1) What are the components of JAVA platform? Explain. Write a JAVA Programm to illustrate the usage of conditional statements and looping statements.

Ans

The JAVA Platform

A Platform is the hardware or software environment in which a programm runs. Most platforms can be described as a combination of the operating system and underlying hardware. The JAVA platform differs from most other platforms in that it's a software only platform that runs on top of other hardware based platforms.

The JAVA platform has two components:

* The JAVA Virtual Machine.
* The JAVA Application Programming Interface (API)

The JAVA Virtual Machine is the base for the JAVA platform and is ported onto various hardware based platforms.

The API is a large collection of ready made software components that provide many useful capabilities.

In JAVA, most basic programming has performed by the API's classes and packages that are helpful in minimizing the number of lines within pieces of code.

→ Program using both conditional and looping

```
class Test {
   Public static void main (string [] args)
    {
    int i=0, j=9;
     do {
         i++;
         if (j--- < i++) {
            } Break;
          }while (i<5);
            system.out.printer (i+" "+j);
       }
    }
```

output:-66

Explanation:

Here we specifically uses break execution of the program is going as usual and control flow of do-while loop but whenever runs break statement it control comes out from the loop.

~docs.oracle.com.

2. Write any six significant differences between Procedure Oriented Programming and Object Oriented programming. Why JAVA is Robust Programming Language? Explain.

Ans.

Procedural Oriented Programming	Object Oriented Programming
1) In Procedural programming, program is divided into small parts called functions.	1) In object oriented programming, program is divided into small parts called objects.
2) Procedural programming follows top down approach.	2) Object oriented programming follows bottom-up approach.
3) There is no access specifier in procedural programming.	3) There are access specifiers like Private, Public, Protected etc.
4) Adding new data and function is not easy.	4) Adding new data and function is easy.
5) This is based on unreal world.	5) This is based on real world.
6) In this function is more important than data.	6) In this, data is more important than function.
Ex:- C FORTRAN, Pascal, Basic etc.	Ex:- C++, JAVA, Python, C# etc.

JAVA is Robust programming language because it is highly supported language. It is portable across many operating systems. JAVA also has feature of Automatic memory management and garbage collection. Strong type checking mechanism of JAVA also helps in making JAVA Robust. Bugs, especially system crashing bugs, are very rare in Java. We sometimes have a question in our mind that why JAVA is robust language. These are the few reasons

1) Firstly, Java is highly supported language.

2) secondly, Java is portable across multiple platforms which are strongly being supported by JAVA virtual Machine

3) Also Java is provided with another important feature of automatic garbage collection & strong memory allocation.

4) strong run time checking by interpreter catches many errors. Errors which lead to system crash like bad subscriptions error & bad pointer errors are detected very effectively.

~www.tutorialspoint.com

3. Define a class Parking Lot with the following description.

Instance Variables / data members:

int vno – To store the vehicle number.

int hours – To store the number of hours the vehicle is parked in the parking lot.

double bill – To store the bill amount.

Member methods:

void input() – To input and store vno and hours

void calculate() – To compute the parking charge at the rate of RS. 3 for the first hour or part thereof and RS -1.50 for each additional hour or Part thereof.

void display() – To display the detail.

write a main method to create an object of the class and call the above methods.

Ans.

```
import java.util.Scanner;
Public class Parking Lot {
Scanner sc=new Scanner (System.in);
 int vno, hours;
 double bill;
 void input()
{
System.out.Println("Enter vehicle number");
  vno= sc.nextInt();
  System. out. Println ("Enter no of hours vehicle
   is parked");
       hours= sc.nextInt();
   }
   void calculate ()
   {
   if (hours <= 1)
    bill = hours *3;
    else if (hours >=1)
    bill = 3 + (hours-1) * 1.5;
    else
    System.out. println ("wrong value of hours");
   }
   void display()
   {
   System.out.println ("vehicle number is "+vno);
   System. out. Println ("it is parked for "+hours+
    " hours");
   System.out. println ("Total amount to be paid
    is Rs."+bill);
   }
   Public static void main (string [] args) {
   ParkingLot obj= new Parking Lot();
```

```
obj.input();
obj.calculate();
obj.display();
}
}
```

4. Design a class to overload a function Joystring() as follows:

(i) Void Joystring with one string and two character arguements that replaces the character arguement ch1 with the character argument ch2 in the given string s and prints the new string.

Example:

Input value of S = "TECHNALAGY"

ch1 = 'A'

ch2 = 'O'

Output : "TECHNOLOGY"

(ii) Void Joystring (string s) with one string arguement that prints the position of the first space and the last space of given string s.

Example:

Input value of = "cloud computing means Internet based computing".

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(iii) Void Joystring (string s1, string s2) with two string arguements that combines the two strings with space between them and prints the resultant string.

Example :

Input value of s1 = "COMMON WEALTH"

S2 = "GAMES"

Output : "COMMON WEALTH GAMES"

Ans:

```
import java.util.Scanner;
Public class string operations {
Public void Jaystring (string s, char ch1, char ch2){
string output = s.replace (ch1, ch2);
System.out.Println ("output = " +out Put);
}
Public void Joystring (string s) {
int first Index of space = s.index of (' ');
System.out.Println ("Index of First space = "+ firstIn-
  dex of space ");
System.out.Println ("Inder of lastspace = "+ last Index
  of space");
}
Public void Joy string (string s1, string s2)
{
string output = S.I. concatc" ") concat (s2);
system.out.Println ("output = "+output);
}
Public static void main (string orgst) {
Scanner scanner = new scanner (system.in);
string operations string operations = new string
Operations ();
System.out.Print ("Enter ch1 :");
char ch1 = some scanner.next line().charAt(0);
System.out.Print ("Enter ch2 :");
Char ch2 = (char) scanner.nextline().char At(0)
                                              ;
string operations.Joystring (s1, ch1, ch2);
```

```
System.out.Print("Enter string:");
String s2 = scanner.nextline();
string operations.Joystring(s2);
System.out.print("Enter string one:");
string s3 = scanner.nextline();
System.out.Print("Enter second string:");
String s4 = Scanner.nextline();
string operations.Joystring(s3,s4);
}
}.
```