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**Activity-1: This program illustrate the uses E notation**

**Solution:**

package com.mycompany.lab\_03;

public class Activity\_01 {

public static void main(String[] args) {

double distance,mass;

distance=1.495979E11;

mass=1.989E30;

System.out.println("The sun is "+distance+ " meters away;");

System.out.println("The sun mass is "+ mass+" Kilograms");

}

}

**Output:**

**A white text with black text

Description automatically generated with medium confidence**

**Activity-2: This program calculates hourly wages plus overtime.**

**Solution:**

package com.mycompany.lab\_03;

public class Activity\_02 {

public static void main(String[] args) {

double regularWages;

double basePay=25;

double regularHours=40;

double overtimeWages;

double overtimePay=37.5;

double overtimeHours=10;

double totalWages;

regularWages=basePay\*regularHours;

overtimeWages=overtimePay\*overtimeHours;

totalWages=regularWages+overtimeWages;

System.out.println("Wages for this week are $"+totalWages);

}

}

**Output:**

A screenshot of a computer program

Description automatically generated

**Activity-3: This program calculates the amount of pay that will be contributed to a retirement plan if 5%, 8%, or 10% of monthly pay is withheld.**

**Solution:**

package com.mycompany.lab\_03;

public class Activity\_03 {

public static void main(String[] args) {

double monthkyPay=6000.0;

double contribution;

contribution=monthkyPay\*0.05;

System.out.println("5 Percent is $"+contribution+ "Per Month.");

contribution=monthkyPay\*0.08;

System.out.println("8 Percent is $"+contribution+ "Per Month.");

contribution=monthkyPay\*0.1;

System.out.println("10 Percent is $"+contribution+ "Per Month.");

}

}

**Output:**

A screenshot of a computer program

Description automatically generated

**Activity-4: This program displays a variety of floating-point numbers in a column with their decimal points aligned.**

**Solution:**

package com.mycompany.lab\_03;

public class Activity\_04 {

public static void main(String[] args) {

double num1=127.899 ;

double num2=3465.148 ;

double num3=3.776 ;

double num4=264.821 ;

double num5=88.081 ;

double num6=1799.999 ;

System.out.printf("%8.2f\n",num1);

System.out.printf("%8.2f\n",num2);

System.out.printf("%8.2f\n",num3);

System.out.printf("%8.2f\n",num4);

System.out.printf("%8.2f\n",num5);

System.out.printf("%8.2f\n",num6);

}

}

**Output:**

A screen shot of a computer program

Description automatically generated

**Activity-5: This program displays the sales tax with two digits after the decimal point.**

**Solution:**

package com.mycompany.lab\_03;

import java.util.Scanner;

public class Activity\_05 {

public static void main(String[] args) {

Scanner input=new Scanner(System.in);

System.out.print("Enter Purchase amount");

double purchaseAmount=input.nextDouble();

double tax=purchaseAmount\*0.06;

System.out.println("Sales tax is $"+(int)(tax\*100)/100.0);

}

}

**Output:**

A screenshot of a computer code

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**Lab Task 1:**

**Solution:**

package com.mycompany.lab\_03;

import java.util.Scanner;

public class Task\_01 {

public static void main(String[] args) {

double amount;

double dollars;

double cents;

double quarter;

double dimes;

double nickle;

double pennis;

double remaningCents;

Scanner input=new Scanner(System.in);

System.out.println("Enter Amount in Decimals ");

amount=input.nextDouble();

cents=amount\*100;

dollars=cents/100;

remaningCents=cents%100;

double centsToShow=remaningCents;

quarter=remaningCents/25;

remaningCents=remaningCents%25;

dimes=remaningCents/10;

remaningCents=remaningCents%10;

nickle=remaningCents/5;

remaningCents=remaningCents%5;

pennis=remaningCents;

System.out.println("The Dollars are "+dollars);

System.out.println("The Cents are "+centsToShow);

System.out.println("The Quarter are "+quarter);

System.out.println("The Dimes are "+dimes);

System.out.println("The Nickle are "+nickle);

System.out.println("The Pennis are "+pennis);

}

}

**Output:**

A screenshot of a computer code

Description automatically generated

**Lab Task 2:**

**Solution:**

package com.mycompany.lab\_03;

import java.util.Scanner;

public class Task\_02 {

public static void main(String[] args) {

int students;

int apples;

Scanner input=new Scanner(System.in);

System.out.println("Enter Number of Students ");

students=input.nextInt();

System.out.println("Enter Number of Apples");

apples=input.nextInt();

int distributes=apples/students;

int remaning=apples%students;

System.out.println("Apples Distributes "+distributes);

System.out.println("Apples Remaning in basket "+remaning);

}

}

**Output:**

A screenshot of a computer program

Description automatically generated

**Lab Task 3:**

**Solution:**

package com.mycompany.lab\_03;

import java.util.Scanner;

public class Task\_03 {

public static void main(String[] args) {

Scanner input=new Scanner(System.in);

System.out.println("Enter Class 1 Students ");

int class\_1=input.nextInt();

System.out.println("Enter Class 2 Students ");

int class\_2=input.nextInt();

System.out.println("Enter Class 3 Students ");

int class\_3=input.nextInt();

//Class\_1

int bench\_class\_1=class\_1/2;

int additionalClass\_1=class\_1%2;

int toalBenchClass\_1=bench\_class\_1+additionalClass\_1;

//Class\_2

int bench\_class\_2=class\_2/2;

int additionalClass\_2=class\_2%2;

int toalBenchClass\_2=bench\_class\_2+additionalClass\_2;

//CLass\_3

int bench\_class\_3=class\_3/2;

int additionalClass\_3=class\_3%2;

int toalBenchClass\_3=bench\_class\_3+additionalClass\_3;

//Sum of Required Benches of all classes

int totalBenchRequired=toalBenchClass\_1+toalBenchClass\_2+toalBenchClass\_3;

//Printing result

System.out.println("Total Bench Required are : "+totalBenchRequired);

}

}

**Output:**

A screenshot of a computer program

Description automatically generated

**Lab Task 4:**

**Solution:**

package com.mycompany.lab\_03;

import java.util.Scanner;

public class Task\_04 {

public static void main(String[] args) {

System.out.println("Enter Number of Minutes");

Scanner input=new Scanner(System.in);

int minutes=input.nextInt();

int hours=minutes/60;

int remaningMinutes=minutes%60;

System.out.println("Now Time after Mid-Night is "+hours+" "+remaningMinutes);

}

}

**Output:**

A screenshot of a computer program

Description automatically generated

**Lab Task 5:**

**Solution:**

package com.mycompany.lab\_03;

import java.util.Scanner;

public class Task\_05 {

public static void main(String[] args) {

Scanner input= new Scanner(System.in);

//Taking input

System.out.println("Enter Amount of Milk Produced in Morning ");

double milkAmount=input.nextDouble();

//Finding Number of Cartons

int number0fCartons=(int) (milkAmount/3.78);

//Checking if there is reminder mean milk is remaning adding extra one carton

if ((milkAmount%3.78)>0) {

number0fCartons=number0fCartons+1;

}

//Printing Results

System.out.println("Number of Cartons are : "+number0fCartons);

double milkCost=milkAmount\*0.38;

double milkProfit=number0fCartons\*0.27;

System.out.printf("The Cost of milk is %.2f \n",milkCost);

System.out.println("Total Profit of Milk is : $"+milkProfit);

}

}

**Output:**

**A screenshot of a computer code

Description automatically generatedLab Task 6:**

**Solution:**

package com.mycompany.lab\_03;

import java.util.Scanner;

public class Task\_06 {

public static void main(String[] args) {

Scanner input=new Scanner(System.in);

System.out.println("Eenter Number of Hours Worked Daily ");

double hours=input.nextDouble();

double totalHours=hours\*5;

System.out.println("Enter Rate of Per-Hour");

double rate=input.nextDouble();

//finding total income

double totalIncome=totalHours\*rate;

//Tax on total income

double taxOnIncome=totalIncome\*0.14;

//Income after paying tax

double incomeAfterTax=totalIncome-taxOnIncome;

//Paying for Clothes

double amountForClothes=incomeAfterTax\*0.10;

//Paying For School Supplies

double amountForSchool=incomeAfterTax\*0.01;

double incomeAfterSchool=incomeAfterTax-(amountForClothes+amountForSchool);

//Money For Saving Bonds

double amountForSavingBonds=incomeAfterSchool\*0.25;

//Parent Spent on additional Bonds

double parentsSpentOnBonds=amountForSavingBonds/2;

//Printing Statements

System.out.println("Total Income is : "+totalIncome);

System.out.println("Total Income after Tax is : "+incomeAfterTax);

System.out.println("Money Spend on New Clothes is : "+amountForClothes);

System.out.println("Money Spend on School Supplies is : "+amountForSchool);

System.out.println("Money Spent on Saving Bonds : "+amountForSavingBonds);

System.out.println("Money Parents Additionaly Spent for Bonds : "+parentsSpentOnBonds);

}

}

**Output:**

A screenshot of a computer

Description automatically generated

**Lab Task 7:**

**Solution:**

package com.mycompany.lab\_03;

import java.util.Scanner;

public class Task\_07 {

public static void main(String[] args) {

Scanner input=new Scanner(System.in);

System.out.print("Enter Number of A Class Tickets Sold out : ");

int aClass=input.nextInt();

int aClassAmount=aClass\*20;

System.out.print("Enter Number of B Class Tickets Sold out : ");

int bClass=input.nextInt();

int bClassAmount=bClass\*15;

System.out.print("Enter Number of C Class Tickets Sold out : ");

int cClass=input.nextInt();

int cClassAmount=cClass\*10;

System.out.print("Enter Number of D Class Tickets Sold out : ");

int dClass=input.nextInt();

int dClassAmount=dClass\*5;

int totalIncome=aClassAmount+bClassAmount+cClassAmount+dClassAmount;

System.out.println("Your Total income of tickets sold is : "+totalIncome);

}

}

**Output:**

A screenshot of a computer

Description automatically generated

**Lab Task 8:**

**Solution:**

package com.mycompany.lab\_03;

import java.util.Scanner;

public class Task\_08 {

public static void main(String[] args) {

Scanner input=new Scanner(System.in);

System.out.print("Enter Number between 0 and 1000: ");

String number=input.next();

//Finding Lngth of Number

int length=number.length();

//FOR LESS THAN 10

if (length==1) {

System.out.println("Sum of Single Integer is same which is : "+number);

}

//FOR NUMBER BETWEEN 10 AND 99

else if (length==2) {

char num1=number.charAt(0);

char num2=number.charAt(1);

int finalNum1=num1-'0';

int finalNum2=num2-'0';

int sumOfNumbers=finalNum1+finalNum2;

System.out.println("Sum of Your Numbers is : "+sumOfNumbers);

}

//FOR NUMBER BETWEEN 100 AND 999

else if (length==3) {

char num1=number.charAt(0);

char num2=number.charAt(1);

char num3=number.charAt(2);

int finalNum1=num1-'0';

int finalNum2=num2-'0';

int finalNum3=num3-'0';

int sumOfNumbers=finalNum1+finalNum2+finalNum3;

System.out.println("Sum of Your Numbers is : "+sumOfNumbers);

}

//FOR NUMBER BETWEEN 1000 AND 9999

else if (length==4) {

char num1=number.charAt(0);

char num2=number.charAt(1);

char num3=number.charAt(2);

char num4=number.charAt(3);

int finalNum1=num1-'0';

int finalNum2=num2-'0';

int finalNum3=num3-'0';

int finalNum4=num4-'0';

int sumOfNumbers=finalNum1+finalNum2+finalNum3+finalNum4;

System.out.println("Sum of Your Numbers is : "+sumOfNumbers);

}

//ABOVE LIMIT

else{

System.out.println("Number is Out of Range.Thanks");

}

}

}

**Output:**

A screenshot of a computer code

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**Lab Task 9:**

**Solution:**

package com.mycompany.lab\_03;

public class Task\_09 {

public static void main(String[] args) {

double x=75.3987;

double y=982.89764;

System.out.printf("%.2f %n",x);

System.out.printf("%.2f %n",y);

System.out.printf("%.3f %n",x);

System.out.printf("%.3f %n",y);

}

}

**Output:**

A screen shot of a computer code

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**Lab Task 10:**

**Solution:**

package com.mycompany.lab\_03;

public class Task\_10 {

public static void main(String[] args) {

int degree=30;

double radians=Math.toRadians(degree);

double sin=Math.sin(radians);

double cos=Math.cos(radians);

double tan=Math.tan(radians);

System.out.printf("Degrees \t Radians\tSine\tCosSine\tTangent %n %d \t\t %.4f\t %.4f\t %.4f\t %.4f",degree,radians,sin,cos,tan);

degree=60;

radians=Math.toRadians(degree);

sin=Math.sin(radians);

cos=Math.cos(radians);

tan=Math.tan(radians);

System.out.printf("%n %d \t\t %.4f\t %.4f\t %.4f\t %.4f",degree,radians,sin,cos,tan);

}

}

**Output:**

A screenshot of a computer code

Description automatically generated