Practical no. 1

Aim: To learn the basic concepts of core java.

1. Write a java program to display "welcome to java".

Program:

```
public class _1_a{
    public static void main(String args[]){
        System.out.println("Welcome to java");
    }
}
```

Output:

```
Welcome to java
```

2. Write a java program to display your name 10 times.

Program:

```
public class _1_b {
    public static void main(String[] args){
        for(int i=1;i<=10;i++){
            System.out.println(i+". Jayesh");
        }
    }
}
```

Output:

```
1. Jayesh
2. Jayesh
3. Jayesh
4. Jayesh
5. Jayesh
6. Jayesh
7. Jayesh
8. Jayesh
9. Jayesh
10. Jayesh
```

3. Write a java program for reading data from keyboard using data input stream.

Program:

```
import java.io.DataInputStream;

public class _1_c {
    public static void main(String[] args) {
```

```
            DataInputStream input = new DataInputStream(System.in);

            int intValue = 0;
            float floatValue = 0.0f;
            try {
                System.out.print("Enter an integer: ");
                intValue = Integer.parseInt(input.readLine());

                System.out.print("Enter a floating-point number: ");
                floatValue = Float.parseFloat(input.readLine());

            } catch (Exception e) {}

            System.out.println("Integer number is "+intValue);
            System.out.println("Floating point number is
            "+floatValue);
        }
    }
```

Output:

```
Enter an integer: 34
Enter a floating-point number: 34.34
Integer number is 34
Floating point number is 34.34
```

Practical no. 2

Aim: Write a java program to illustrate the concept of array

1. Write a java program to accept and display single dimensional array.

Program:

```
public class _2_a {
    public static void main(String[] args){
        int array[];
        array = new int[5];

        System.out.print("Array elements are: ");
        for(int i=0;i<array.length;i++){
            array[i] = i+1;
            System.out.print(array[i]+" ");
        }
    }
}
```

Output:

```
Array elements are: 1 2 3 4 5
```

2. Write a java program to accept and display two-dimensional array.

Program:

```
import java.util.Scanner;

public class _2_b {
    public static void main(String[] args){
        try(Scanner input = new Scanner(System.in)){

            System.out.print("Enter number of rows for array:
            ");
            int row = input.nextInt();
            System.out.print("Enter number of colums for array:
            ");
            int col = input.nextInt();

            int arr[][] = new int[row][col];

            System.out.println("\nCreating the
            "+(row)+"x"+(col)+" array.");
            for(int i=0; i<row;i++){
                for(int j=0;j<col;j++){
                    System.out.print("Enter element for
                    ["+i+"]["+j+"] index: ");
```

```
                    arr[i][j] = input.nextInt();
                }
            }
            System.out.println("Array elements are: ");
            for(int i =0;i<row;i++){
                for(int j=0;j<col;j++){
                    System.out.print(arr[i][j]+" ");
                }
                System.out.println();
            }
        }
    }
}
```

Output:

```
Enter number of rows for array: 4
Enter number of columns for array: 3

Creating the 4x3 array.
Enter element for [0][0] index: 1
Enter element for [0][1] index: 2
Enter element for [0][2] index: 3
Enter element for [1][0] index: 4
Enter element for [1][1] index: 5
Enter element for [1][2] index: 6
Enter element for [2][0] index: 7
Enter element for [2][1] index: 8
Enter element for [2][2] index: 9
Enter element for [3][0] index: 0
Enter element for [3][1] index: 9
Enter element for [3][2] index: 8
Array elements are:
1 2 3
4 5 6
7 8 9
0 9 8
```

3. Write a java program to accept value of a, b, c which are co-efficient of quadratic equation.

Program:

```
import java.util.Scanner;
public class _2_c {
    public static void main(String[] args){
        int a,b,c;
        double root1, root2;

        try(Scanner input = new Scanner(System.in)){
```

```
            System.out.println("Enter values for a, b, c: ");
            a = input.nextInt();
            b = input.nextInt();
            c = input.nextInt();
        }

        double dtrmnt = (b * b) - (4 * a * c);

        if(dtrmnt>0){
            root1 = (-b + Math.sqrt(dtrmnt))/(2*a);
            root2 = (-b - Math.sqrt(dtrmnt))/(2*a);

            System.out.format("root1 = %.2f and root2 =
            %.2f",root1,root2);
        } else if(dtrmnt == 0){
            root1 = root2 = -b / (2 * a);
            System.out.format("root1 = root2 = %.2f;", root1);
        } else {
            double real = -b / (2 * a);
            double imaginary = Math.sqrt(-dtrmnt) / (2 * a);
            System.out.format("root1 = %.2f+%.2fi", real,
            imaginary);
            System.out.format("\nroot2 = %.2f-%.2fi", real,
            imaginary);
        }
    }
}
```

Output:

```
Enter values for a, b, c:
1
-2
-8
root1 = 4.00 and root2 = -2.00
```

Practical no. 3

Aim: Illustrate the use of various string methods.

1. Write a java program to demonstrate the use of String methods.

Program:

```
public class str {
    public static void main(String[] args){
        System.out.println("----Using the String Class----");

        char ch[]={'J','A','Y','E','S','H',' 
        ','V','E','R','M','A'};

        String s1 = "Jayesh Verma";
        String s2 = "Jayesh Verma";
        String s3 = new String("Jayesh R. Verma");
        String s4 = new String(ch);

        System.out.println(s1);
        System.out.println(s2);
        System.out.println(s3);
        System.out.println(s4);

        System.out.println("\n----Formatted String----");
        String name = "Jayesh";

        String sf1 = String.format("Name is %s",name);
        String sf2 = String.format("Value is %f",12039.124);
        String sf3 = String.format("Value is %20.7f",9720.3533);

        System.out.println(sf1);
        System.out.println(sf2);
        System.out.println(sf3);

        String sf4 = String.format("%d",101);
        String sf5 = String.format("%s","Jayesh Verma");
        String sf6 = String.format("%f",101.00);
        String sf7 = String.format("%x",105);
        String sf8 = String.format("%c",'J');

        System.out.println(sf4);
        System.out.println(sf5);
        System.out.println(sf6);
        System.out.println(sf7);
        System.out.println(sf8);

        System.out.println("\n----Integer Formatting----");
```

```
String si1 = String.format("%d",101);
String si2 = String.format("|%10d|",101);
String si3 = String.format("|%-10d|",101);
String si4 = String.format("|%d|",101);
String si5 = String.format("|%010d|",101);

System.out.println(si1);
System.out.println(si2);
System.out.println(si3);
System.out.println(si4);
System.out.println(si5);

System.out.println("\n----Substring Demo----");
String ss1 = "Jayesh R. Verma";
String substr1 = ss1.substring(+2);
System.out.println("Fetching the substring starting with
index 2: "+substr1);

String substr2 = ss1.substring(3, 13);
System.out.println("Fetching the substring starting with
index 3 and ending to index 13: "+substr2);

System.out.println("The length of string:
"+ss1.length());
System.out.println("String contains(. V)?:
"+ss1.contains(". V"));
System.out.println("Character at index 7:
"+ss1.charAt(7));

String se1 = "Jayesh";
String se2 = "jayesh";
String se3 = "Jayesh";

System.out.println("\nString 1: "+se1);
System.out.println("String 2: "+se2);
System.out.println("String 3: "+se3);
System.out.println("\n----Case Sensetive----");


System.out.println("String1 is equal to string2?:
"+se1.equals(se2));
System.out.println("String1 is equal to string3?:
"+se1.equals(se3));

System.out.println("\n----Case Insensetive----");
System.out.println("String1 is equal to string2 ?:
"+se1.equalsIgnoreCase(se2));
System.out.println("String1 is equal to string3 ?:
```

```
            "+se1.equalsIgnoreCase(se3));

            System.out.println("\n----Concat----");
            String fn = "Jayesh";
            String ln = " Verma";
            System.out.println(fn.concat(ln));

            System.out.println("\n----Replace----");
            System.out.println("Replacin 'Jay' with 'Jiv':
            "+fn.replace("Jay", "Jiv"));
            System.out.println("Index of V in last name is
            "+ln.indexOf("V"));
            System.out.println("Surname is lower
            case"+ln.toLowerCase());
            System.out.println("Surname is upper
            case"+ln.toUpperCase());

            String strg = "    It's 1:28pm now, Are you
            tired??    ";
            System.out.println("Before trim: "+strg);
            System.out.println("After trim: "+strg.trim());

        }
    }
```

Output:

```
 ----Using the String Class----
Jayesh Verma
Jayesh Verma
Jayesh R. Verma
JAYESH VERMA

----Formatted String----
Name is Jayesh
Value is 12039.124000
Value is         9720.3533000
101
Jayesh Verma
101.000000
69
J

----Integer Formatting----
101
|       101|
|101       |
|101|
|0000000101|
```

```
----Substring Demo----
Fetching the substring starting with index 2: yesh R. Verma
Fetching the substring starting with index 3 and ending to index
13: esh R. Ver
The length of string: 15
String contains(. V)?: true
Character at index 7: R

String 1: Jayesh
String 2: jayesh
String 3: Jayesh

----Case Sensetive----
String1 is equal to string2?: false
String1 is equal to string3?: true

----Case Insensetive----
String1 is equal to string2 ?: true
String1 is equal to string3 ?: true

----Concat----
Jayesh Verma

----Replace----
Replacin 'Jay' with 'Jiv': Jivesh
Index of V in last name is 1
Surname is lower case verma
Surname is upper case VERMA
Before trim:     It's 1:28pm now, Are you tired??
After trim: It's 1:28pm now, Are you tired??
```

2. Write a java program to accept n strigns and sort names in ascending order.

Program:

```
import java.util.Scanner;

public class sortNames {
    public static void main(String[] args) {
        try (Scanner input = new Scanner(System.in)) {
            int n;
            String temp;

            System.out.print("Enter number of names you want to
            enter: ");
            n = input.nextInt();
            input.nextLine();

            String[] names = new String[n];
```

```
                System.out.println("Enter " + n + " names: ");
                for (int i = 0; i < n; i++) {
                    names[i] = input.nextLine();
                }

                for (int i = 0; i < n; i++) {
                    for (int j = i + 1; j < n; j++) {
                        if (names[i].compareTo(names[j]) >= 0) {
                            temp = names[i];
                            names[i] = names[j];
                            names[j] = temp;
                        }
                    }
                }

                System.out.println("\nNames in sorted order: ");
                for (int i = 0; i < n; i++) {
                    System.out.println((i+1)+". "+names[i]);
                }
            }
        }
    }
```

Output:

```
Enter number of names you want to enter: 4
Enter 4 names:
Jayesh
Jay
Yash
Rohan

Names in sorted order:
1. Jay
2. Jayesh
3. Rohan
4. Yash
```

Practical no. 4

Aim: To learn the basic concepts of core java.

1. **Write a java program to create a package MyPack with the class Balance to check the account balance of user. If it is less than 0 then show message.**

Program:

```
package MyPack;

class Balance{
    String name;
    double bal;

    Balance(String n, double b){
        name = n;
        bal = b;
    }

    void show(){
        if (bal < 0 )
            System.out.println("-->");
        System.out.println(name+" :Rs"+bal);
    }
}

public class AccountBalance{
    public static void main(String[] args){
        Balance[] cur = new Balance[3];
        cur[0] = new Balance("Jayesh", 123.123);
        cur[1] = new Balance("Yash", 6234.6234);
        cur[2] = new Balance("Jay", -2856.25);

        for(int i=0;i<3;i++)
            cur[i].show();
    }
}
```

Output:

```
PS F:\CS\SEM 3\P2 - Core JAVA\programs\java practicals\4th prac>
javac -d . AccountBalance.java
PS F:\CS\SEM 3\P2 - Core JAVA\programs\java practicals\4th prac>
java MyPack.AccountBalance
Jayesh :Rs123.123
Yash :Rs6234.6234
-->
Jay :Rs-2856.25
```

Explanation :

1. javac -d . Program_name.java
-d <directory> Specify where to place generated class files
The above command states that put Program_name.class in the current
directory. Hence package MyPack will be automatically created with 2 class
files AccountBalance.class and Balance.class. MyPack will be placed in
jdk1.6\bin directory.

2. Write a java program to create a package and display a message.

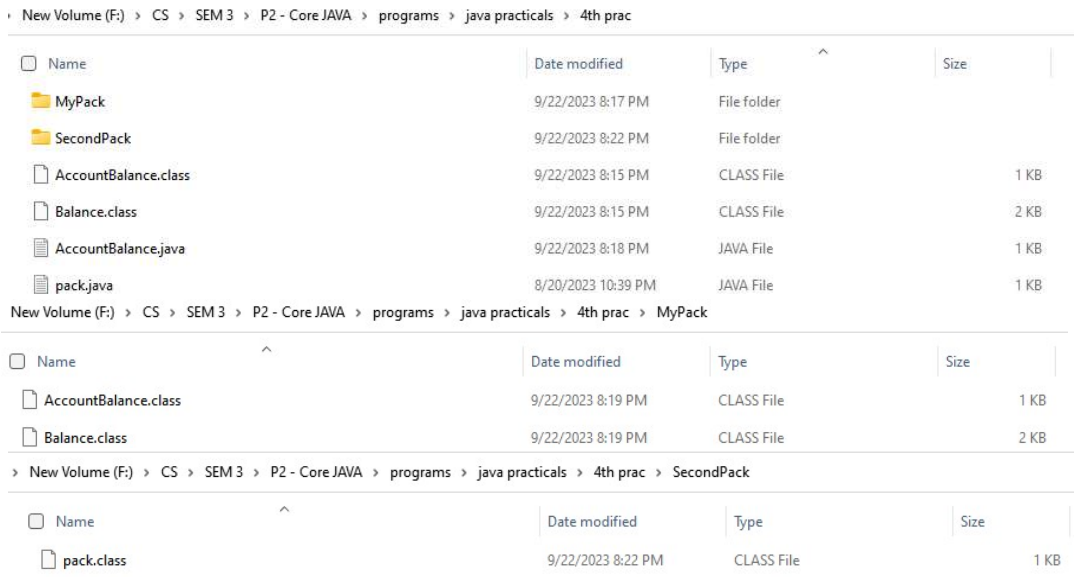
Program:

```
package SecondPack;
class pack{
    public static void main(String[] args){
        System.out.println("This is an second package!!!");
    }
}
```

Output:

```
PS F:\CS\SEM 3\P2 - Core JAVA\programs\java practicals\4th prac>
javac -d . pack.java
PS F:\CS\SEM 3\P2 - Core JAVA\programs\java practicals\4th prac>
java SecondPack.pack

This is an second package!!!
```



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