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Assignment no.:1

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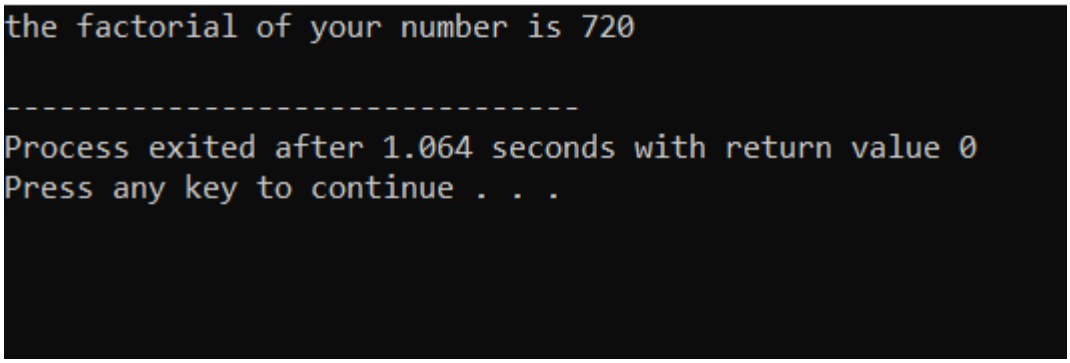
Submitted on:

Question 1

```
#include<iostream>
using namespace std;
int main()
{
	int fact,temp;
	fact=1;
	temp=6;
	for(int i=1;i<=temp;++i)
		{fact=fact*i;}
	cout<<"the factorial of your number is "<<fact<<endl;
	return 0;
}
```

output is:



Question 2

The output to the code:

```
 #include <iostream>
int main() {
int x = 5;
int y = 10;
if (x == 5)
if (y == 10)
std::cout << "x is 5 and y is 10" << std::endl;
else
std::cout << "x is not 5" << std::endl;
return 0;}
```

is:

x is 5 and y is 10

Question 3

```
#include<iostream>

using namespace std;
```

```
int main()
{
	int x;
	cout<<"enter an integer ";
	cin>>x;
	if (x>10&&x<20)
	{cout<<"1"<<endl;}
	else
	{cout<<"0"<<endl;}
	return 0;
}
```

The output is:

```
enter an integer 14
1

--------------------------------
Process exited after 216.9 seconds with return value 0
Press any key to continue . . .
```

Question 4

```
#include <iostream>
using namespace std;
bool isPrime(int a) {
   if (a <= 1) {
      return false;
   }
   for (int i=2; i*i<=a;++i) {
      if (a%i==0) {
         return false;
      }
   }
```

```
    return true;
}
int main() {
    int N;
    cout<<"Enter your number ";
    cin>>N;

    if (N <= 2) {
        cout<<"There is no prime number less than your number "<<endl;
        return 0;
    }
    int largestPrime = 2;
    int num = 3;
    while (num<N) {
        if (isPrime(num)) {
            largestPrime = num;
        }
        num++;
    }

    cout<<"The largest prime number less than your number is "<<largestPrime<<endl;

    return 0;
}
```

The output is:]

```
Enter your number 13
The largest prime number less than your number is 11

--------------------------------
Process exited after 20.89 seconds with return value 0
Press any key to continue . . .
```

Question 5

```
#include <iostream>
#include <string>
using namespace std;
string rotateString(const string& str) {
    return str.substr(1) + str[0];
}

int main() {
    string firststring, secondstring;
    cout << "Enter first string ";
    cin >> firststring;

    cout << "Enter second string ";
    cin >> secondstring;

    if (firststring == secondstring) {
        firststring=rotateString(firststring);
        cout<<"New first string = "<<firststring<<endl;
    } else {
        cout << "Strings are already unequal." << endl;
    }

    return 0;
}
```

The output is:

```
Enter first string hello
Enter second string hello
New first string = elloh

--------------------------------
Process exited after 51.36 seconds with return value 0
Press any key to continue . . .
```

Question 6

```
#include<iostream>

using namespace std;

int main()

{

	int dividend,divisor,temp1,temp2;

	dividend=60;

	temp1=dividend;

	divisor=5;

	if (divisor==0){cout<<"error divison by zero"<<endl;}

	else {

	for(int i=0;temp1>=0;i++)

	{

		temp1=temp1-divisor;

		temp2=i;

	}

	cout<<dividend<<" / "<<divisor<<" = "<<temp2<<endl;

	}


	return 0;


}
```

The output is:

```
60 / 5 = 12

--------------------------------
Process exited after 0.9856 seconds with return value 0
Press any key to continue . . .
```

Question 7

```
#include <iostream>
 #include <string>
 using namespace std;


 int main() {
    string x;
    cout << "Enter a string with upper and lowercase letters ";
    cin >> x;
    int z[256] = {0};
    for(char ch:x)
    {
       z[tolower(ch)]++;
    }
    string y= "";
    for (char ch:x)
    {
       if (z[tolower(ch)]!=0)
       {
          y= y+ch;
          z[tolower(ch)]=0;
       }
    }
```

```
    cout << "Resultant string after removing duplicates is " << y;
    return 0;
}
```

The output is:

```
Enter a string with upper and lowercase letters YEheye
Resultant string after removing duplicates is YEh
```

Question 8

```
#include<iostream>
using namespace std;
int main()
{
        int a[5]={1,2,3,4,5},b[100],n,m;
        cout<<"enter length of extra integers you want to add ";
        cin>>n;
        for(int i=0;i<n;i++){
                cout<<"enter new integers "<<i+1<<" ";
                cin>>b[i];
        }
        for(int i=0;i<5;i++){
                cout<<a[i]<<" ";
        }
        for(int i=0;i<n;i++){
                cout<<b[i]<<" ";
        }
return 0;
}
```

The output is:

```
enter length of extra integers you want to add 4
enter new integers 1 1
enter new integers 2 2
enter new integers 3 3
enter new integers 4 4
1 2 3 4 5 1 2 3 4
--------------------------------
Process exited after 4.447 seconds with return value 0
Press any key to continue . . .
```

Question 9

```
#include <iostream>
 using namespace std;
 int main() {
    int x;
    cout << "Enter a number to represent as a triplet :";
    cin >> x;

 for (int i=0; i<=x; i++)
{
        for (int j=i+1;j<=x;j++)
        {
                for (int k=j+1;k<=x;k++)
                {
                int     a[3]={i,j,k};
                        int sum=a[0]+a[1]+a[2];
                        if (sum== x)
                        {
                                cout<<a[0]<<" "<<a[1]<<" "<<a[2]<<endl;
                        }
                }
        }
```

```
}
return 0;
}
```

The output is:

```
Enter a number to represent as a triplet :7
0 1 6
0 2 5
0 3 4
1 2 4

--------------------------------
Process exited after 5.18 seconds with return value 0
Press any key to continue . . .
```

Question 10

```
#include <iostream>
using namespace std;


void bubbleSort(int arr[], int n) {
 for (int i = 0; i < n-1; i++) {
  for (int j = 0; j < n-i-1; j++) {
    if (arr[j] > arr[j+1]) {
      int temp = arr[j];
      arr[j] = arr[j+1];
      arr[j+1] = temp;
    }
  }
 }
}
int main() {
 int arr[6];
 cout << "Enter 6 integers:\n";
```

```
for (int i = 0; i < 6; i++)
{
   cin >> arr[i];
}
   bubbleSort(arr, 6);
   cout << "Sorted array: ";
   for (int i = 0; i < 6; i++)
   cout << arr[i] << " ";
   cout << endl;

 return 0;
}
```

```
Enter 6 integers:
6
7
5
234
5
235
Sorted array: 5 5 6 7 234 235

--------------------------------
Process exited after 5.16 seconds with return value 0
Press any key to continue . . .
```