**NAME: Lakshmana Chowdari Neerukonda**

**Pin No: 17551A0459**

**USER NAME: fs\_108\_giet\_034**

**PROGRAM 1: AREA OF RECTANGLE**

import java.util.Scanner;

public class Area

{

public static void main(String[] args) {

int a,b;

Scanner input=new Scanner(System.in);

a=input.nextInt();

b=input.nextInt();

System.out.print(a\*b);

}

}

**INPUT**: 4

5

**OUTPUT**: 20

**PROGRAM 2: ARMSTRONG NUMBER**

import java.util.Scanner;

public class Armstrong {

public static void main(String[] args) {

Scanner input=new Scanner(System.in);

System.out.println(armstrong(input.nextInt()));

}

public static String armstrong(int a){

int p=0;

while(a>0){

p++;

a/=10;

}

int t=a,x=0;

while (t%10!=0){

x+=Math.pow((t%10),p);

t/=10;

}

return (x==a)?"Armstrong number":"Not armstrong number";

}

}

INPUT : 153

OUTPUT : Armstrong number

**PROGRAM 3: PALINDROME OR NOT**

import java.util.Scanner;

public class Palindrome {

public static void main(String[] args) {

Scanner input=new Scanner(System.in);

System.out.println(palindrome(input.nextInt()));

}

public static String palindrome(int p){

int t,r,s=0;

t=p;

while(p>0){

r=p%10;

s=s\*10+r;

p/=10;

}

return (s==t)?"Palindrome number":"Not palindrome number";

}

}

**INPUT :** 121

**OUTPUT:** Palindrome number

**PROGRAM 4 : PRIME NUMBER RANGE**

**import java.util.Scanner;**

public class Prime

{

public static void main(String[] args) {

Scanner input=new Scanner(System.in);

int n,i,j;

n=input.nextInt();

for(i=2;i<n;i++){

int t=0;

for(j=2;j<i;j++){

if(i%j==0){

t+=1;

break;

}

}

if(t==0)

System.out.print(i+" ");

}

}

}

INPUT : 20

OUTPUT : 2 3 5 7 11 13 17

**PROGRAM 5: EVEN NUMBER RANGE BETWEEN TWO LIMITS**

import java.util.Scanner;

public class Even

{

public static void main(String[] args) {

Scanner input=new Scanner(System.in);

int S,E,i;

S=input.nextInt();

E=input.nextInt();

for(i=S;i<=E;i++){

if(i%2==0)

System.out.print(i+" ");

}

}

}

**INPUT :** 10

40

**OUTPUT :** 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40

1. **What is Abstraction?**

Data **abstraction** is the process of hiding certain details and showing only essential information to the user.  
Abstraction can be achieved with either **abstract classes** or [**interfaces**](https://www.w3schools.com/java/java_interface.asp) (which you will learn more about in the next chapter).

The abstract keyword is a non-access modifier, used for classes and

Method:

* **Abstract class:** is a restricted class that cannot be used to create objects (to access it, it must be inherited from another class).
* **Abstract method:** can only be used in an abstract class, and it does not have a body. The body is provided by the subclass (inherited from).

1. **What is Encapsulation?**

Encapsulation is one of the fundamental [concepts in object-oriented programming](https://stackify.com/oops-concepts-in-java/) (OOP). It describes the idea of bundling data and methods that work on that data within one unit, e.g., a class in Java.

1. **What is JDK?**

The **Java Development Kit (JDK)** is a software development environment that offers a collection of tools and libraries necessary for developing Java applications. You need the JDK to convert your source code into a format that the Java Runtime Environment (JRE) can execute.

1. **What is JVM?**

**JVM** is a virtual machine that enables a computer to run java programs as well as programs written in other languages that are also compiled to java bytecode.

1. **Define Inheritance**

Inheritance can be defined as the process where one class acquires the properties of another. The class which inherits the properties of other is known as subclass and the class whose properties are inherited is known as superclass.

1. **How java achieved platform independence?**

Java programming language provides platform independence. It means same Java program can be run on any platform or operating system e.g. Windows, Linux or Solaris without any change. This is the great benefit for some one coming from platform dependent programming language like C or C++ whose code needs to be ported for every single platform because they use native libraries, which differ in every platform.

1. **Write the syntax of main function.**

Public class java {

Public static void main (String args []) {

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}

}

1. **What is 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.

Ex: 1 if (condition) statement;

Or

if (condition) statement 1;

else statement 2;

1. **How many data types in java?**

The **eight** primitive data types are: byte, short, int, long, float, double, boolean, and char. The java. lang. String class represents character strings.

1. **What is constant? How it is declared?**

A **constant** holds a value that does not change. A **constant declaration** specifies the name, data type, and value of the **constant** and allocates storage for it. The **declaration** can also impose the NOT NULL constraint.