Fundamental of programming
Assignment 1

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TASK 1

```cpp
#include<iostream>
using namespace std;
int main()
{
int num,x;
cout<<"Enter the value of number:";
cin>>num;
cout<<"Factor of given number "<<num<<" are :";
for(x=1;x<=num;x++)
{
 if(num%x==0)
 {
        cout<<x<<"," ;
 }

}
return 0;
}
```



```
■ C:\Users\arbab\Documents\TASK\c++ 1.exe

Enter the value of number:35
Factor of given number 35 are :1,5,7,35,
--------------------------------
Process exited after 8.703 seconds with return value 0
Press any key to continue . . . _
```

TASK 2

```cpp
#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;
}
```

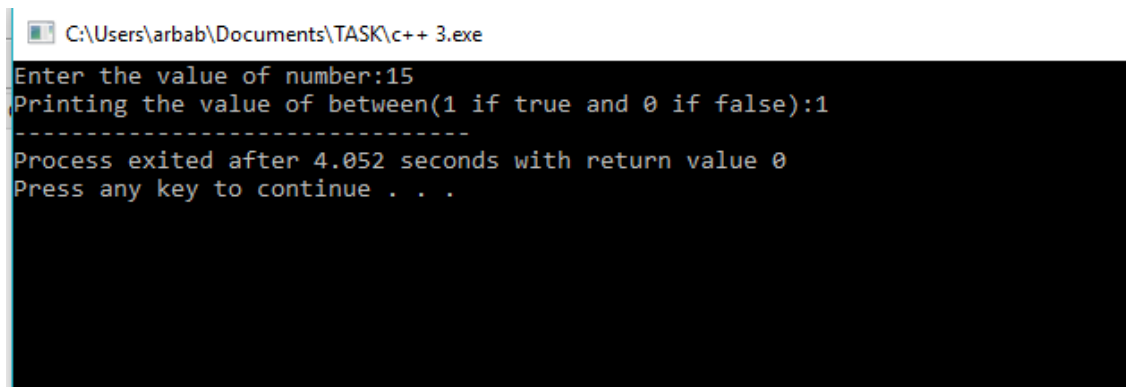C:\Users\arbab\Documents\TASK\c++ 2.exe

```
x is 5 and y is 10

--------------------------------
Process exited after 0.06009 seconds with return value 0
Press any key to continue . . .
```

TASK 3

```cpp
#include<iostream>
using namespace std;
int main()
{
        int num;
        bool btw;
cout<<"Enter the value of number:";
cin>>num;
if(num>10 && num<=20)
{
        btw=1;
}
else
{
        btw=0;
}
```
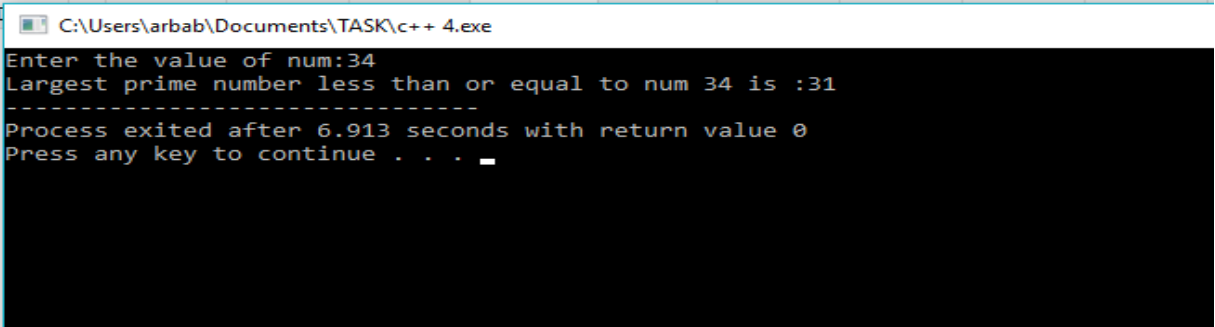
```
Enter the value of number:15
Printing the value of between(1 if true and 0 if false):1
--------------------------------
Process exited after 4.052 seconds with return value 0
Press any key to continue . . .
```

```cpp
cout<<"Printing the value of between(1 if true and 0 if false):"<<btw;
}
```

TASK 4

```cpp
#include<iostream>
using namespace std;
int main()
{
        int num,rem,y;
        bool prime=true;
        cout<<"Enter the value of num:";
        cin>>num;
        for(int i=2;i<=num;i++)
        {
        for(int j=2;j<num;j++)
        {
        if(i!=j)
        {
        rem=i%j;
        if(rem!=0)
        {
         prime=true;
         continue;
        }
        else
        {prime=false;
        break;
        }
        }
        }
        if(prime)
        {y=i;
        }
        }
        cout<<"Largest prime number less than or equal to num "<<num<<" is :"<<y;
        return 0;
}
```

TASK 5

```cpp
#include<iostream>
#include<string>
using namespace std;
int main()
{
string a;
string b;
cout<<"Enter the value for string1:";
cin>>a;
cout<<"Enter the value for string2:";
cin>>b;
int i,j,k,n;
bool equal=true;
n=a.length();
if(a.length()!=b.length()||a!=b)
{
        equal=false;
        cout<<"Strings are unequal";
}
if(a==b)
{
equal=true;
}
if(equal)
{
for(i=0;i<n;i++)
        {
        j=b[i];
        b[i]=b[n-i-1];
        b[n-i-1]=j;
        if(n%2!=0 && n-i-1==i)
        {
        break;
        }
        else if(n%2==0  && n-i==i)
        {
        break;
        }
         }
         cout<<"String 2 after rotation is : "<<b;
         }

}
```

C:\Users\arbab\Documents\TASK\c++ 5.exe

```
Enter the value for string1:HELOO
Enter the value for string2:HELOO
String 2 after rotation is : OOLEH
-------------------------------
Process exited after 10.34 seconds with return value 0
Press any key to continue . . .
```

TASK 6

```cpp
#include<iostream>
using namespace std;
int main()
{
int i,dividend,divisor,quotient,num,remainder;
cout<<"Enter the value of dividend:";
cin>>dividend;
cout<<"Enter the value of divisor:";
cin>>divisor;
num=dividend;
for(i=0;i<=50;i++)
{
        if(num>=divisor)
 {
 num=num-divisor;}
 else
 {
break;
 }
}
quotient=i;
remainder=num;
cout<<dividend<<"/"<<divisor<<"="<<quotient<<endl;
cout<<"Remainder is :"<<remainder;
}
```

C:\Users\arbab\Documents\TASK\c++ 6.exe

```
Enter the value of dividend:95
Enter the value of divisor:5
95/5=19
Remainder is :0
--------------------------------
Process exited after 5.417 seconds with return value 0
Press any key to continue . . .
```
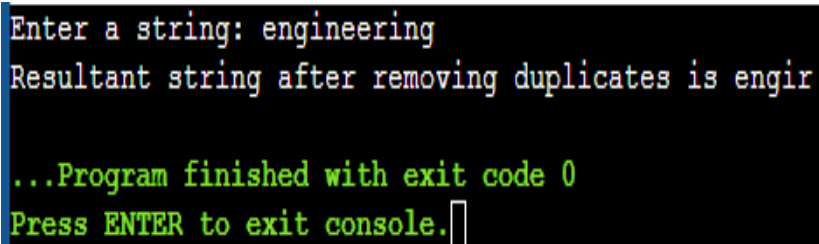
TASK 7

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

int main() {
    string x;
    cout << "Enter a string: ";
    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;
}
```

```
Enter a string: engineering
Resultant string after removing duplicates is engir


...Program finished with exit code 0
Press ENTER to exit console.
```

TASK 8

```cpp
#include<iostream>
using namespace std;
int main()
{
int a[5]={1,2,3,4,5};
int num;
cout<<"Enter the value of 5 numbers:";
for(int i=0;i<5;i++)
{
cin>>num;
a[i]=a[i]+num;
}
cout<<"Value after addition of num in array are:";
for(int i=0;i<5;i++)
{
cout<<a[i]<<" ";
}
}
```
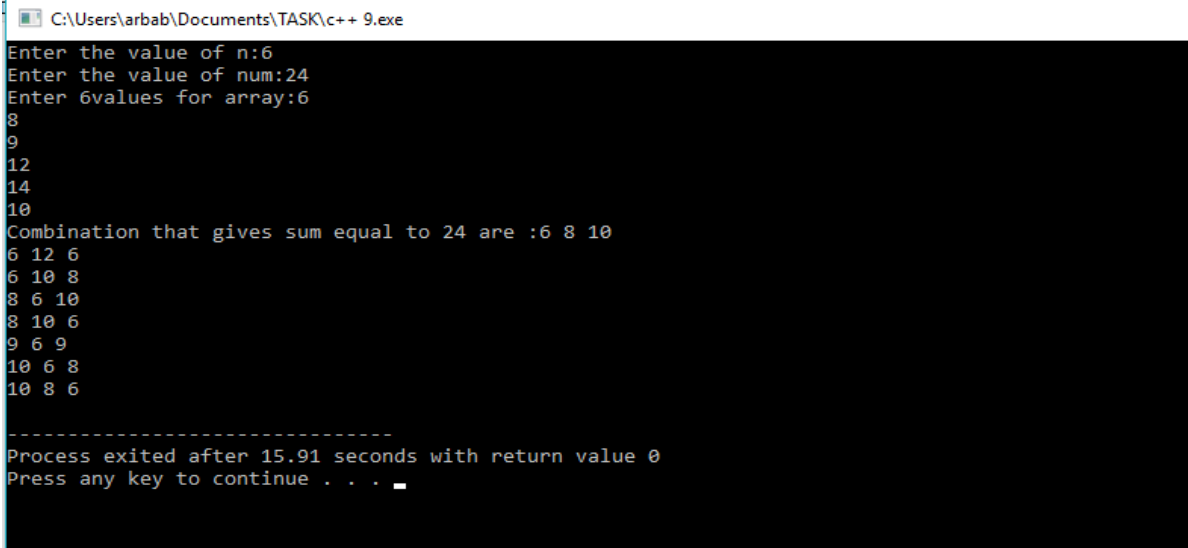
C:\Users\arbab\Documents\TASK\c++ 8.exe

```
Enter the value of 5 numbers:4
3
7
8
2
Value after addition of num in array are:5 5 10 12 7
--------------------------------
Process exited after 6.775 seconds with return value 0
Press any key to continue . . .
```

TASK 9

```cpp
#include<iostream>
using namespace std;
int main()
{
int n,a[n],num(6);
cout<<"Enter the value of n:";
cin>>n;
cout<<"Enter the value of num:";
cin>>num;
cout<<"Enter "<<n<<"values for array:";
for(int i=0;i<n;i++)
{
 cin>>a[i];
}
cout<<"Combination that gives sum equal to "<<num<<" are :";
for(int i=0;i<n;i++)
{
        for(int j=0;j<n;j++)
        {
                for(int k=0;k<n;k++)
                {
                        if(a[i]+a[j]+a[k]==num&&a[i]!=a[j]&&a[j]!=a[k])
                        {
                                cout<<a[i]<<" "<<a[j]<<" "<<a[k]<<" "<<endl;
                        }

                }
        }
}
}
```
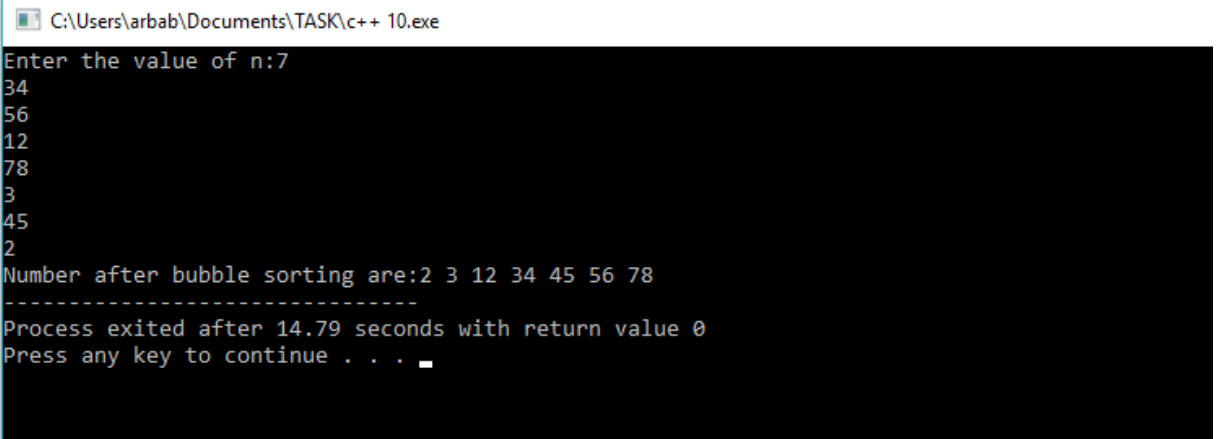
C:\Users\arbab\Documents\TASK\c++ 9.exe

```
Enter the value of n:6
Enter the value of num:24
Enter 6values for array:6
8
9
12
14
10
Combination that gives sum equal to 24 are :6 8 10
6 12 6
6 10 8
8 6 10
8 10 6
9 6 9
10 6 8
10 8 6

-------------------------------
Process exited after 15.91 seconds with return value 0
Press any key to continue . . . _
```

TASK 10

```cpp
#include<iostream>
using namespace std;
int main()
{
        int n,a[n];
        cout<<"Enter the value of n:";
        cin>>n;
        int i,j,k,d;
        for(i=0;i<n;i++)
        {
        cin>>a[i];
        }
        for(i=0;i<n;i++)
        {
                for(j=0;j<n-1;j++)
                {
                  for(k=j;k<=j+1;k++)
                  {
                          if(a[j]>a[k])
                          {
                          d=a[j];
                          a[j]=a[k];
                          a[k]=d;
                            }
                  }
                }
        }
        cout<<"Number after bubble sorting are:";
        for(int m=0;m<n;m++)
{
        cout<<a[m]<<" ";
}
return 0;

}
```

C:\Users\arbab\Documents\TASK\c++ 10.exe

```
Enter the value of n:7
34
56
12
78
3
45
2
Number after bubble sorting are:2 3 12 34 45 56 78
-------------------------------
Process exited after 14.79 seconds with return value 0
Press any key to continue . . . _
```