\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ASSIGNMENT-24 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

FUNCTION in C++

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

#include <iostream>

using namespace std;

int prime(int n)

{

   int i;

   for (i = 2; i < n; i++)

      if (n % i == 0)

         break;

   if (i == n)

      return 1;

   else

      return 0;

}

int main()

{

   int x, check;

   cout << "Enter a number:";

   cin >> x;

   check = prime(x);

   if (check == 1)

      cout << "Number is prime";

   else

      cout << "Number is not prime";

}

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

#include <iostream>

using namespace std;

int high(int n)

{

   int i,rem,max=0;

   while(n>0)

    {

      rem=n%10;

      n=n/10;

      if(max<rem)

       max=rem;

    }

    return max;

}

int main()

{

   int x, check;

   cout << "Enter a number:";

   cin >> x;

   cout << "Greatest digit is: "<<high(x);

}

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

#include <iostream>

using namespace std;

int power(int m,int n)

{

   int i,max=1;

   while(n>0)

    {

      max=max\*m;

      n--;

    }

    return max;

}

int main()

{

   int x,y,check;

   cout << "Enter value of X and Y:";

   cin >> x>>y;

   cout << "X to the power Y is: "<<power(x,y);

}

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

5. Define a function to check whether a given number is a term in a Fibonacci series or not.

#include <iostream>

using namespace std;

int fib(int n)

{

   int i = 0, p = 0, q = 1, max = 1, temp = 1;

   while (max <= n)

   {

      cout << q << " ";

      temp = p;

      p = q;

      q = temp + q;

      max = q;

      if (n == q)

      {

         cout << q;

         i = 1;

         return 1;

      }

   }

   if (i == 0)

      return 0;

}

int main()

{

   int x, y, check;

   cout << "Enter value:";

   cin >> x;

   check = fib(x);

   if (check == 1)

      cout << "\nYes the number are in series:";

   else

      cout << "\nNo number is not in series:";

}

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

#include <iostream>

using namespace std;

int swap(int &x, int &y)

{

   int temp;

   temp=x;

   x=y;

   y=temp;

}

int main()

{

   int x, y, check;

   cout << "Enter value:";

   cin >> x>>y;

   cout<<"Number without swap is: "<<x<<" "<<y;

   swap(x,y);

   cout<<"\nNumber after swap is: "<<x<<" "<<y;

}

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 x, int y, int z = 0)

{

   return x+y+z;

}

int main()

{

   int x, y, z, choice;

   cout << "Want to add 2 number or 3 number: ";

   cin >> choice;

   if (choice == 2)

   {

      cout << "Enter value:";

      cin >> x >> y;

      cout << "Sum is: " << add(x, y);

   }

   if (choice == 3)

   {

      cout << "Enter value:";

      cin >> x >> y >> z;

      cout << "Sum is: " << add(x, y, z);

   }

   else

    cout<<"INVALID CHOICE";

}

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

#include <iostream>

using namespace std;

float area(int l, int b)

{

   return l \* b;

}

float area(float b, float h)

{

   return 0.5 \* b \* h;

}

float area(float x)

{

   return 3.14 \* x \* x;

}

int main()

{

   float l, b, h, r;

   int temp;

   cout << "for circle , rectangle, or triangle enter 1, 2 or 3:";

   cin >> temp;

   switch (temp)

   {

   case 1:

      cout << "Enter radius: ";

      cin >> r;

      cout << "Area is " << area(r);

      break;

   case 2:

      cout << "Enter length and width: ";

      cin >> l >> b;

      cout << "Area is " << area(l, b);

      break;

   case 3:

      cout << "Enter width and hight: ";

      cin >> b >> h;

      cout << "Area is " << area(b, h);

      break;

   }

}

9.

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

#include <iostream>

using namespace std;

float sum(int p, int q)

{

   return p+q;

}

float sum(float x, float y)

{

   return x + y;

}

int main()

{

   float x, y;

   int p, q, temp;

   cout << "enter 1 if float else any other number: ";

   cin >> temp;

   if (temp == 1)

   {

      cin >> x >> y;

      cout << "Sum is "<<sum(x, y);

   }

   if (temp != 1)

   {

      cin >> p >> q;

      cout << "Sum is "<<sum(p, q);

   }

}