1. what the Components of JAVA platform? Explain. write a Java Program to illustrate the usage of Conditional state -ments and looping statements.

Ans: A platform is the hardware or software environment in which a program runs. we've already mentioned some of the most popular platforms like windows and Mac os

The Java platforms has two Components:

- The Java Virtual Machine
- The Java Application programming interface (API)

You've already been introduced to the Java virtual machine; it's the base for the Java platform and is ported onto various hard-ware based platform

The API is a large collection of ready - made software components that provide many useful capabilities. It is grouped into libraries of related classes and interfaces; these libraries are known as Packages.

The API and Java virtual machine insulate the program from the underlying hardware.

As a platform - independent environment, the java platform can be a bit slower than native code. However, advances in compiler and virtual machine technologies are bringing performance close to that of native code without threatening portability

Conditional Statements :-

These are the features of programming language, which perform different computations depending on whether a programmer specified boolean condition evaluates to true (or) false.

These are classified into

1) if statement
2) if else statement
3) if else -if statement.

Example:-
```
public class Looser(
{ public static void main (string args[]) {
   int num = 120;
   if (num < 50)
      System.out.println("Love you");

   else if (num < 40)
      System.out.println(" hate you");

   else
      System.out.println(" I Love you"); }
}
```

Looping statements :-

A Loop executes the sequences of statements many times until the stated condition becomes false. These are classified into 3 types.

1) for loop
2) while loop
3) do-while loop

*

Example:-

```
Public class Haters
{
    public static void main (string args[])
    {
        for (int i=10; i>1; i--)
        {
            System.out.println ("value is :"+i);
        }
    }
}
```

*

```
Public class Haters
{ public static void main (string args[])
    {
        int i=10;
        while (i>1) {
            System.out.println(i);
            i=i+1;
        }
    }
}
```

*
```
public class Looser {
    public static void main (string args[]) {
        int i=10;
        do {
            System.out.println(i);
            i=i-1;
        } while (i>1);
    }
}
```

Program using both conditional and looping:-

```java
import java.util.*;

Public class statements
{
    Public static void main (string args[])
    {
        Scanner input = new scanner(System.in);
        System.out.println("Enter your number");

        int n = input.nextInt();
        for(int i=0; i<n; i++)
        System.out.println("numbers is"+ i);

        if (n.l.2 ==0)
        System.out.println(" even");

        else
        System.out.println("odd");
    }
}
```

2, Write any six significant differences between procedure oriented programming and object oriented programming why Java is Robust Programming Language? Explain.

Ans:-

S.NO	Key	procedural oriented programming	object oriented programming
1,	Definition	It follows a step by step approach to break down to task into a collection of variables and routines through a sequence of instructions	It uses classes and object to create models based on the real environment It easy to maintain and modify existing code.
2,	Security	Due to abstraction in oops data hiding is possible (related to oops concept)	pop is less secure as compare to oops. (pop concept)
3,	Complexity	on other hand there is no simple process to add data in pop at least not without revising the whole program.	oops due to modulari-ty in it's program is less complex and hence new data obje-cts can be created from existing object-s.
4,	Approach	on other hand in case of pop on the main progra-m is divided into small parts based on the functions and is treated as separate program for individual smaller program.	in oops concept of objects and classes is introduced and hence the program is divided into small chunks calle-d objects which are instances of classes.

S.No	Key	Procedural oreinted Programming	object oreinted programming
5,	Data	Adding new data and function is not Easy	Adding new data and function is Easy
6,	Examples:-	Pascal, Basic etc...	C++, JAVA, Python C# etc...

* Java is a Robust programming language because:

Robust simply means strong.

- It uses strong memory management.
- There is a lack of pointers that avoids security problems.
- There is automatic garbage collection in java which runs on the java virtual machine to get grid of objects which are not being used by a java application anymore.

- There are exception handling and the type checking mechanism in java. All these makes java robust.

3 Ans:

```java
Public class parkinglot
{
    Scanner vj = new scanner(system.in);
    int vno;
    int hours;
    double bill;

    void input()
    {
        system.out.println("Enter vehicle no: ");
        vno = vj.nextInt();
        system.out.println("Enter how many hours");
        hours = vj.nextInt();
    }

    void calculate ()
    {
```

```java
if (hours <= 1)
{
    bill = 3 * hours;
}
else if (hours > 1)
{
    bill = 3 * (hours-1)+1.5;
}
else
{
    System.out.print ln ("wrong input");
}
}
void display()
{
    System.out.println("The vehicle no is + " " + vno +
                        Total hours : + " " + hours);
    System.out.println(" Total bill is + " " + bill );
}

Public static void main (string args[])
{
    parking Lot PK = new parking Lot();
    PK.input();
    PK.calculate();
    PK.display();
}
}
```

4Ans:

```java
import java.util.*;
Public class overload {
void joystring (strings, char ch1, char ch2)
{ string J= s.replace (ch1, ch2);
  System.out.println ("New string is" + " " + J);

}

Void Joystring (string s)

{ int v=s.indexof(' ');
  System.out.println ("first space at" + " " + v);

  int J = s.lastIndexof(' ');
  System.out.println ("Last space at" + " "+ J);

}
Void joystring (string s1, string s2)
{ string v= " ";
  string vJ = s1.concat(v).concat(s2);
  System.out.print ("New string is" + " " + vJ);

}
Public static void main (string args[])
{ overload vJ = new overload();
  vJ.Joystring ("TECHNALAGY", 'A', 'o');
  vJ.Joystring ("cloud Computing means Internet based Com
                                        -Puting");
  vJ.Joystring ("COMMON WEALTH", "GAMES"); }
}
```