**LAB 8**

**Objectives:**

Functions with return

**Task 1**

Write a C++ Program that contains four user defined function(s) plus(), minus(), multiply(), divide().

In main() function: Get two numbers from user. Call four user defined functions o Print the result from plus(), minus(), multiply(), divide(). In user defined functions: Plus and Minus function get two integer values and return integer. Multiply and Divide functions get two integer values and return float.

#include<iostream>

using namespace std;

int addition (int n1,int n2);

int subtraction (int n1,int n2);

float multiplication (int n1,int n2);

float division (int n1,int n2);

void main ()

{

int n1,n2,x;

cout<<"Enter first number: ";

cin>>n1;

cout<<"Enter second number: ";

cin>>n2;

x=addition (n1,n2);

cout<<"\n"<<n1<<"+"<<n2<<"="<<x<<endl;

x=subtraction (n1,n2);

cout<<"\n"<<n1<<"-"<<n2<<"="<<x<<endl;

x=multiplication (n1,n2);

cout<<"\n"<<n1<<"\*"<<n2<<"="<<x<<endl;

x=division (n1,n2);

cout<<"\n"<<n1<<"/"<<n2<<"="<<x<<endl;

cout<<"\n";

system("pause");

}

int addition(int n1,int n2)

{

int a=n1+n2;

return a;

}

int subtraction(int n1,int n2)

{

int a=n1-n2;

return a;

}

float multiplication(int n1,int n2)

{

float a=n1\*n2;

return a;

}

float division(int n1,int n2)

{

float a=n1/n2;

return a;

}

**Task 2**

Write a C++ Program that contains one user defined function cal\_grades(). In main() function: Prompt user to enter obtained (0 - 100) marks for one subject. Call cal\_grades(marks\_subject). Print the corresponding Grade with respect to Marks. In user defined function: Perform conditioning with else if statement return char value. Function must return value.

#include<iostream>

using namespace std;

char marks (int n);

void main()

{

int n;

char x;

cout<<"Enter marks: ";

cin>>n;

cout<<"\nYour Marks is "<<n<<endl;

x=marks(n);

cout<<"Your Grade is "<<x<<endl;

cout<<"\n";

system ("pause");

}

char marks (int n)

{

if ((n>=87)&&(n<=100))

return 'A';

else if ((n>=80)&&(n<=86))

return 'B';

else if ((n>=72)&&(n<=79))

return 'b';

else if ((n>=66)&&(n<=71))

return 'C';

else if ((n>=60)&&(n<=65))

return 'c';

else if ((n>=50)&&(n<=59))

return 'D';

else

return 'F';

}

**Task 3**

Write a function that calculate factorial of any number given by user.Function return factorial.

#include<iostream>

using namespace std;

int factorial(int a);

void main()

{

int a,fact;

cout<<"Enter number: ";

cin>>a;

cout<<"\n"<<a<<"! = "<<a;

a=a-1;

for(int i=a;i>=1;i--)

{

cout<<"\*"<<i;

}

cout<<endl;

a=a+1;

fact=factorial(a);

cout<<a<<"! = "<<fact<<endl;

cout<<"\nFactorial of "<<a<<" is "<<fact<<endl;

cout<<"\n";

system("pause");

}

int factorial(int a)

{

int f=1;

for(int i=1;i<=a;i++)

{

f=f\*i;

}

return f;

}

**Task 4**

Wtite a program that contain user define function Prime.This function checks whether the number is prime or not.The function must return value.In main print message **number is prime** for prime number and **number is not** prime if number is not a number prime.

#include<iostream>

using namespace std;

int prime(int num);

void main()

{

int num, x;

cout<<"Enter number: ";

cin>>num;

x=prime(num);

if (x==2)

cout<<"\n"<<num<<" Number is prime"<<endl;

else

cout<<"\n"<<num<<" Number is not a prime"<<endl;

cout<<"\n";

system ("pause");

}

int prime(int num)

{

int count=0;

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

{

if(num%i==0)

{

count++;

}

}

return count;

}

**Task 5**

Write a C++ that calculate the days since your birthday. Get three input from user(birth year, month and day). This program contains three user defined functions.

Cal\_year\_day() : get birth year and current year as parameter and return day difference. Assume that one year has 365 days. Return value is positive integer.

Cal\_month\_day() : get birth month and current month as parameter and return day difference. Assume that one year has 365 days. Return value is positive or negative integer.

Cal\_day(): get birth day and current day as parameter and return day difference. Return value is positive or negative integer

#include<iostream>

using namespace std;

int dob(int day);

int mob(int month);

int yob(int year);

void main()

{

int day,month,year,x,y,z;

cout<<" Enter Your Date of Birth\n";

cout<<"Enter day of birth : ";

cin>>day;

cout<<"Enter month of birth : ";

cin>>month;

cout<<"Enter year of birth : ";

cin>>year;

cout<<"\n Enter Current Date\n";

x=dob(day);

y=mob(month);

z=yob(year);

cout<<"\n Since Your Birthday : "<<x+y+z<<" Days"<<endl<<"\n";

system ("pause");

}

int dob(int day)

{

int cd,d;

cout<<"Enter current day : ";

cin>>cd;

d=cd-day;

return d;

}

int mob(int month)

{

int cm,m;

cout<<"Enter current month : ";

cin>>cm;

m=(cm-month)\*30;

return m;

}

int yob(int year)

{

int cy,y;

cout<<"Enter current year : ";

cin>>cy;

y=(cy-year)\*365;

return y;

}

**Task 6**

Write a program that contains user defined function Salary.

In main input the following.

* Name of a person.
* Number of days in a week he works(in dollar)
* His hourly rate of work.

Assume that he works 8 hours in a day.

In Salary function.You have to calculate the salary of four weeks and return the salary(in dollar).

#include<iostream>

#include<string>

using namespace std;

int salary(int x,int y);

void main()

{

string name;

int x,y,s;

cout<<"Enter your name: ";

cin>>name;

cout<<"Enter number of days you work in a week : ";

cin>>x;

cout<<"Enter your hourly rate in dollers : ";

cin>>y;

cout<<"\n"<<name<<" earns ";

s=salary(x,y);

cout<<s<<" $ in a four weeks."<<endl;

system ("pause");

}

int salary(int x,int y)

{

int t;

t=x\*y\*8\*4;

return t;

}