Assignment - 24

Functions in C++

1. Define a function to check whether a given number is a Prime number or not.

#include<iostream>

using namespace std;

void check\_prime(int num)

{

int flag=1;

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

{

if(num%i==0)

{

flag=0;

break;

}

}

if(flag)

cout<<"given number is prime";

else

cout<<"given number is not prime";

}

int main()

{

int prime;

cout<<"enter any number: ";

cin>>prime;

check\_prime(prime);

return 0;

}

2. Define a function to find the highest value digit in a given number.

#include<iostream>

using namespace std;

void greater1(int a,int b)

{

a<b?cout<<b<<" is greatest":cout<<a<<" is greatest";

}

int main()

{

int a,b;

cin>>a>>b;

greater1(a,b);

}

3. Define a function to calculate x raised to the power y.

#include<iostream>

#include<math.h>

using namespace std;

void power(int a,int n)

{

cout<<a<<"^"<<n<<"="<<pow(a,n);

}

int main()

{

int a,n;

cout<<"enter base and power: ";

cin>>a>>n;

power(a,n);

return 0;

}

4. Define a function to print Pascal Triangle up to N lines.

#include<iostream>

using namespace std;

int factorila(int n)

{

int fact=1;

if(n==0)

return 1;

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

{

fact=fact\*i;

}

return fact;

}

void ncr(int n,int r)

{

// if(n==0)

// cout<<"1";

// else if(r==0)

// {

cout<<factorila(n)/(factorila(n-r)\*factorila(r))<<" ";

// }

}

void pascal(int n)

{

for(int i=0;i<n;i++)

{

for(int j=0;j<=i;j++)

{

ncr(i,j);

}

cout<<endl;

}

}

int main()

{

int n;

cin>>n;

pascal(n);

}

5. Define a function to check whether a given number is a term in a Fibonacci series or

not.

#include<stdio.h>

int main()

{

int a=1,b;

int c;

b=++a + ++a;

printf("%d %d",a,b);

}

6. Define a function to swap data of two int variables using call by reference

#include<iostream>

using namespace std;

void swap(int &a,int &b)

{

a=a+b;

b=a-b;

a=a-b;

}

int main()

{

int a,b;

cout<<"enter the value od a and b: ";

cin>>a>>b;

swap(a,b);

cout<<"a= "<<a<<" b="<<b;

return 0;

}

7. Write a function using the default argument that is able to add 2 or 3 numbers.

#include<iostream>

using namespace std;

int add(int a,int b,int c=0)

{

return a+b+c;

}

int main()

{

int a,b,c;

cout<<"enter two number:";

cin>>a>>b>>c;

cout<<a<<"+"<<b<<"+"<<c<<"=="<<add(a,b,c)<<endl;

cout<<a<<"+"<<b<<"=="<<add(a,b);

return 0;

}

8. Define overloaded functions to calculate area of circle, area of rectangle and area of

triangle

#include <iostream>

#include<math.h>

using namespace std;

void area(int r)

{

cout << "area is " <<3.14\*r\*r<<endl;

}

void area(int l, int b)

{

cout << "area is " <<l\*b<<endl;

}

void area(int a, int b, int c)

{

int s;

s=(a+b+c)/2;

cout << "area is " <<sqrt(s\*(s-a)\*(s-b)\*(s-c))<<endl;

}

int main()

{

int r,l,b;

cout<<"enter radius: ";

cin>>r;

area(r);

cout<<"enter l and b";

cin>>l>>b;

area(l,b);

cout<<"enter a,b,c";

cin>>r>>l>>b;

area(r,l,b);

return 0;

}

9. Write functions using function overloading to find a maximum of two numbers and

both the numbers can be integer or real.

#include<iostream>

using namespace std;

void max(int a,int b)

{

a>b?cout<<a<<" is max":cout<<b<<" is max"<<endl;

}

void max(double a,double b)

{

a>b?cout<<a<<" is max":cout<<b<<" is max";

}

int main()

{

int a,b;

double c,d;

cout<<"enter value of a,b,c,d";

cin>>a>>b>>c>>d;

max(a,b);

max(c,d);

return 0;

}

10. Write functions using function overloading to add two numbers having different data

Types

#include <iostream>

using namespace std;

void add(int a, double b)

{

cout << (a + b)<<endl;

}

void add(int a, float b)

{

cout << (a + b)<<endl;

}

void add(char a, float b)

{

cout << (a + b)<<endl;

}

int main()

{

int a;

float b;

char c;

double d;

cin>>a>>b>>c>>d;

add(a,b);

add(a,d);

add(c,b);

}