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

A platfom is the hardware or Sofware environment in which a program 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 its a software - only platform that runs on top of other hardware - based platforms.

The java platform has two components:

1) The Java virtual Machine

2) The Java Application Programming Interface (API)

Java virtual Machine: is the base for the Java platform and is ported onto various hard ware based platforms.

The API is a large collection of readymade software components that provide many useful capabilities. It is grouped into libraries of related classes and interfaces; these libraries are known as "Packages". Some of the functionalities of API are:

→ The API and Java virtual Machine insulate the program from the underlying hardware. As a platfom independent environment, the java platfom can be a bit slower than native code.

The terms "Java Virtual Machine" and "JVM" mean a Virtual Machine for the Java platform.

docs.oracle.com > intro > defination

Programme to illustrate The use of Conditional and ooping Statements.

```
Public class Main{
  public static void main(string[] args){
      int num=29;
      boolean flag =false;
      for( int i=2; i<= num/2; ++i)
      {
          if (num%i==0)
          {
              flag =true;
              break;
          }
      }
      if(!flag)
          System.out.println(num + " is a prime number.");
      else
          System.out.println(num + " is not a prime number");
   }
}
```

Output: 29 is prime number

In above programme for loop is used to determine if the given num is prime (or) not. We are looping from 2 To it's half because num is not divisible by more than its half. if is used to check the condition that num is divisible by any of the numbers if they are divisible flag is set to true means not a prime number

referred notes and classes

② Write any six Significant differences between Procedure Oriented Programming and Object Oriented Programming. Why JAVA is Robust Programming language Explain?

Difference between procedual Programming and object Oriented programming:

Procedual Programming Oriented	Object Oriented Programming
(i) In procedual programming, Programme is divided into Small parts called functions. Procedual programming follows top down approach.	(i) In object oriented programming, Programme is divided into Small parts called objects. Object oriented programming follows bottom up approach.
(ii) There is no access Specifier in procedural programming.	(ii) Object Oriented programming has access Specifiers like private, Public, protected etc
(iii) In procedual programming overloading is not possible	(iii) overloading is possible in object oriented programming.
(iv) Adding new data and function is not easy.	(iv) Adding new data and function is easy.
(v) procedual programming does not have any proper data hiding it is less Secure	(v) Object oriented programming provide data hiding So it is more Secure.
(vi) Procedual programming is based on unreal world.	(vi) Object oriented programming is based on real world.
eg: C, Pascal, FORTRAN etc	eg: C++, Java, Python etc

from geeksforgeeks.org

Java is Robust Programming language because: it is highly Supported language. It is portable across many Operating Systems. Java also have feature of Automatic memory management and garbage collection. strong type checking of Java also helps in making Java Robust. efficacious type checking & exception handling mechanism as compared to other languages. Java also does not support pointers which are the major & constant source of mistakes in other language also multiple inheritance can't be exhibited in Java making it a strong & robust language.

"Robust code" means that your programme takes into consideration all possibilites, and that there is no exsistan of error- all situations are handled by the code and resul in valid state. This is why java is known as Robust programming language.

from learnpainless.com

③ To define a class ParkingLot with the given discription:

```
import java.util.*;
class ParkingLot
{
 int Vno;
 int hours;
 double bill;
 Scanner sc =new Scanner(System.in);
 Void input()
 {
 System.out.println("Enter The Vehicle number and number of
                          hours");
  Vno = sc.nextInt( );
  hours = sc.nextInt( );
 }
 Void calculate( )
 {
   if (hours<=1)
   bill=3;
   else
   bill = 3+(hours-1)*1.50;
 }
 void display( )
 {
  System.out.println("Vehicle Number:" +Vno);
  System.out.println("Hours:" + hours);
  System.out.println("Bill:" + bill);
 }
  Public static void main(String args[])
  {
    ParkingLot pl =new ParkingLot();
       pl.input();
       Pl.calculate();
       Pl.display();
  }
}
```

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```
import java.util.Scanner;
Public class StringOperations{
public void Joystring(String s, char ch1, char ch2){
String output = s.replace(ch1,ch2);
System.out.println("Output = " + output);
}
public void Joystring(string s){
int firstIndexOfSpace = s.indexOf(' ');
int lastIndexOfSpace = s.lastIndexOf(' ');
System.out.println(" Index of First space =" + firstIndexOfSpace");
System.out.println(" Index of last space =" + lastIndexOfSpace");
}
Public Void Joystring(String s1, String s2)
{
String output = S1.concat(" ").Concat(s2);
System.out.println("Output = " + output);
}
Public static void main(String args[]){
Scanner scanner = new Scanner(System.in);
StringOperations stringOperations = new StringOperations();

System.out.print(" Enter string: ");
String s1 = scanner.nextLine();
System.out.print(" Enter ch1: ");
char ch1 = scanner.nextLine().charAt(0);
System.out.print(" Enter ch2: ");
Char ch2 = (char) scanner.nextLine().charAt(0);
  stringOperations.Joystring(s1, ch1, ch2);
System.out.print("Enter string:");
String s2 = scanner.nextLine();
stringOperations.Joystring(s2);

 System.out.print("Enter string one:");
  String s3 = Scanner.nextLine();
 System.out.print(" Enter Second string:");
  String s4 = scanner.nextLine();
   stringOperations.Joystring(s3, s4);
 }
}
```