**ASSIGNMENT-1**

**SUBJECT: PROGRAMMING FUNDAMENTALS**

**TOPIC: PRACTICE PROBLEMS**



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**SECTION: CSE1**

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1. **Find square/cube of a number**

#include<iostream>

using namespace std;

int main(){

int square,cube,a,b;

a=2;

square=a\*a;

cout<<"Square of "<<a<< " = "<<square<<endl;

b=3;

cube=b\*b\*b;

cout<<"Cube of "<<b<<" = "<<cube<<endl;

}

1. **Find sum/difference/product/division of two/three numbers**

#include<iostream>

using namespace std;

int main(){

int num1,num2,num3;

int sum,sub,product,div;

cout<<"Enter 1st number = "<<endl;

cin>>num1;

cout<<"Enter 2nd number = "<<endl;

cin>>num2;

cout<<"Enter 3rd number = "<<endl;

cin>>num3;

sum=num1+num2+num3;

cout<<"The sum of 3 numbers is = "<<sum<<endl;

sub=num1-num2-num3;

cout<<"The subtraction of 3 numbers is = "<<sub<<endl;

product=num1\*num2\*num3;

cout<<"The multiplication of 3 number is = "<<product<<endl;

div=(num1/num2);

cout<<"The divison of 2 numbers is = "<<div<<endl;

}

1. **Find average of two numbers**

#include<iostream>

using namespace std;

int main()

{

int num1,num2;

int sum,average;

cout<<"Enter 1st number = ";

cin>>num1;

cout<<"Enter 2nd number = ";

cin>>num2;

sum=num1+num2;

cout<<"Sum of two numbers is = "<<sum<<endl;

average=sum/2;

cout<<"Average of two number is = "<<average<<endl;

}

1. **Find velocity from given distance and time**

#include<iostream>

using namespace std;

int main(){

int velocity,time,distance;

cout<<"Enter Distance = ";

cin>>distance;

cout<<"Enter Time = ";

cin>>time;

velocity=distance/time;

cout<<"Velocity = "<<velocity<<endl;

}

1. **Find acceleration from given velocity and time**

#include<iostream>

using namespace std;

int main(){

int acceleration,velocity,time;

cout<<"Enter Velocity = ";

cin>>velocity;

cout<<"Enter Time = ";

cin>>time;

acceleration=velocity/time;

cout<<"acceleration = "<<acceleration<<endl;

}

1. **Calculate area of a rectangle ( area = base \* height )**

#include<iostream>

using namespace std;

int main (){

int area,height,base;

cout<<"Enter Height = ";

cin>>height;

cout<<"Enter Base = ";

cin>>base;

area=height\*base;

cout<<"Area of rectangle = "<<area<<endl;

}

1. **Calculate marks percentage ( marks percentage = marks obtained / total \* 100 )**

#include<iostream>

using namespace std;

int main(){

float percentage;

float total\_marks,obtained\_marks;

cout<<"Enter Total Marks = ";

cin>>total\_marks;

cout<<"Enter Obtained Marks = ";

cin>>obtained\_marks;

percentage = (obtained\_marks/total\_marks)\*100;

cout<<"percentage = "<<percentage<<endl;

}

1. **Calculate sales tax ( tax = amount \* tax percentage / 100 )**

#include<iostream>

using namespace std;

int main(){

int sales\_tax,Total\_amount,tax\_percentage;

cout<<"Enter Total Amount = ";

cin>>Total\_amount;

cout<<"Enter Tax Percentage = ";

cin>>tax\_percentage;

sales\_tax=Total\_amount\*tax\_percentage/100;

cout<<"The Sales Tax = "<<sales\_tax<<endl;

}

1. **Find ‘no. of minutes’ and ‘no. of seconds’ from given ‘no. of hours’**

#include<iostream>

using namespace std;

int main (){

int minutes,hours;

cout<<"Enter number of hours = "<<endl;

cin>>hours;

cout<<"Enter number of minutes = "<<endl;

cin>>minutes;

cout<<"Number of minutes in hours = "<<hours\*60<<endl;

cout<<"Number of seconds in hours = "<<hours\*60\*60<<endl;

}

1. **Find the value of F (centripetal force) for given values of mass ‘m’, velocity ‘v’ and radius ‘r’ (where F = mv2 / r)**

#include<iostream>

using namespace std;

int main (){

int Force,mass,velocity,radius;

cout<<"Enter the value of mass = ";

cin>>mass;

cout<<"Enter a value of velocity = ";

cin>>velocity;

cout<<"Enter a value of radius = ";

cin>>radius;

Force= mass\*(velocity\*velocity)/radius;

cout<<"Centripetal Force = "<<Force<<endl;

}

1. **Find the value of A such that A = (4x – 3y) / 2z**

#include<iostream>

using namespace std;

int main(){

int x,y,z,A;

cout<<"Enter the value for x: ";

cin>>x;

cout<<"Enter the value for y: ";

cin>>y;

cout<<"Enter the value for z: ";

cin>>z;

A=(4\*x-3\*y)/2\*z;

cout<<"The value of A = "<<A<<endl;

}

1. **Find the value of distance ‘D’ for given values of ‘x’, ‘v’,‘t’, ‘a’ (where D = x + vt + 1/2at2)**

#include<iostream>

using namespace std;

int main(){

int x,v,t,a,D;

cout<<"Enter value for x: ";

cin>>x;

cout<<"Enter value for v: ";

cin>>v;

cout<<"Enter value for t: ";

cin>>t;

cout<<"Enter value for a: ";

cin>>a;

D= x + v\*t + 1/2\*a\*t\*t;

cout<<"The Distance D is = "<<D;

}

1. **Find the value of A such that A = (a - b)2 / 2c**

#include<iostream>

using namespace std;

int main(){

int a,b,c,A;

cout<<"Enter value for a: ";

cin>>a;

cout<<"Enter value for b: ";

cin>>b;

cout<<"Enter value for c: ";

cin>>c;

A = (a - b)\*2/2\*c;

cout<<"The value of A = "<<A<<endl;

}

1. **Find the value of E (total energy) for given values of ‘m’, ‘v’, ‘g’, ‘h’ (where E = mv2 / 2 + mgh)**

#include<iostream>

using namespace std;

int main(){

int m,v,g,h;

int E;

cout<<"Enter value for m: ";

cin>>m;

cout<<"Enter value for v: ";

cin>>v;

cout<<"Enter value for g: ";

cin>>g;

cout<<"Enter value for h: ";

cin>>h;

E = m\*v\*2 / 2 + m\*g\*h ;

cout<<"Value of E(total energy) = "<<E<<endl;

}

1. **Find the value of A such that A = (a + b)2 – 2ab**

#include<iostream>

using namespace std;

int main(){

int a,b,A;

cout<<"Enter value for a: ";

cin>>a;

cout<<"Enter value for b: ";

cin>>b;

A = (a + b)\*2 - 2\*a\*b;

cout<<"Value of A = "<<A<<endl;

}

1. **Find absolute value of difference of two numbers**

#include<iostream>

using namespace std;

int main()

{

int num1,num2,diff;

cout<<"Enter first number: ";

cin>>num1;

cout<<" Enter second number: ";

cin>>num2;

diff=num1-num2;

if(diff>0){

cout<<"Absolute difference = "<<diff;

} else{

cout<<"Absolute difference = "<<diff\*(-1);

}

}

1. **Find smaller/larger of two numbers.**

#include<iostream>

using namespace std;

int main(){

int num1,num2;

cout<<"Enter first number: ";

cin>>num1;

cout<<" Enter second number: ";

cin>>num2;

if(num1>num2){

cout<<"First number is greater than second "<<endl;

} else{

cout<<"First number is smaller than second" <<endl;

}

}

1. **Find whether a number is negative or not.**

#include<iostream>

using namespace std;

int main(){

int num;

cout<<"Enter the number to be checked: ";

cin>>num;

if(num>0){

cout<<"The given number is positive";

} else if(num<0){

cout<<"The given number is negative";

} else{

cout<<"The given number is zero";

}

}

1. **Find whether two numbers are equal or not**

#include<iostream>

using namespace std;

int main(){

int num1,num2;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

if(num1==num2){

cout<<"Both the numbers are equal."<<endl;

} else{

cout<<"The given numbers are not equal."<<endl;

}

}

1. **Multiply two numbers if their difference is greater than 0**

#include<iostream>

using namespace std;

int main(){

int num1,num2,diff;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

diff=num1-num2;

if(diff>0){

cout<<"As the difference is greater than 0, so the product = "<<num1\*num2;

} else{

cout<<"The differnce is not greater than zero.";

}

}

1. **Find whether the sum of two numbers is greater than 50**

#include<iostream>

using namespace std;

int main(){

int num1,num2,sum;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

sum=num1+num2;

if(sum>50){

cout<<"The sum of two numbers "<<sum<<" is greater than 50.";

} else{

cout<<"The sum is not greater than 50";

}

}

1. **Find whether the sum of two numbers is greater than the third number**

#include<iostream>

using namespace std;

int main()

{

int num1,num2,num3,sum;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

cout<<"Enter third number: ";

cin>>num3;

sum=num1+num2;

if(sum>num3){

cout<<"The sum of two number is greater than 3rd number = "<<sum;

} else{

cout<<"The sum of two number is not greater than 3rd number = "<<sum;

}

}

1. **Divide a number by another if and only if the second number is not equal to 0**

#include<iostream>

using namespace std;

int main()

{

int num1,num2;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

if((num2>0)||(num2<0)){

cout<<"As the second number is not equal to zero so "<<num1/num2<<" is the required answer.";

}

else{

cout<<"2nd number is equal to zero "<<endl;

}

}

1. **Determine whether a student is ‘passed’ or ‘failed’ from his marks**

#include<iostream>

using namespace std;

int main()

{

int marks;

cout<<"Enter the marks obtained: ";

cin>>marks;

if(marks>=33){

cout<<"The student is passed.";

} else{

cout<<"The student is failed.";

}

}

1. **Divide two numbers if their difference is greater than 10, otherwise multiply them.**

#include<iostream>

using namespace std;

int main()

{

int num1,num2,diff;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

diff=num1-num2;

if(diff>10){

cout<<"As the difference is "<<diff<<" so dividing the numbers: "<<num1/num2;

} else{

cout<<"As the difference is "<<diff<<" so multiplying the numbers: "<<num1\*num2;

}

}

1. **Determine whether the “average” of two numbers is negative or not.**

#include<iostream>

using namespace std;

int main(){

int num1,num2,sum, average;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

sum= num1+num2;

average=sum/2;

if(average<0){

cout<<"The "<<average<< " is negative."<<endl;

}else{

cout<<"The "<<average<< " is positive.";

}

}

1. **Multiply two numbers if their sum is greater than 100, otherwise divide them.**

#include<iostream>

using namespace std;

int main()

{

int num1,num2,sum;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

sum= num1+num2;

if(sum>100){

cout<<"As the Sum = "<<sum<<" So multilplying the numbers: "<<num1\*num2;

} else{

cout<<"As the Sum = "<<sum<<" So dividining the numbers: "<<num1/num2;

}

}

1. **Determine whether the “Product” of two numbers is negative or not.**

#include<iostream>

using namespace std;

int main()

{

int num1,num2,product;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

product = num1\*num2;

if(product<0){

cout<<"The product of two numbers is negative = "<<product<<endl;

} else{

cout<<"The product of two numbers is positive = "<<product<<endl;

}

}

1. **Subtract two numbers if their sum is greater than 100, otherwise divide them.**

#include<iostream>

using namespace std;

int main(){

int num1,num2,sum, average;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

sum= num1+num2;

if(sum>100)

{

cout<<"As the sum is "<<sum<<" so subtracting the numbers: "<<num1-num2;

} else{

cout<<"As the sum is "<<sum<<" so subtracting the numbers: "<<num1/num2;

}

}

1. **Determine whether the “average” of three numbers is negative or not.**

#include<iostream>

using namespace std;

int main(){

int num1,num2,num3,sum,average;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

cout<<"Enter third number: ";

cin>>num3;

sum=num1+num2+num3;

average=sum/3;

if(average<0){

cout<<"Average of three number is negative";

} else{

cout<<"Average of three number is positive";

}

}

1. **Find sum of two numbers (If second number is equal to 0 add 5 to it**

#include<iostream>

using namespace std;

int main(){

int num1,num2,sum;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

sum=num1+num2;

if(num2=0){

cout<<"As 2nd number = "<<num2<<" So adding 5 to sum: "<<sum+5;

} else{

cout<<"The second number is not 0 and the sum is: "<<sum;

}

}

1. **Divide a number by another if second number is between 0 and 10**

#include<iostream>

using namespace std;

int main(){

int num1,num2;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

if( (num2>0)&&(num2<10) ){

cout<<"Dividing the numbers: "<<num1/num2;

} else{

cout<<"The given number is not between 0 and 10.";

}

}

1. **Add two numbers if either of them is 0**

#include<iostream>

using namespace std;

int main()

{

int num1,num2;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

if((num1==0)||(num2==0)){

cout<<"Adding both numbers: "<<num1+num2;

} else{

cout<<"None of the numbers are zero.";

}

}

1. **Determine status of a student from marks of two of his subjects for following:**

**a. If marks for both the subjects are greater than 40, he’s passed**

**b. If marks for either of the subjects are greater than 40, he’s passed**

#include<iostream>

using namespace std;

int main(){

int subject1,subject2;

cout<<"Enter the marks of student in subject 1 = ";

cin>>subject1;

cout<<"Enter the marks of student in subject 2 = ";

cin>>subject2;

if((subject1>40)&&(subject2>40)){

cout<<"The student is passed!"<<endl;

} else if((subject1>40)||(subject2>40)){

cout<<"The student is passed "<<endl;

}

}

1. **Determine status of a student from marks of two of this subjects and his GPA If either the marks for both of the subjects are greater than 40 or GPA is greater than 2, he’s considered passed**

#include<iostream>

using namespace std;

int main()

{

int subject1,subject2,marks;

float gpa;

cout<<"Enter marks of subject 1: ";

cin>>subject1;

cout<<"Enter marks of subject 2: ";

cin>>subject2;

cout<<"Enter the gpa = ";

cin>>gpa;

if(((subject1>40)&&(subject2>40))||(gpa>2)){

cout<<"The student is passed";

}

}

1. **Determine whether a student has got ‘Grade A’ from his total marks and his GPA If marks are greater than 80 and less than 90 OR GPA is greater than 3.7 and less than 3.8, he’ll be graded ‘A’**

#include<iostream>

using namespace std;

int main()

{

int marks;

float GPA;

cout<<"Enter the marks: ";

cin>>marks;

cout<<"Enter the GPA: ";

cin>>GPA;

if(((marks>80)&&(marks<90)) || ((GPA>3.7)&&(GPA<3.8))){

cout<<"The student has got Grade A.";

}

}

1. **Determine whether a car is of mid-size type or not from its price (in millions) and engine capacity (in cc) If price is between 1 million and 2 million or if engine capacity is between 1000 and 1500, a car is considered to be a mid-size car**

#include<iostream>

using namespace std;

int main(){

long int price1,capacity;

cout<<"Enter the price1: ";

cin>>price1;

cout<<"Enter the engine capacity: ";

cin>>capacity;

if(((price1>1000000)&&(price1<2000000))||((capacity>1000)&&(capacity<1500))){

cout<<"The car is considered to be a mid-size car.";

} else{

cout<<"The car is not considered to be a mid-size car.";

}

}

1. **Determine whether a cell-phone is a “smart phone” or not, from its price and display width A cell-phone is considered a “smart-phone”, if its price is from 20,000 to 30,000 or its display width is from 5 to 8 inches**

#include<iostream>

using namespace std;

int main(){

int price,display;

cout<<"Enter the price: ";

cin>>price;

cout<<"Enter the display: ";

cin>>display;

if(((price>=20000)&&(price<=30000)) || ((display>=5)&&(display<=8))){

cout<<"The mobile is smartphone.";

} else{

cout<<"The mobile is cell phone.";

}

}

1. **Determine whether an employee is Manager or not, from given salary and pay grade. An employee is considered a “Manager”, if his salary is between 50,000 to 80,000 or his pay grade is from 19 to 22**

#include<iostream>

using namespace std;

int main()

{

int manager,salary,pay\_grade;

cout<<"Enter the salary: ";

cin>>salary;

cout<<"Enter the pay\_grade: ";

cin>>pay\_grade;

if((salary>50000)&&(salary>80000)||((pay\_grade>=19)&&(pay\_grade<=22))){

cout<<"Employee is considered a Manager ";

} else{

cout<<"Employee is not a Manager ";

}

}

1. **Determine whether an employee is an Executive or not, from given salary and pay grade. An employee is considered an “Executive”, if his salary is between 80,000 and 100,000 or his pay grade is from 20 to 22**

#include<iostream>

using namespace std;

int main()

{

int salary,grade;

cout<<"Enter the salary: ";

cin>>salary;

cout<<"Enter the grade: ";

cin>>grade;

if((salary>80000)&&(salary<100000)||((grade>=20)&&(grade<=22))){

cout<<"Employee is an Executive.";

} else{

cout<<"Employee is not an Executive.";

}

}

1. **For two numbers, do the following If second number is greater than 0, divide them If second number is less than 0, multiply them If second number is equal to 0, add them**

#include<iostream>

using namespace std;

int main()

{

int num1,num2;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

if (num2>0){

cout<<"Dividing both numbers = "<<num1/num2;

} else if(num2<0){

cout<<"Multiplying both numbers = "<<num1\*num2;

} if(num2=0){

cout<<"Adding both numbers = "<<num1+num2;

}

}

1. **For given roll number of a student, display his name Assume that there are only three students**

#include<iostream>

using namespace std;

int main()

{

int roll\_no;

cout<<"Enter the roll no from given choices (252,250,1030) = ";

cin>>roll\_no;

if(roll\_no==252){

cout<<"The entered roll number "<<roll\_no<<" is of Amina.";

} else if(roll\_no==250){

cout<<"The entered roll number "<<roll\_no<<" is of Minahil.";

} else if(roll\_no==1030){

cout<<"The entered roll number "<<roll\_no<<" is of Ali.";

} else{

cout<<"Invalid roll no "<<endl;

}

}

1. **Display the name of a city against the given city code (do it for 4-5 cities)**

#include<iostream>

using namespace std;

int main()

{

int citycode;

cout<<"Enter the city code from given coices (42,41,22,51) = ";

cin>>citycode;

if(citycode==42){

cout<<"This is the Lahore city code = "<<citycode;

} else if(citycode==41){

cout<<"This is the Faisalabad city code = "<<citycode;

} else if (citycode==22){

cout<<"This is the Hyderabad city code = "<<citycode;

} else if (citycode==51){

cout<<"This is the Islamabad city code = "<<citycode;

} else{

cout<<"Invalid input "<<endl;

}

}

1. **Find smallest/largest of three/four numbers**

#include<iostream>

using namespace std;

int main()

{

int num1,num2,num3,num4;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

cout<<"Enter third number: ";

cin>>num3;

cout<<"Enter fourth number: ";

cin>>num4;

if((num1>num2)&&(num1>num3)&&(num1>num4)){

cout<<num1<<" is the largest number.";

} else if((num2>num1)&&(num2>num3)&&(num2>num4)){

cout<<num2<< " is the largest number.";

} else if ((num3>num1)&&(num3>num2)&&(num3>num4)){

cout<<num3<<" is largest number .";

} else if((num4>num1)&&(num4>num2)&&(num4>num3)){

cout<<num4 <<" is the largest number.";

} else{

cout<<"You have entered wrong value."<<endl;

}

}

1. **For given day number of the week, display the corresponding day**

#include<iostream>

using namespace std;

int main()

{

int week;

cout<<"Enter the day number from given choices (1,2,3,4,5,6,7) ";

cin>>week;

switch(week){

case 1:cout<<"Today is Monday = "<<week<<endl;break;

case 2:cout<<"Today is Tuesday = "<<week<<endl;break;

case 3:cout<<"Today is Wednesday = "<<week<<endl;break;

case 4:cout<<"Today is Thursday = "<<week<<endl;break;

case 5:cout<<"Today is Friday = "<<week<<endl;break;

case 6:cout<<"Today is Saturday = "<<week<<endl;break;

case 7:cout<<"Today is Sunday = "<<week<<endl;break;

default:

cout<<"Invalid input "<<endl;}

}

1. **Find season from given month number**

#include <iostream>

using namespace std;

int main(){

cout<<"Enter month number (January(1) to December(12))";

int month;

cin>>month;

switch(month){

case 1: cout<<"January is a Winter season"; break;

case 2: cout<<"Feburary is a Winter season"; break;

case 3: cout<<"March is a Spring season"; break;

case 4: cout<<"April is a Spring season"; break;

case 5: cout<<"May is a Spring season"; break;

case 6: cout<<"June is a Summer season"; break;

case 7: cout<<"July is a Summer season"; break;

case 8: cout<<"August is a Summer season"; break;

case 9: cout<<"September is a Summer season"; break;

case 10: cout<<"October is a Autumn season"; break;

case 11: cout<<"November is a Autumn season"; break;

case 12: cout<<"December is a Winter season"; break;

}

}

1. **Calculate base pay from given annual salary and pay type**

#include<iostream>

using namespace std;

int main(){

double pay\_type=0;

double weekly=0, bi\_monthly=0, monthly=0;

cout<<"Enter the pay-type from given choices (1 or 2 or 3) =";

cin>>pay\_type;

if(pay\_type==1){

cout<<"Enter the weekly amount = ";

cin>>weekly;

cout<<"The base pay weekly = "<<weekly/52;

} else if(pay\_type==2){

cout<<"Enter the bi-monthly = ";

cin>>bi\_monthly;

cout<<"The base pay bi-Monthly = "<<bi\_monthly/24;

} else if(pay\_type==3){

cout<<"Enter the monthly = ";

cin>>monthly;

cout<<"The base pay monthly = "<<monthly/12;

} else{

cout<<"Enter wrong pay type";

}

}

1. **Find grade from given total marks of a student**

#include<iostream>

using namespace std;

int main()

{

int num;

cout<<"Enter number of student in order to find his grades = ";

cin>>num;

if(num>=90){

cout<<"Student got A+ grade.";

} else if((num>=85)&&(num<=89)){

cout<<"Student got A grade.";

} else if((num>=75)&&(num<=84)){

cout<<"Student got B grade.";

} else if ((num>=65)&&(num<=74)){

cout<<"Student got C grade.";

} else if ((num>=50)&&(num<=64)){

cout<<"Student got D grade.";

} else if(num<50){

cout<<"Student is fail.";

} else{

cout<< "You have enterd wrong input.";

}

}

1. **Perform the appropriate operation on given two numbers depending upon the given operation type**

#include<iostream>

using namespace std;

int main()

{

int num1,num2,operation\_type;

cout<<"Enter 1 for addition. ";

cout<<"Enter 2 for subsctraction";

cout<<"Enter 3 for multiplication";

cout<<"Enter 4 for division ";

cout<<"Enter the operation type (1 to 4 only) = ";

cin>>operation\_type;

cout<<"Enter first number: ";

cin>>num1;

cout<<"Enter second number: ";

cin>>num2;

switch(operation\_type)

{

case 1: cout<<"Addition of two numbers a and b = "<<num1+num2<<endl;break;

case 2: cout<<"Substraction of two numbers a and b = "<<num1-num2<<endl;break;

case 3: cout<<"Multiplication of two numbers a and b = "<<num1\*num2<<endl;break;

case 4: cout<<"Division of two numbers a and b = "<<num1/num2<<endl;break;

default:

cout<<"You have eneterd the wrong operation type "<<endl;

}

}

1. **Find temperate in Celsius or Fahrenheit from given temperature and conversion type**

#include<iostream>

using namespace std;

int main()

{

int temp,operation\_type;

cout<<"Enter the Value of temp = "<<endl;

cin>>temp;

cout<<"Enter 1 for Celcius. "<<endl;

cout<<"Enter 2 for Fahrenheit"<<endl;

cout<<"Enter 3 for Kelvin"<<endl;

cout<<"Enter 4 for Rankie "<<endl;

cout<<"Enter the operation type (1 to 4 only) = ";

cin>>operation\_type;

switch(operation\_type){

case 1:cout<<"Temp in Celecius = "<<32+(temp\*1.8)<<endl; break;

case 2:cout<<"Temp in Fahrenheit = "<<(temp - 32) / 1.8<<endl; break;

case 3:cout<<"Temp in Kelvin = "<< 273.15 + temp<<endl; break;

case 4:cout<<"Temp in Rankie\_Temprature = "<<temp \* 5/9<<endl; break;

default:

cout<<"You have entered wrong operation type"<<endl;

}

}

1. **Find weight in appropriate unit from given weight in kilograms and conversion type**

#include<iostream>

using namespace std;

int main(){

int conversion\_type;

float W;

cout<<"Enter the amount of weight in Kg's' = ";

cin>>W;

cout<<"Press 1 for weighing in gram"<<endl;

cout<<"Press 2 for weighing in mg"<<endl;

cout<<"Press 3 for weighing in grains"<<endl;

cout<<"Press 4 for weighing in pounds";

cin>>conversion\_type;

switch(conversion\_type){

case 1:cout<<"Weight in Grams = "<<1000\*W;break;

case 2:cout<<"Weight in Milligram = "<<10000\*W;break;

case 3:cout<<"Weight in Grains = "<<1000\*15.43\*W;break;

case 4:cout<<"Weight in Pounds = "<<2.20\*W;break;

default:

cout<<"Invalid Choice";

}

}

1. **Find/Display first n integers**

#include<iostream>

using namespace std;

int main(){

int n,i;

cout<<"Enter the value of n = ";

cin>>n;

for( i=1;i<=n;i++ ){

cout<<i<<endl;

}

}

1. **Find sum of first n integers**

#include<iostream>

using namespace std;

int main(){

int sum=0,n,i;

cout<<"Enter the value of n = ";

cin>>n;

for(i=1;i<=n;i++){

sum+=i;

}

cout<<"sum of first "<<n<<" integers = "<<sum;

}

1. **Find factorial of a number**

#include<iostream>

using namespace std;

int main(){

int i=1,num,fact=1;

cout<<"Enter the number till which you want to compute factorial = ";

cin>>num;

while(i<=num){

fact=fact\*num;

i++;

}

cout<<fact;

}

1. **Find xy**

#include<iostream>

using namespace std;

int main(){

int y;

float x,result=1;

cout<<"Enter the x = ";

cin>>x;

cout<<"Enter the y = ";

cin>>y;

for(;y!=0;y--){

result=result\*x;

}

cout<<"result = "<<result<<endl;

}

1. **Find sum of first n even numbers**

#include<iostream>

using namespace std;

int main (){

int sum=0,i,n;

cout<<"Enter the value of n = ";

cin>>n;

for(i=1;i<=n;++i){

if((i%2==0))

sum+=i;

}

cout<<"Sum of first "<<n<<" even numbers is = "<<sum<<endl;

}

1. **Find sum of first n odd numbers**

#include<iostream>

using namespace std;

int main(){

int i,sum = 0 ,n;

cout<<"Enter the value of n = ";

cin>>n;

for(i=1;i<=n;++i){

if(i%2==1){

sum+=i;

}

}

cout<<"Sum of first n odd numbers = "<<sum<<endl;

}

1. **Find/Display first n even numbers**

#include<iostream>

using namespace std;

int main(){

int i,n;

cout<<"Enter the value of n = ";

cin>>n;

for(i=1;i<=n;++i){

if(i%2==0){

cout<<i<<endl;

}

}

}

1. **Find/Display first n odd numbers**

#include<iostream>

using namespace std;

int main(){

int n,i;

cout<<"Enter the value of n = ";

cin>>n;

for(i=1;i<=n;++i){

if(i%2==1){

cout<<i<<endl;

}

}

}

1. **Find sum of first n integers numbers starting from 26**

#include<iostream>

using namespace std;

int main(){

int sum,n,a=26;

cout<<"Enter the value of n (greatert the 26 ) = ";

cin>>n;

for(a=26; a<=n;a++ ){

sum+=a;

}

cout<<sum;

}

1. **Find even and odd numbers from first n integers**

#include<iostream>

using namespace std;

int main(){

int num;

cout << "Enter an integer: ";

cin>>num;

cout << "Odd numbers are ";

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

cout << i<<",";

}

cout << "\n\nEven numbers are ";

for(int j=0;j<=num;j+=2){

cout <<j<<",";

}

}

1. **Find all numbers which are divisible by a number from first n integers**

#include<iostream>

using namespace std;

int main()

{

int num1,num2;

cout << "Enter first number: ";

cin>>num1;

cout << "Enter second number: ";

cin>>num2;

cout << "The first "<<num2<<" numbers which are divisible by "<<num1<< " are: ";

for(int i=1;i<=num2;i++){

if(i%num1==0){

cout << i<<" , ";

}

}

}

1. **Find all odd numbers which are divisible by 3 from first n integers**

#include<iostream>

using namespace std;

int main()

{

int num,i;

cout << "Enter an integer: \n";

cin>>num;

cout << "All the odd numbers upto "<<num<< " which are divisible by 3 are ";

for(i=1;i<=num;i+=2){

if(i%3==0)

cout <<i<< ",";

}

}

1. **Find sum of even numbers between any two integers**

#include<iostream>

using namespace std;

int main()

{

int num1,num2,sum=0;

cout << "Enter two integers: ";

cin>>num1>>num2;

for(int i=num1; i<=num2;i+=1)

{

if(i%2==0){

sum+=i;

}

}

cout << "The sum of even numbers between "<<num1<< " and "<<num2<< " is "<<sum;

}

1. **Find sum of odd numbers between any two integers**

#include<iostream>

using namespace std;

int main()

{

int num1,num2,sum=0;

cout << "Enter two integers: ";

cin>>num1>>num2;

for(int i=num1; i<=num2;i+=1)

{

if(i%2==1){

sum+=i;

}

}

cout << "The sum of even numbers between "<<num1<< " and "<<num2<< " is "<<sum;

}

1. **Find how many even and odd numbers are there between any two integers**

#include <iostream>

using namespace std;

int main(){

int num1,num2,num3,oddcount=0,evencount=0;

cout << "Enter two integer: ";

cin>>num1>>num2;

num3=num1;

for(int i=num1; num1<=num2;num1+=1){

if(num1%2==1){

oddcount+=1;

} else

evencount+=1;

}

cout << "Even numbers between "<<num3<< " and "<<num2<< " are "<<evencount;

cout << "\n\nOdd numbers between "<<num3<< " and "<<num2<< " are "<<oddcount;

}

1. **Display multiplication table of a number only if the number is greater than 0**

#include <iostream>

using namespace std;

int main()

{

int num;

cout << "Enter number of multiplication table: ";

cin>>num;

if(num>0){

for(int i=1; i<=10;i++){

cout << num<< " \* "<<i<< " = "<<num\*i<<endl;

}

}else

cout << "\nNumber should be greater than zero.";

}

1. **Find whether a number is prime or composite**

#include<iostream>

using namespace std;

int main()

{

int num,i;

bool prime=true;

cout << "Enter a positive integer: ";

cin>>num;

if(num>0){

if(num==0 || num==1){

prime=false;

}

for(i=2; i<=num/2;i++){

if(num%i==0){

prime=false;

break;

}

}

if(prime==1)

cout <<num<< " is a prime number.";

else

cout <<num<<" is a composite number.";

}else

cout << "Enter a postive integer";

}

1. **Find first divisor of a number which is greater than 5**

#include<iostream>

using namespace std;

int main()

{

int num,i;

bool prime=true;

cout << "Enter a positive integer: ";

cin>>num;

if(num>5){

for(i=2; i<=num/2;i++){

if(num%i==0){

prime=false;

break;

}

}

if(prime==1)

cout << "First divisor of "<<num<< " is "<<num;

else if(prime==0 && num%2==0)

cout << "First divisor of "<<num<< " is 2";

else if(prime==0 && num%2==1)

cout << "First divisor of "<<num<< " is 3";

}else

cout << "Enter a number that is greater than 5";

}

1. **Between any two integers, find all numbers which are divisible by a number, only if the given number is not equal to zero**

#include<iostream>

using namespace std;

int main()

{

int num1,num2,number;

cout << "Enter any two positive integers: ";

cin>>num1>>num2;

cout << "Enter the positive number for divisibility: ";

cin>>number;

if(number!=0){

for(num1;num1<=num2;num1+=1){

if(num1%number==0){

cout << num1<< " , ";

}}}

}

1. **Between any two integers, find all numbers which are divisible by 5 or 10**

#include<iostream>

using namespace std;

int main()

{

int num1,num2;

cout << "Enter any two positive integers: ";

cin>>num1>>num2;

for(num1; num1<=num2; num1+=1){

if(num1%5==0 || num1%10==0){

cout <<num1<<",";

}

}

}

1. **From first n integers, find all numbers which are divisible by 2 and its cube.**

#include<iostream>

using namespace std;

int main()

{

int num,i;

cout << "Enter any postive integer: ";

cin>>num;

for(i=1;i<=num;i++){

if(i%2==0){

cout <<i<<" , " << "\t\t"<<i\*i\*i<<endl;

}

}

}

1. **From first n integers, find all numbers which are divisible by a number and its square, only if the given number is not equal to 0**

#include<iostream>

using namespace std;

int main()

{

int num,number,squareofnumber;

cout << "Enter any positive integer: ";

cin>>num;

cout << "Enter the positive number for divisibility: ";

cin>>number;

squareofnumber=number\*number;

if(number!=0){

for(int i=1;i<=num;i+=1){

if(i%number==0 && i%squareofnumber==0){

cout << i<< " , ";

}

}

}

}

1. **From first n integers, find all numbers which are divisible by a number and its cube, only if the given number is not equal to zero**

#include<iostream>

using namespace std;

int main()

{

int num,number,cubeofnumber;

cout << "Enter any positive integer: ";

cin>>num;

cout << "Enter the positive number for divisibility: ";

cin>>number;

cubeofnumber=number\*number\*number;

if(number!=0){

for(int i=1;i<=num;i+=1){

if(i%number==0 && i%cubeofnumber==0){

cout << i<< " , ";

}}}

}

1. **Between any two integers, find the product of all numbers which are divisible by 3 or 7**

#include<iostream>

using namespace std;

int main()

{

int num1 ,num2;

double product=1;

cout << "Enter any two positive integers: ";

cin>>num1>>num2;

for(num1; num1<=num2; num1++){

if(num1%3==0 || num1%7==0){

product=product\*num1;

}}

cout <<fixed << product;

}

1. **Display multiplication tables of first n integers.**

#include <iostream>

using namespace std;

int main()

{

int tablelimit;

cout << "Enter a number where you want to print multiplication table: ";

cin >>tablelimit;

if (tablelimit>0){

for (int i=1; i<=tablelimit;i++){

cout << "\n\n ---------Table of "<<i<< "---------\n\n";

for(int j =1;j<=10;j++ ){

cout << i << " \* "<<j<< " = "<<i\*j;

cout <<endl;

}

}

}else{

cout << "Invalid Table limit\nEnter a positive value that is greater than zero";

}

}