1.

import java.util.Scanner;

public class UsingData

{

    public static void main(String[] args)

    {

        int value1,value2;

        Scanner input1 = new Scanner(System.in);

        System.out.print("Input 1st integer: ");

        value1 = input1.nextInt();

        Scanner input2 = new Scanner(System.in);

        System.out.print("Input 2nd integer: ");

        value2 = input2.nextInt();

        System.out.println("Sum of two integers: " + (value1+value2));

        System.out.println("Difference of two integers: "+ (value1-value2));

        System.out.println("Product of two integers: "+ (value1\*value2));

        System.out.println("Average of two integers: "+ (value1+value2)/2);

        System.out.println("Distance of two integers: "+ Math.abs(value1-value2));

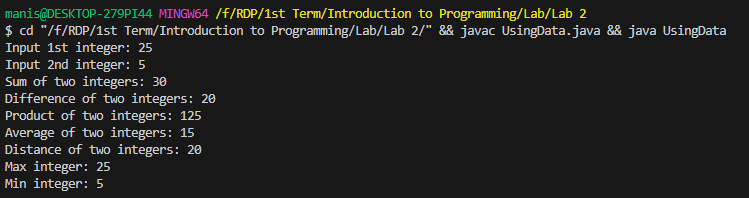
        System.out.println("Max integer: " + Math.max(value1,value2) );

        System.out.println("Min integer: " + Math.min(value1,value2));

    }

}

Output -



2.

public class Student

{

    private int idNumber;

    private int CreditHours;

    private int points;

    public Student()

    {

        idNumber = 9999;

        CreditHours = 3;

        points = 12;

    }

    public void setIdNumber(int number)

    {

        idNumber = number;

    }

    public int getIdNumber()

    {

        return idNumber;

    }

    public void setHours(int number)

    {

        CreditHours = number;

    }

    public int getHours()

    {

        return CreditHours;

    }

    public void setPoints(int number)

    {

        points = number;

    }

    public int getPoints()

    {

        return points;

    }

    public void showIdNumber()

    {

        System.out.println("ID Number is: "+idNumber);

    }

    public void showHours()

    {

        System.out.println("Credit Hours: " + CreditHours);

    }

    public void showPoints()

    {

        System.out.println("Points Earned: "+points);

    }

    public double getGradePoint()

    {

        double getGradePoint = (double)points/CreditHours;

        return getGradePoint;

    }

}

3.

Part – 1

public class ShowStudent

{

   public static void main (String[] args)

   {

      Student david = new Student();

      david.setIdNumber(365);

      david.setPoints(75);

      david.setHours(20);

      david.showIdNumber();

      david.showPoints();

      david.showHours();

      System.out.println("The average grade point is " + david.getGradePoint());

   }

}

Output –

A black screen with yellow text

Description automatically generated

Part – 2

class ShowStudent2

{

   public static void main (String[] args)

   {

      Student david = new Student();

      david.showIdNumber();

      david.showPoints();

      david.showHours();

      System.out.println("The average grade point is " + david.getGradePoint());

   }

}

Output –

A black screen with yellow text

Description automatically generated

4.

import java.util.Scanner;

public class PaintCalculator

{

    public static void main(String[] args)

    {

        double  length, width, height;

        Scanner input =  new Scanner(System.in);

        System.out.print("Enter Length: ");

        length = input.nextDouble();

        System.out.print("Enter Width: ");

        width = input.nextDouble();

        System.out.print("Enter Height: ");

        height = input.nextDouble();

        double area = CalculateArea(length, width, height);

        double cost = CalculateCost(area);

        System.out.println("The total paint's price is $" +cost);

    }

    public static double CalculateArea(double length, double width, double height)

    {

        double area = ((height\*length)\*2)+((height\*width)\*2);

        return area;

    }

    public static double CalculateCost(double area)

    {

        double gallons, price;

        gallons = area/350;

        price = gallons\*32;

        return price;

    }

}

Output –

A screen shot of a computer

Description automatically generated

5.

import java.util.Scanner;

public class Billing

{

    public static double computeBill(double price)

    {

        double total\_due = price+(price\*0.08);

        return total\_due;

    }

    public static double computeBill(double price, int quantity)

    {

        double total\_due;

        total\_due = (price\*quantity)+(price\*0.08);

        return total\_due;

    }

    public static double computeBill(double price, int quantity,double CouponValue)

    {

        double total\_due;

        total\_due = (((price\*quantity)-CouponValue))+(price\*0.08);

        return total\_due;

    }

    public static void main(String[] args)

    {

        Scanner input = new Scanner(System.in);

        System.out.print("Enter the price of one photo book($) - ");

        double price = input.nextDouble();

        System.out.print("Enter the Quantity - ");

        int quantity = input.nextInt();

        System.out.print("Enter the Coupon Value - ");

        double CouponValue = input.nextDouble();

        //For One Parameter

        double total1 = Billing.computeBill(price);

        System.out.println("The total due for one photo book - $" +total1);

        //For Two Parameter

        double total2 = Billing.computeBill(price,quantity);

        System.out.println("The total due for " +quantity+" photo books - $" +total2);

        //For Three Parameter

        double total3 = Billing.computeBill(price,quantity,CouponValue);

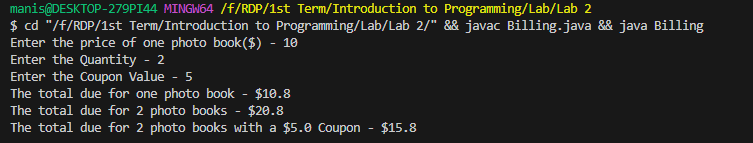
        System.out.println("The total due for " +quantity+" photo books with a $" +CouponValue+" Coupon - $" +total3);

        input.close();

    }

}

Output –



6.

import java.util.Scanner;

public class CellPhoneService

{

    public static void main(String[] args)

    {

        Scanner input = new Scanner(System.in);

        int talkMinutes, textMessages, dataUsed;

        System.out.print("Enter maximum allowance of talk minutes used per month: ");

        talkMinutes = input.nextInt();

        System.out.print("Enter total count of text messages sent per month: ");

        textMessages = input.nextInt();

        System.out.print("Enter maximum gigabytes of data used per month: ");

        dataUsed = input.nextInt();

        if (talkMinutes<500)

        {

            System.out.println("Recommended Plan - Plan A ($49 per month)");

        }

        else if (talkMinutes<500 && textMessages>0)

        {

            System.out.println("Recommended Plan - Plan B ($55 per month)");

        }

        else if (talkMinutes>=500 && dataUsed==0)

        {

            if (textMessages<100)

            {

                System.out.println("Recommended Plan - Plan C ($61 per month)");

            }

            else if (textMessages>=100)

            {

                System.out.println("Recommended Plan - Plan D ($70 per month)");

            }

        }

        else if (dataUsed<=3)

        {

            System.out.println("Recommended Plan - Plan E ($79 per month)");

        }

        else if (dataUsed>=3)

        {

            System.out.println("Recommended Plan - Plan F ($87 per month)");

        }

        input.close();

    }

}

Output –

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Description automatically generated

7.

Part – 1

public class Apartment

{

    private int aptNumber;

    private int bedroomsNumber;

    private int bathsNumber;

    public double rentAmount;

    public Apartment(int aptNumber, int bedroomsNumber, int bathsNumber, double rentAmount)

    {

        this.aptNumber = aptNumber;

        this.bedroomsNumber = bedroomsNumber;

        this.bathsNumber = bathsNumber;

        this.rentAmount = rentAmount;

    }

    public int getAptNumber()

    {

        return aptNumber;

    }

    public int getBedroomsNumber()

    {

        return bedroomsNumber;

    }

    public int getbathsNumber()

    {

        return bathsNumber;

    }

    public double getRentAmount()

    {

        return rentAmount;

    }

}

Part – 2

import java.util.\*;

public class TestApartments {

    public static void main(String[] args) {

        Apartment apt1 = new Apartment(1, 1, 1, 1000.00);

        Apartment apt2 = new Apartment(2, 2, 2, 2000.00);

        Apartment apt3 = new Apartment(3, 3, 3, 3000.00);

        Apartment apt4 = new Apartment(4, 4, 4, 4000.00);

        Apartment apt5 = new Apartment(5, 5, 5, 5000.00);

        Apartment[] apartmentList = { apt1, apt2, apt3, apt4, apt5 };

        Scanner input = new Scanner(System.in);

        System.out.print("Please Enter your required Bedroom - ");

        int bedroomsNumber = input.nextInt();

        System.out.print("Please Enter your required Bathroom - ");

        int bathsNumber = input.nextInt();

        System.out.print("Please Enter your budget - ");

        double rentAmount = input.nextDouble();

        processData(apartmentList, bedroomsNumber, bathsNumber, rentAmount);

    }

    public static void processData(Apartment[] apartmentList, int bedroomsNumber, int bathsNumber, double rentAmount) {

        int counter = countApartments(apartmentList, bedroomsNumber, bathsNumber, rentAmount);

        System.out.println("There are " + counter + " apartments that meet your search criteria.");

        for (Apartment aptSearch : apartmentList) {

            if (aptSearch.getBedroomsNumber() >= bedroomsNumber && aptSearch.getbathsNumber() >= bathsNumber

                    && aptSearch.getRentAmount() <= rentAmount) {

                System.out.printf(

                        "Apartment " + aptSearch.getAptNumber() + " is available with " + aptSearch.getBedroomsNumber()

                                +

                                " bedrooms and " + aptSearch.getbathsNumber() + " bathrooms. It will cost you $%,.2f",

                        aptSearch.getRentAmount());

                System.out.print(" per month.\n");

                counter++;

            }

        }

    }

    public static int countApartments(Apartment[] apartmentList, int bedroomsNumber, int bathsNumber, double rentAmount) {

        int counter = 0;

        for (Apartment aptSearch : apartmentList) {

            if (aptSearch.getBedroomsNumber() >= bedroomsNumber && aptSearch.getbathsNumber() >= bathsNumber

                    && aptSearch.getRentAmount() <= rentAmount) {

                counter++;

            }

        }

        return counter;

    }

}

Output –

A screen shot of a computer

Description automatically generated