up on the stream selected according to the given criteria.

Ans:

```
(a) int f= Integer.parseInt(jTextField1.getText());
int s= Integer.parseInt(jTextField2.getText());
int tot = f + s;
float p= tot / 2;
if (jCheckBox1.isSelected()) p = p + 3;
jLabelp.setText("" + p);
```

```
(b) String g;
If (jRadioButton1.isSelected())
{ if(p >= 80) g = "A";
else if(p >= 60 && p<80) g = "B";
else g = "C"; }
```



Informatics Practices

```
else { if(p >= 75) g = "A";
      else if(p >= 50 && p < 75) g = "B";
      else g = "C"; }
jLabelp.setText("" + p);
jLabelg.setText("" + g);
```

4. Mrs. Anju works in a Manufacturing company. To calculate total wages he has developed the following GUI in NetBeans. Male and female workers are respectively paid Rs. 350/- per day and Rs. 400/- per day. Skilled workers are paid extra at the rate of Rs. 200/- day. Male and female workers from rural areas are paid 20% less per day.
- When Calculate Wage button is clicked, the total wages is calculated as per the given criteria and displayed in total wage textbox.
 - When Clear button is clicked, all the textboxes should be cleared and radio button, checkbox should be selected.
 - Close the application when Quit button is pressed.

Ans:

```
(a) int w = 0;
    int d = Integer.parseInt(jTextField2.setText());
    if (jRadioButton1.isSelected())
        w = 350;
    else w = 400;
    if (jCheckBox1.isSelected())
        w = w + 200;
    if (jRadioButton3.isSelected())
        w = w - (w * 20) / 100;
    int cw = d * w;
    jLabel6.setText("" + cw);
(b) jTextField1.setText("");
    jTextField2.setText("");
    jRadioButton1.setSelected(false);
    jRadioButton2.setSelected(false);
```



Informatics Practices

```
jRadioButton3.setSelected(false);
jRadioButton4.setSelected(false);
jCheckBox.setSelected(false);
(c) System.exit(0);
```

5. The following interface has been built for an Ice-Cream Parlor using Netbeans. The parlor offers three varieties of ice-cream - vanilla, strawberry, chocolate. Vanilla ice-cream costs Rs. 40, Strawberry Rs. 45 and Chocolate Rs. 55. A customer can choose one or more ice-creams, with quantities more than one for each of the variety chosen. To calculate the bill, parlor manager selects the appropriate check boxes according to the varieties of ice-cream chosen by the customer and enter their respective quantities.

| Ice cream | Quantity | Price | Total |
|--|----------------------|--|---|
| <input type="checkbox"/> Strawberry | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> Chocolate | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> Vinella | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Total Amount <input type="text"/> | | <input type="button" value="Calculate"/> | <input type="button" value="Clear"/> <input type="button" value="Close"/> |

Write Java code for the following:

- On the click event of the button 'Calculate', the application finds and displays the total bill of the customer. It first displays the rate of various ice-creams in the respective text fields. If a user doesn't select a check box, the respective ice-cream rate must become zero. The bill is calculated by multiplying the various quantities with their respective rate and later adding them all.
- On the Click event of the clear button all the text fields and the check boxes get cleared.
- On the click event of the close button the application gets closed.

Ans:

```
(a) int r1, r2, r3, q1, q2, q3, a1, a2, a3, gt;
    if (jchkStrawberry.isSelected()) jTxtPriceStrawberry.setText("35");
    else jTxtPriceStrawberry.setText("0");
    if (jChkChocolate.isSelected()) jTxtPriceChocolate.setText("50");
    else jTxtPriceChocolate.setText("0");
    if (jChkVinella.isSelected()) jtxtPriceVinella.setText("30");
    else jtxtPriceVinella.setText("30");
    r1 = Integer.parseInt(jTxtPriceStrawberry.getText());
    r2 = Integer.parseInt(jTxtPriceChocolate.getText());
    r3 = Integer.parseInt(jtxtPriceVinella.getText());
    q1 = Integer.parseInt(jTxtQtyStrawberry.getText());
    q2 = Integer.parseInt(jTxtQtyChocolate.getText());
```



Informatics Practices

```
q3 = Integer.parseInt(jTxtQtyVinella.getText());
a1 = r1 * q1;
a2 = r2 * q2;
a3 = r3 * q3;
jTxtAmtStrawberry.setText("" + a1);
jTxtAmtChocolate.setText("" + a2);
jTxtAmtVinella.setText("" + a3);
gt = a1 + a2 + a3;
jTxtTotalAmt.setText("" + gt);
```

(b)

```
jTxtPriceStrawberry.setText("");
jTxtPriceChocolate.setText("");
jtxtPriceVinella.setText("");
jTxtQtyStrawberry.setText("");
jTxtQtyChocolate.setText("");
jTxtQtyVinella.setText("");
jTxtAmtStrawberry.setText("");
jTxtAmtChocolate.setText("");
jTxtAmtVinella.setText("");
jchkStrawberry.setSelected(false);
jChkChocolate.setSelected(false);
jChkVinella.setSelected(false); }
```

(c) System.exit(0);

6. Ms. Radha works in a shopping mall. To calculate net payable amount she has developed the following GUI in NetBeans.

The shop accepts payments in three modes- Cash, Debit Card, Credit Cards.

The discount given as per mode of payment is as follows-

| Mode of payment | Discount |
|-----------------|----------|
| Cash | 12% |
| Debit Card | Nil |
| Credit Card | 8% |

If the Member check box is checked then the customer gets an additional discount of 5% on net payable amount.

- I. Write the code to make the textfields for Discount(txtDiscount) and Net Payable (txtNetPayable) uneditable.
- II. Write code to do the following-
 - a) When Calculate button is clicked the discount and net payable amount is calculated as per the given criteria and displayed in discount and net payable text boxes.
 - b) When Clear button is clicked all the text boxes should be clear.



Informatics Practices

III. Close the application when Exit button is pressed.

Ans: I. `txtDiscount.setEditable(false);`
`txtNetPayable.setEditable(false);`

II. (a) `double q, p, d=0, np, fp, d1=0, d2, amt;`
`q=Double.parseDouble(qtytf.getText());`
`p=Double.parseDouble(pricetf.getText());`
`amt=q*p;`
`if (cashrb.isSelected())`
`d=amt*0.12;`
`else if (dcrb.isSelected())`
`d=amt*0.0;`
`else if (ccrb.isSelected())`
`d=amt*0.08;`
`np=amt-d;`
`if (mcb.isSelected())`
`d1=np*0.05;`
`fp=np-d1;`
`d2=d+d1;`
`disctf.setText(""+d2);`
`nptf.setText(""+fp);`
 (a) `qtytf.setText("");`
`pricetf.setText("");`
`disctf.setText("");`
`nptf.setText("");`

IV. `System.exit(0);`

7. Alpha Chemicals PVT Ltd has asked his programmer to develop the following GUI application in Netbeans:

Service Charges Rates are as follows:

| Class of City | Rate of Service Charges |
|---------------|-------------------------|
| I | 5% of sales price |
| II | 10% of sales price |
| III | 15% of sales price |

Write java code for the following:



Informatics Practices

- a. To calculate service charges depending on the selection of radio button. This code will execute after click on the calculate service charges?
- b. To calculate net price when Calculate Net price button will be clicked.
- c. When exit button will be clicked application should be automatically closed.

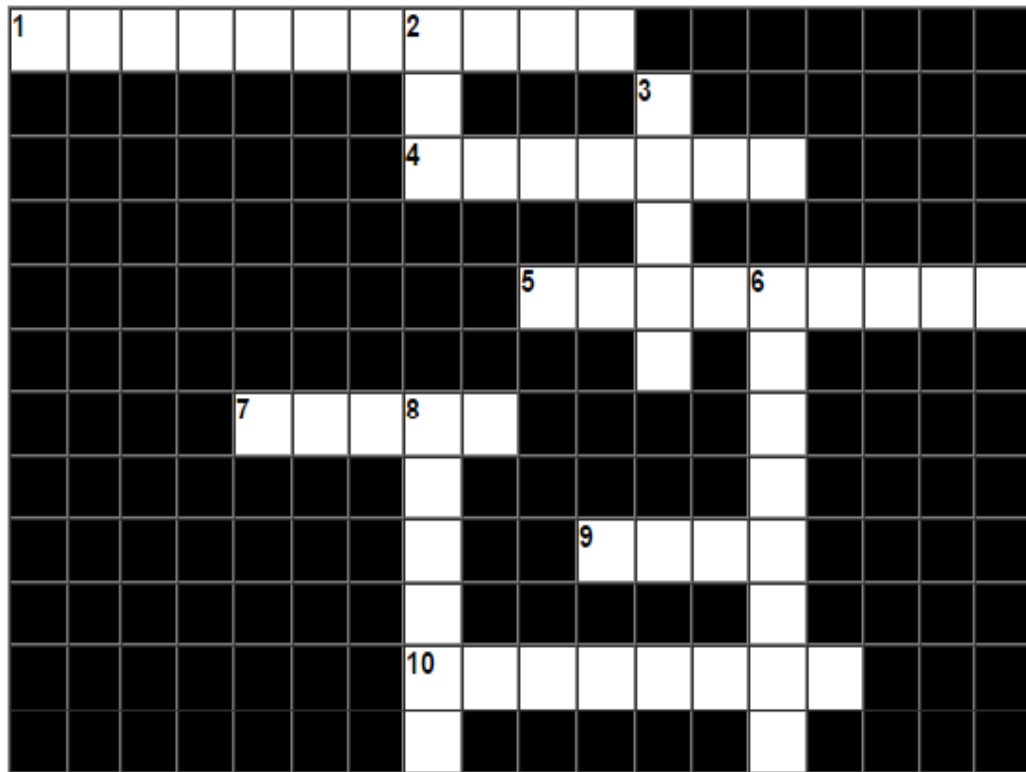
Ans:

```
(b) float q = Float.parseFloat(jTextField2.getText());
    float p = Float.parseFloat(jTextField3.getText());
    float sp = q * p;
    jLabelsp.setText("" + sp);
    float sc;
    if (jRadioButton1.isSelected())
        sc = (5 * sp) / 100;
    else if (jRadioButton2.isSelected())
        sc = (10 * sp) / 100;
    else
        sc = (15 * sp) / 100;
    jLabelsc.setText("" + sc);
    (b) float sp = Float.parseFloat(jLabelsp.getText());
    float sc = Float.parseFloat(jLabelsc.getText());
    float np = sp + sc;
    jLabelnp.setText("" + np);
    (c) System.exit(0);
```



Informatics Practices

Crossword



Across:

- 1** To enforce mutual exclusion.
4 To mimic the click of a button.
5 Class containing SQL string for connectivity
7 Property of a list to set list data
9 Java Database Connectivity
10 A property of JTextArea

Down:

- 2** Rapid Application Development
3 Keyword to declare constant
6 A property of JPasswordField
8 Function to compare two strings

Answers:

1. Button Group 2. RAD 3. Final 4. DoClick 5. Statement
 6. Echochar 7. Model 8. Equals 9. JDBC 10. LineWrap