**Assignment - 1**

**1 . Area of Rectangle**

**Program:**

Class Rectangle

{

public static void main(String[] args)

{

int L,B,Area;

L=Integer.parseInt(args[0]);

B=Integer.parseInt(args[1]);

Area=L\*B;

System.out.println(“Area of Rectangle:”+Area);

}

}

**Output**:

Input:

4 5

Output:

Area of Rectangle: 20

**2.Armstrong:**

**Program:**

Import java.util.Scanner;

public class Program{

public static void main(String[] args){

int s,k=0;

int n=Integer.parseInt(args[0]);

int r=n;

While(n>0)

{

s=n%10;

k=k+s\*s\*s;

n=n/10;

}

If(r==k)

{

System.out.println(r+”is Armstrong”);

}

else{

System.out.println(r+”is not a Armstrong”);

}

}

}

**Output:**

Input: 132

Output: 132 is not a Armstrong

**3.Palindrome :**

**Program:**

import java.util.Scanner;

public class Program{

public static void main(String[] args){

Int t,s=0;

Int n=Integer.parseInt(args[0]);

Int k=n;

While(n>0)

{

t=n%10;

S=(s\*10)+t;

n=n/10;

}

If(k==s)

{

System.out.println(k+” is a palindrome”);

}

else

{

System.out.println(k+”is not a palindrome”);

}

}

}

**Output:**

Input : 969

Output: 969 is a palindrome

4. **First n prime numbers:**

**Program:**

public class Program {

public static void main(String[] args) {

Scanner s=new Scanner(System.in);

int n=s.nextInt();

/\*int n=Integer.parseInt(args[0]);\*/

int i=2;

while(n>0){

int c=0;

for(int j=2;j<(i/2)+1;j++){

if(i%j==0){

c+=1;

break;

}

}

if(c==0){

System.out.println(i);

n-=1;

}

i+=1;

}

}

**Output:**

Input: 8

Output:2 3 5 7 11 13 17 19

**5.Even no’s in between given two numbers:**

**Program:**

import java.util.Scanner;

public class Program {

public static void main(String[] args) {

int n1=Integer.parseInt(args[0]);

int n2=Integer.parseInt(args[1]);

for(int i=n1;i<=n2;i++)

{

if(i%2==0)

{

System.out.println(i);

}

}

}

}

**Output:**

Input: 7 22

Output: 8 10 12 14 16 18 20 22

**1.what is Abstraction?**

Data abstraction is the process of hiding certain details and showing only essential information to the user.

Consider a real-life example of a man driving a car. The man only knows that pressing the accelerators will increase the speed of car or applying brakes will stop the car but he does not know about how on pressing the accelerator the speed is actually increasing, he does not know about the inner mechanism of the car or the implementation of accelerator, brakes etc in the car. This is what abstraction is.  
 Abstraction can be achieved with either abstract classes or interfaces.

**2.What is Encapsulation?**

Encapsulation is one of the four fundamental OOP concepts. The other three are inheritance, polymorphism, and abstraction.

Encapsulation in Java is a mechanism of wrapping the data (variables) and code acting on the data (methods) together as a single unit. In encapsulation, the variables of a class will be hidden from other classes, and can be accessed only through the methods of their current class. Therefore, it is also known as data hiding.

To achieve encapsulation in Java :

\*Declare the variables of a class as private.

\*Provide public setter and getter methods to modify and

view the variables values.

**3.what is JDK?**

JDK is an acronym for Java Development Kit. The Java Development Kit (JDK) is a software development environment which is used to develop java applications and applets.

It physically exists. It contains JRE + development tools.The JDK contains a private Java Virtual Machine (JVM) and a few other resources such as an interpreter(Java), a compiler(javac), an archiver, a documentation generator (Javadoc) etc…. to complete the development of a Java Application.

**4.what is JVM?**

JVM(Java Virtual Machine) acts as a run-time engine to run Java applications. JVM is the one that actually calls the main method present in a java code. JVM is a part of JRE(Java Runtime Environment).JVM is responsible for executing the java program line by line hence it is also known as interpreter.

**5.Define Inheritance?**

Inheritance can be defined as the process where one class acquires the properties of another. With the use of inheritance the information is made manageable in a hierarchical order.

The class which inherits the properties of other is known as subclass (derived class, child class) and the class whose properties are inherited is known as superclass (base class, parent class).

**6.How java achieved Platform independence?**

The meaning of platform-independent is that the java bytecode can run on all operating systems.

When you compile Java programs using javac compiler it generates bytecode. We need to execute this bytecode using JVM.Then JVM translates the Java bytecode to machine understandable code.once you write a Java program you can run it on any system using JVM.

**7.Syntax of main Function:**

Java main method is the entry point of any java program. Its syntax is always public static void main(string[] args). You can only change the name of String array argument, for example:- you can change args to myStringArgs.

Also String array argument can be written as String…args or string args[].

**8.Conditional operator:**

The conditional operator is a ternary operator .It has three operands and is used to evaluate boolean expressions, much like an if statement except instead of executing a block of code if the test is true, a conditional operator will assign a value to a variable.

 A conditional operator starts with a boolean operation, followed by two possible values for the variable to the left of the assignment operator. The first value is assigned if the conditional test is true, and the second value is assigned if the conditional test is false.

**9.How many Data types in Java?**

Data types are divided into two groups:

**Primitive data types :**

Byte, short, Int, Long, float, Double, boolean and Char.

**Non-primitive data types :** such as string, Arrays and Classes.

-> **byte**, **short**, **int** and **long** data types are used for storing whole numbers.

**->float** and **double** are used for fractional numbers.

**->char** is used for storing characters(letters).

**->boolean** data type is used for variables that holds either true or false.

**10.What is Constant? How it is declared?**

A constant is a variable whose value **cannot change once it has been assigned**. Java doesn't have built-in support for constants.

A constant can make our program more easily read and understood by others. In addition, a constant is cached by the JVM as well as our application, so using a constant can improve performance.To define a variable as a constant, we just need to add the keyword “**final**” in front of the variable declaration.ex :-final float pi = 3.14f;

The above statement declares the float variable “pi” as a constant with a value of 3.14f. We cannot change the value of "pi" at any point in time in the program. Later if we try to do that by using a statement like “pi=5.25f”, Java will throw errors at compile time itself.