**Program No:** 01

**Program Topic:** *A Simple Java Program*

**Program Title:**

Write a java program to compute area of a circle.

**Objectives:**

To learn about basics of java program and to write a simple java program.

**Syntax:**

public class className {

public static void main(String[] args) {

// … … …

}

}

**Source Code:**

package pkg11b;

public class computeArea {

public static void main(String[] args) {

double r;

double A;

r = 3;

A = r \* r \* 3.14159;

System.out.println("Radius = " +

r + " Area = " + A);

}

}

**Output:**

Radius = 3.0 Area = 28.27431

BUILD SUCCESSFUL (total time: 1 second)

**Program No:** 02

**Program Topic:** *The Scanner Class*

**Program Title:**

Write a java program to compute average of three numbers.

**Objectives:**

To obtain input from the console using the Scanner class

**Syntax:**

import java.util.Scanner;

… … …

Scanner input = new Scanner(System.in);

**Source Code:**

package pkg11b;

import java.util.Scanner;

public class computeAverage {

public static void main(String[] args){

Scanner input = new Scanner(System.in);

System.out.print("Enter three numbers: ");

double n1 = input.nextDouble();

double n2 = input.nextDouble();

double n3 = input.nextDouble();

double a = (n1 + n2 + n3) / 3;

System.out.println("The average of " + n1 + " " + n2 + " " +

n3 + " is " + a);

}

}

**Output:**

Enter three numbers: 6 7 2

The average of 6.0 7.0 2.0 is 5.0

BUILD SUCCESSFUL (total time: 7 seconds)

**Program No:** 03

**Program Topic:** *Operators*

**Program Title:**

Write a java program to compute loan.

**Objectives:**

To perform operators & exponent operations using Math.pow(a, b).

**Source Code:**

package pkg11b;

import java.util.Scanner;

public class computeLoan {

public static void main(String[] args){

Scanner input = new Scanner(System.in);

System.out.print("Enter annual interest rate: ");

double air = input.nextDouble();

double mir = air / 1200;

System.out.print("Enter number of years as an integer: ");

int y = input.nextInt();

System.out.print("Enter loan amount: ");

double loanAmount = input.nextDouble();

double mPayment = loanAmount \* mir / (1- 1 / Math.pow(1 + mir, y \* 12));

double tp = mPayment \* y \* 12;

System.out.println("The monthly payment is $" +

(int)(mPayment \* 100) / 100.0);

System.out.println("The total payment is $" +

(int)(tp \* 100) / 100.0);

}

}

**Output:**

Enter annual interest rate: 5

Enter number of years as an integer: 10

Enter loan amount: 5000000

The monthly payment is $53032.75

The total payment is $6363930.91

BUILD SUCCESSFUL (total time: 14 seconds)

**Program No:** 04

**Program Topic:** *Generating Random Numbers*

**Program Title:**

Write a java program to create a subtraction quiz by generating random numbers.

**Objectives:**

To learn how to generate random numbers.

**Syntax:**

datatype variableName = (dataType)(Math.random() \* 10);

**Source Code:**

package pkg11b;

import java.util.Scanner;

public class SubtractionQuiz {

public static void main(String[] args){

int n1 = (int)(Math.random() \* 10);

int n2 = (int)(Math.random() \* 10);

if (n1 < n2) {

int temp = n1;

n1 = n2;

n2 = temp;

}

System.out.print("What is " + n1 + " - " + n2 + "? ");

Scanner input = new Scanner(System.in);

int answer = input.nextInt();

if (n1 - n2 == answer)

System.out.println("You are correct!");

else {

System.out.println("Your answer is wrong.");

System.out.println(n1 + " - " + n2 +

" should be " + (n1 - n2));

}

}

}

**Output:**

What is 9 - 8? 2

Your answer is wrong.

9 - 8 should be 1

BUILD SUCCESSFUL (total time: 6 seconds)

**Program No:** 05

**Program Topic:** *If-Else Statement*

**Program Title:**

Write a java program to determine the grade of a student.

**Objectives:**

To learn the implementation of if-else in java programming.

**Source Code:**

package pkg11b;

import java.util.Scanner;

public class Grade {

public static void main(String[] args){

Scanner input = new Scanner(System.in);

System.out.print("Enter obtained marks: ");

double m = input.nextDouble();

if(m > 100 || m < 0)

System.out.println("Invalid marks");

else if (m >= 90.0)

System.out.println("A");

else if (m >= 80.0)

System.out.println("B");

else if (m >= 70.0)

System.out.println("C");

else if (m >= 60.0)

System.out.println("D");

else

System.out.println("F");

}

}

**Output:**

Enter obtained marks: 79

C

BUILD SUCCESSFUL (total time: 6 seconds)

**Program No:** 06

**Program Topic:** *Boolean Operators*

**Program Title:**

Write a java program to check whether a year is leap year.

**Objectives:**

To learn about Boolean operators in java programming.

**Source Code:**

package pkg11b;

import java.util.Scanner;

public class LeapYear {

public static void main(String[] args){

Scanner input = new Scanner(System.in);

System.out.print("Enter a year: ");

int year = input.nextInt();

boolean ly = (year % 4 == 0 && year % 100 != 0) || (year % 400 == 0);

System.out.println(year + " is a leap year? " + ly);

}

}

**Output:**

Enter a year: 2018

2018 is a leap year? false

BUILD SUCCESSFUL (total time: 5 seconds)