Assignment :- 5 IT613-Progamming

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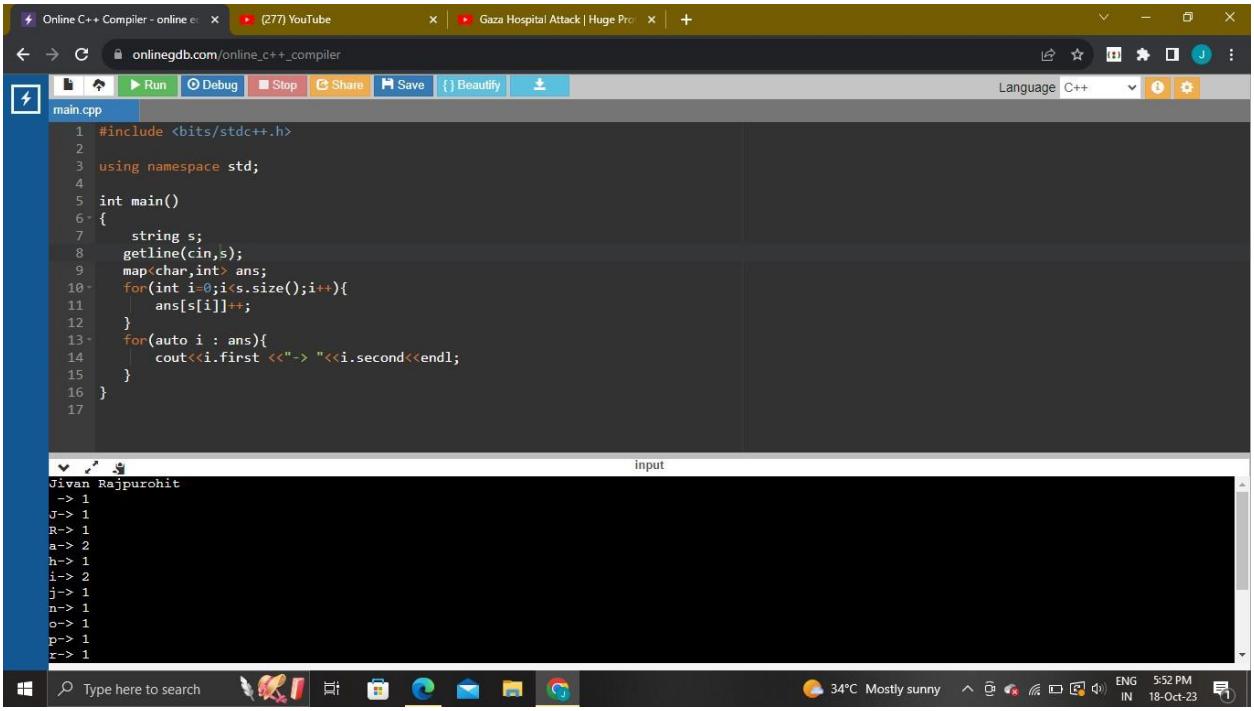
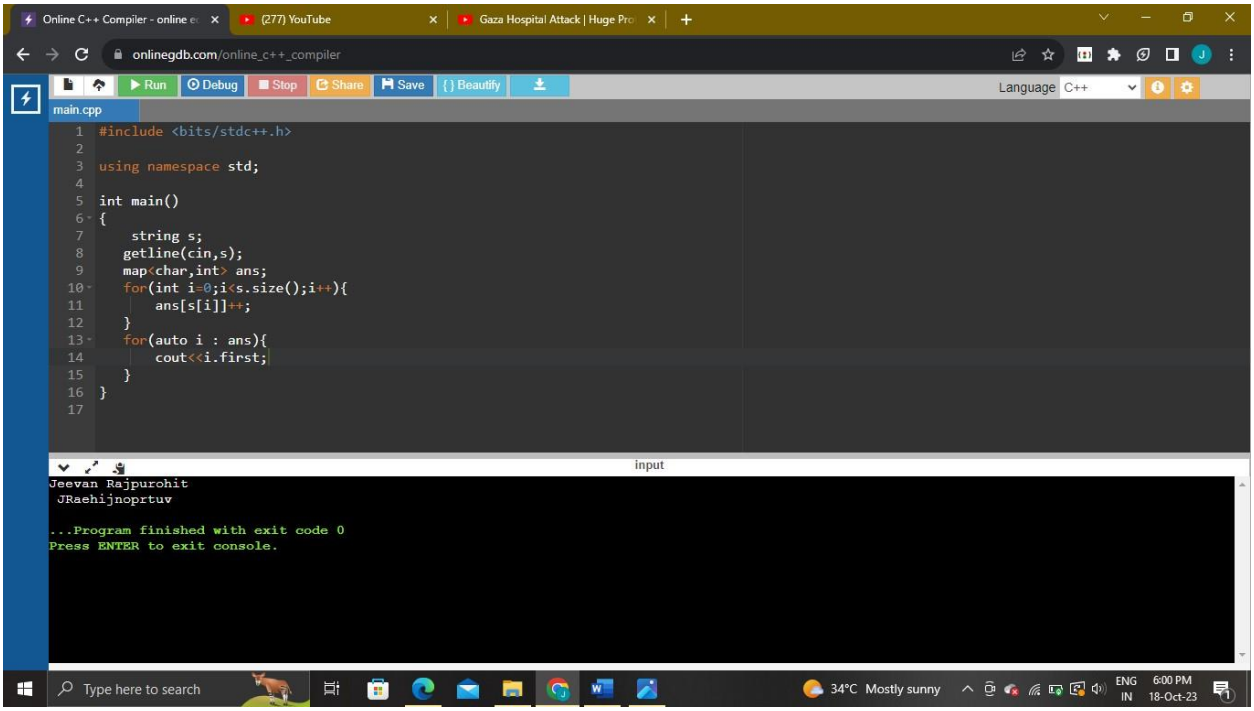
1).

```
#include <bits/stdc++.h>


using namespace std;


int main()
{
   string s;
  getline(cin,s);
  map<char,int> ans;
  for(int i=0;i<s.size();i++){
     ans[s[i]]++;
  }
  for(auto i : ans){
     cout<<i.first <<"-> "<<i.second<<endl;
  }
}
```



2).

```
#include <bits/stdc++.h>


using namespace std;


int main()
{
   string s;
  getline(cin,s);
  map<char,int> ans;
  for(int i=0;i<s.size();i++){
     ans[s[i]]++;
  }
  for(auto i : ans){
     cout<<i.first;
  }
}
```



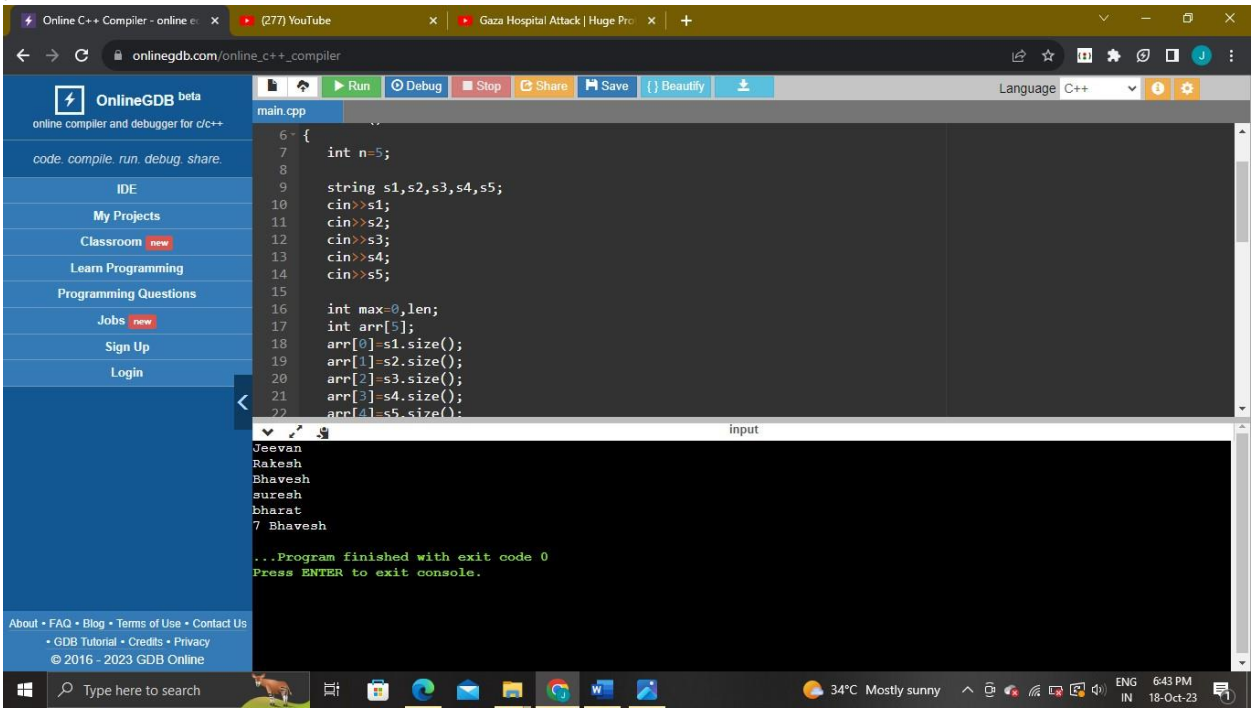
3).

```
#include <bits/stdc++.h>


using namespace std;


int main()

{

  int n=5;


  string s1,s2,s3,s4,s5;

  cin>>s1;

  cin>>s2;

  cin>>s3;

  cin>>s4;

  cin>>s5;


  int max=0,len;

  int arr[5];
```

```
  arr[0]=s1.size();
  arr[1]=s2.size();
  arr[2]=s3.size();
  arr[3]=s4.size();
  arr[4]=s5.size();

  for(int i=0;i<5;i++){
     if(arr[i]>max){
        max=arr[i];
        len=i;
     }
  }
  switch (len){

  case 0:
   cout<<arr[len]<<" "<<s1;
   break;
  case 1:
   cout<<arr[len]<<" "<<s2;
   break;
  case 2:
   cout<<arr[len]<<" "<<s3;
   break;
  case 3:
   cout<<arr[len]<<" "<<s4;
   break;
  case 4:
   cout<<arr[len]<<" "<<s5;
   break;

}
```

return 0;

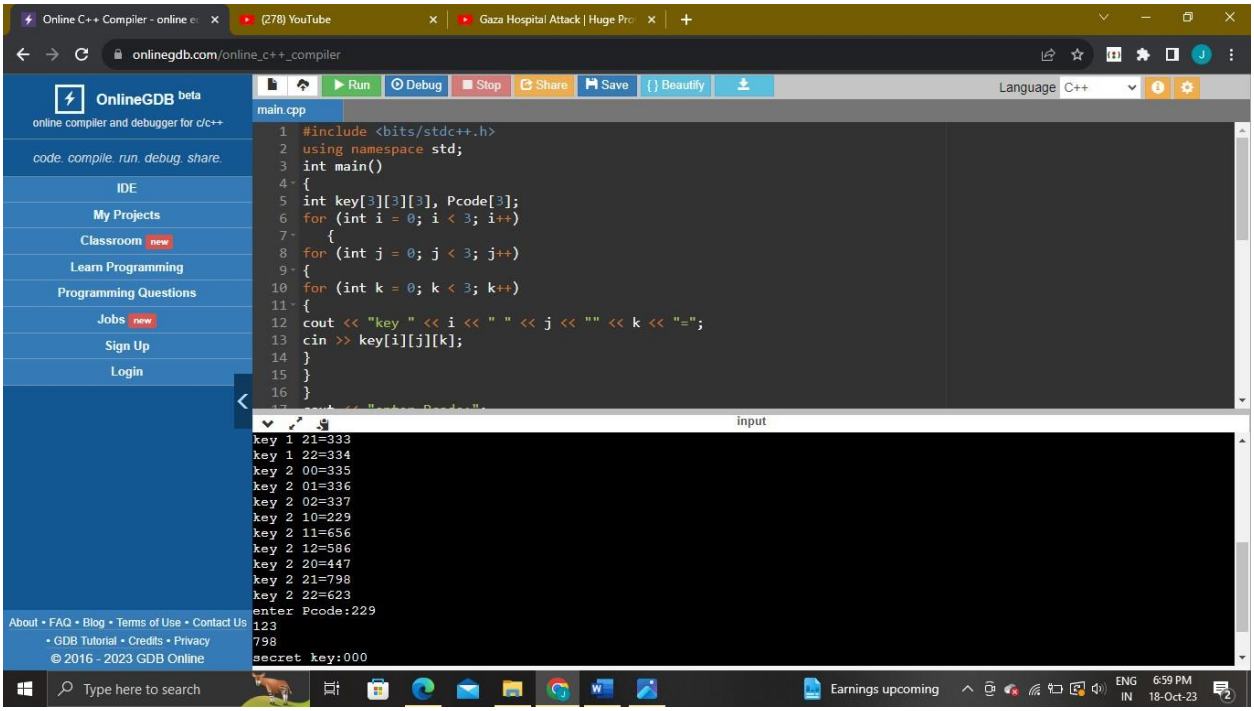
}



4).

```
 #include <bits/stdc++.h>
using namespace std;
int main()
{
int key[3][3][3], Pcode[3];
for (int i = 0; i < 3; i++)
  {
for (int j = 0; j < 3; j++)
{
for (int k = 0; k < 3; k++)
{
cout << "key " << i << " " << j << "" << k << "=";
cin >> key[i][j][k];
}
}
```

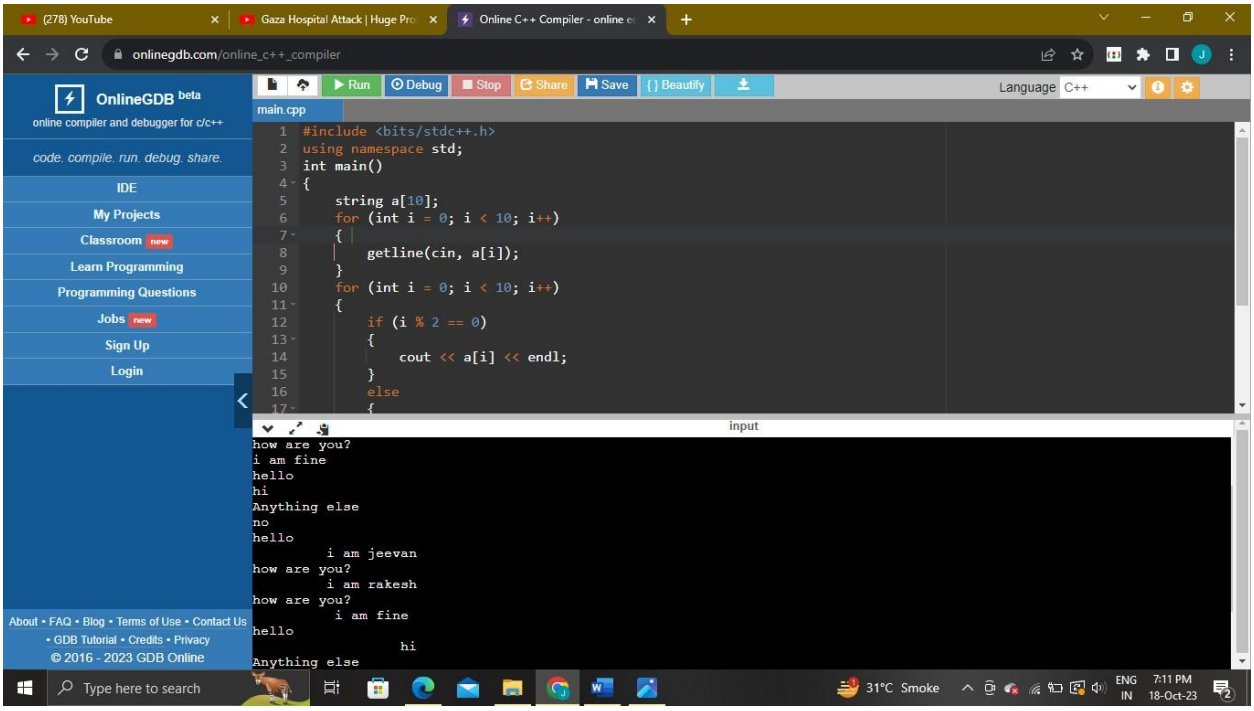
```
}
cout << "enter Pcode:";


   for (int i = 0; i < 3; i++)
   {
      int temp, count = 0;
      cin >> temp;
      for (int j = 0; j < 3; j++)
      {
         for (int k = 0; k < 3; k++)
         {
            if (count == temp)
            {
               Pcode[i] = key[i][j][k];
               break;
            }
            count++;
         }
      }
   }
   cout << "secret key:";
   cout << Pcode[0];
   cout << Pcode[1];
   cout << Pcode[2];
   return 0;
}
```



5).

```
#include <bits/stdc++.h>

using namespace std;

int main()

{

   string a[10];

   for (int i = 0; i < 10; i++)

   {

      getline(cin, a[i]);

   }

   for (int i = 0; i < 10; i++)

   {

      if (i % 2 == 0)

      {

         cout << a[i] << endl;

      }

      else

      {
```

```
        for (int j = 0; j < 20 - a[i].size(); j++)
        {
            cout << ' ';
        }
        cout << a[i] << endl;
      }
   }
   return 0;
}
```



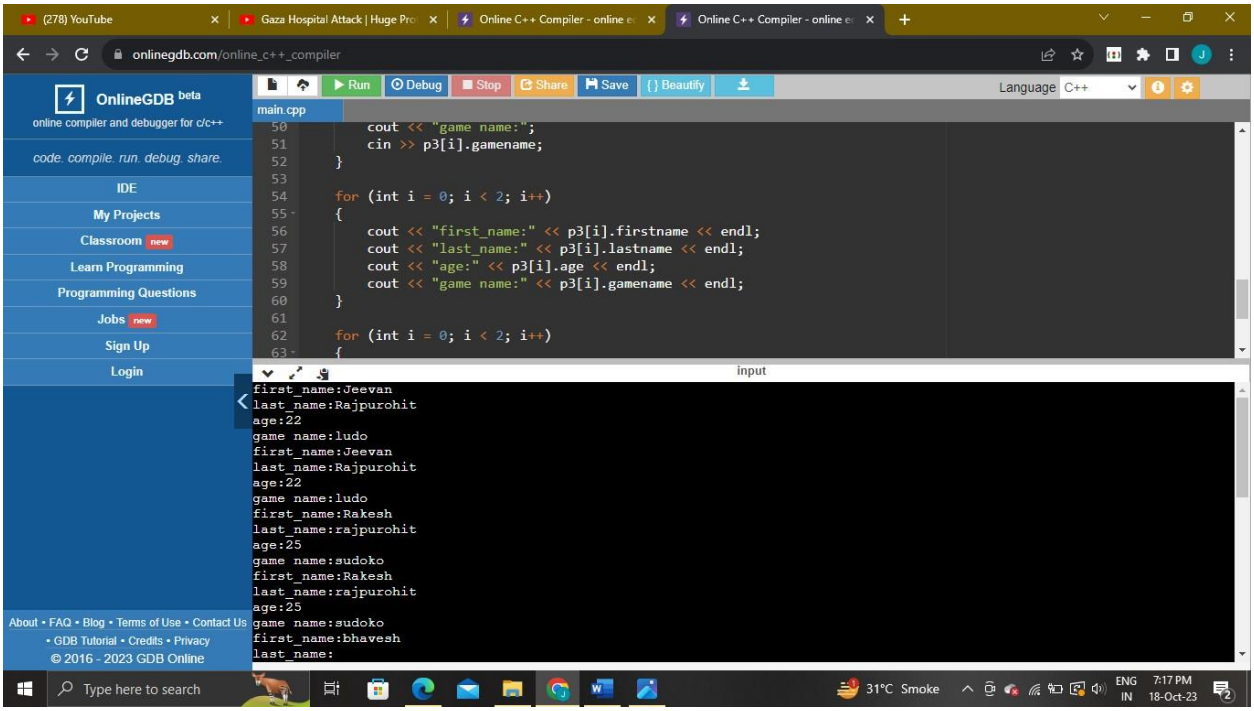
6).

```
#include <bits/stdc++.h>
using namespace std;
struct player
{
   string firstname, lastname, gamename;
   int age;
};
int main()
```

```
{
    struct player p1;
    cout << "first_name:";
    cin >> p1.firstname;
    cout << "last_name:";
    cin >> p1.lastname;
    cout << "age:";
    cin >> p1.age;
    cout << "game name:";
    cin >> p1.gamename;

    cout << "first_name:" << p1.firstname << endl;
    cout << "last_name:" << p1.lastname << endl;
    cout << "age:" << p1.age << endl;
    cout << "game name:" << p1.gamename << endl;

    player *p2 = new player;
    cout << "first_name:";
    cin >> p2->firstname;
    cout << "last_name:";
    cin >> p2->lastname;
    cout << "age:";
    cin >> p2->age;
    cout << "game name:";
    cin >> p2->gamename;

    cout << "first_name:" << p2->firstname << endl;
    cout << "last_name:" << p2->lastname << endl;
    cout << "age:" << p2->age << endl;
    cout << "game name:" << p2->gamename << endl;
```

```
struct player p3[2];
for (int i = 0; i < 2; i++)
{

   cout << "first_name:";
   cin >> p3[i].firstname;
   cout << "last_name:";
   cin >> p3[i].lastname;
   cout << "age:";
   cin >> p3[i].age;
   cout << "game name:";
   cin >> p3[i].gamename;
}

for (int i = 0; i < 2; i++)
{
   cout << "first_name:" << p3[i].firstname << endl;
   cout << "last_name:" << p3[i].lastname << endl;
   cout << "age:" << p3[i].age << endl;
   cout << "game name:" << p3[i].gamename << endl;
}

for (int i = 0; i < 2; i++)
{
   player *p4 = &p3[i];
   cout << "first_name:" << p4->firstname << endl;
   cout << "last_name:" << p4->lastname << endl;
   cout << "age:" << p4->age << endl;
   cout << "game name:" << p4->gamename << endl;
}
return 0;
```

}

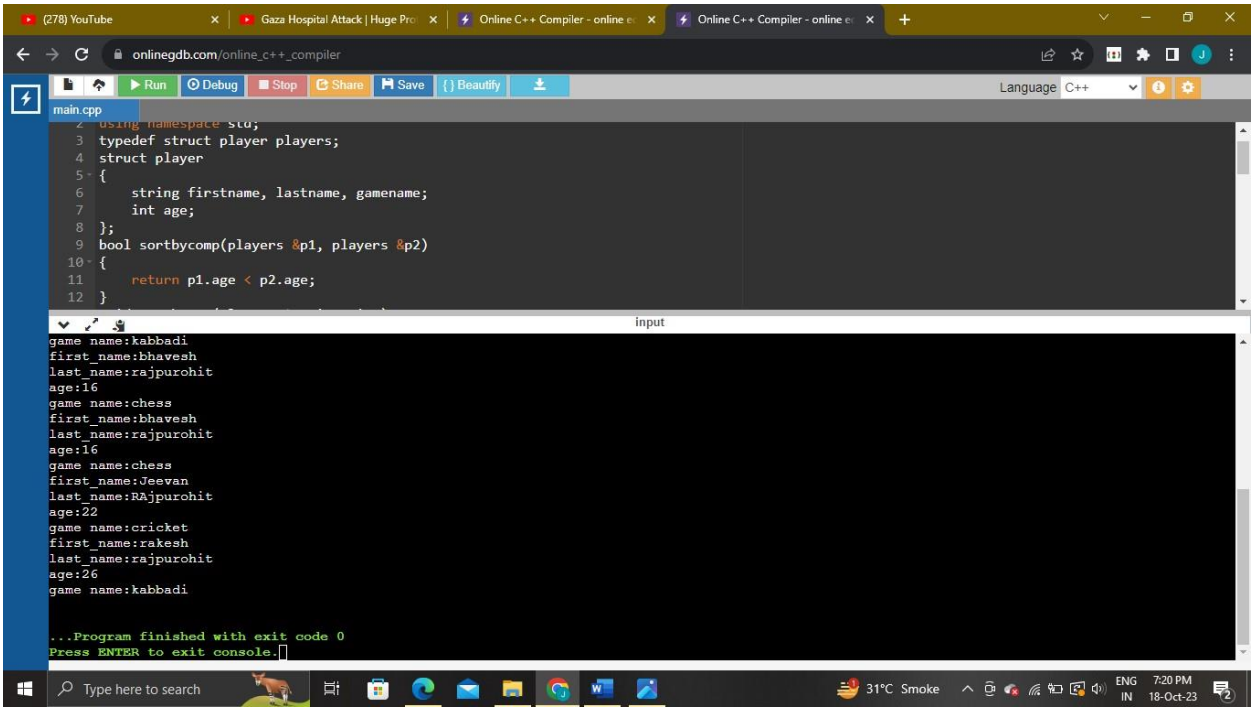


7).

```
#include <bits/stdc++.h>

using namespace std;

typedef struct player players;

struct player

{

   string firstname, lastname, gamename;

   int age;

};

bool sortbycomp(players &p1, players &p2)

{

   return p1.age < p2.age;

}

void sortbyage(players *p, int size)

{

   sort(p, p + size, sortbycomp);

}
```

```
int main()
{

    struct player p3[3];
    for (int i = 0; i < 3; i++)
    {
        cout << "first_name:";
        cin >> p3[i].firstname;
        cout << "last_name:";
        cin >> p3[i].lastname;
        cout << "age:";
        cin >> p3[i].age;
        cout << "game name:";
        cin >> p3[i].gamename;
    }

    for (int i = 0; i < 3; i++)
    {
        cout << "first_name:" << p3[i].firstname << endl;
        cout << "last_name:" << p3[i].lastname << endl;
        cout << "age:" << p3[i].age << endl;
        cout << "game name:" << p3[i].gamename << endl;
    }

    //   sort(p3,p3+3,sortbyage);
    sortbyage(p3, 3);
for (int i = 0; i < 3; i++)
{
cout << "first_name:" << p3[i].firstname << endl;
cout << "last_name:" << p3[i].lastname << endl;
cout << "age:" << p3[i].age << endl;
```

```
cout << "game name:" << p3[i].gamename << endl;
}
return 0;
}
```

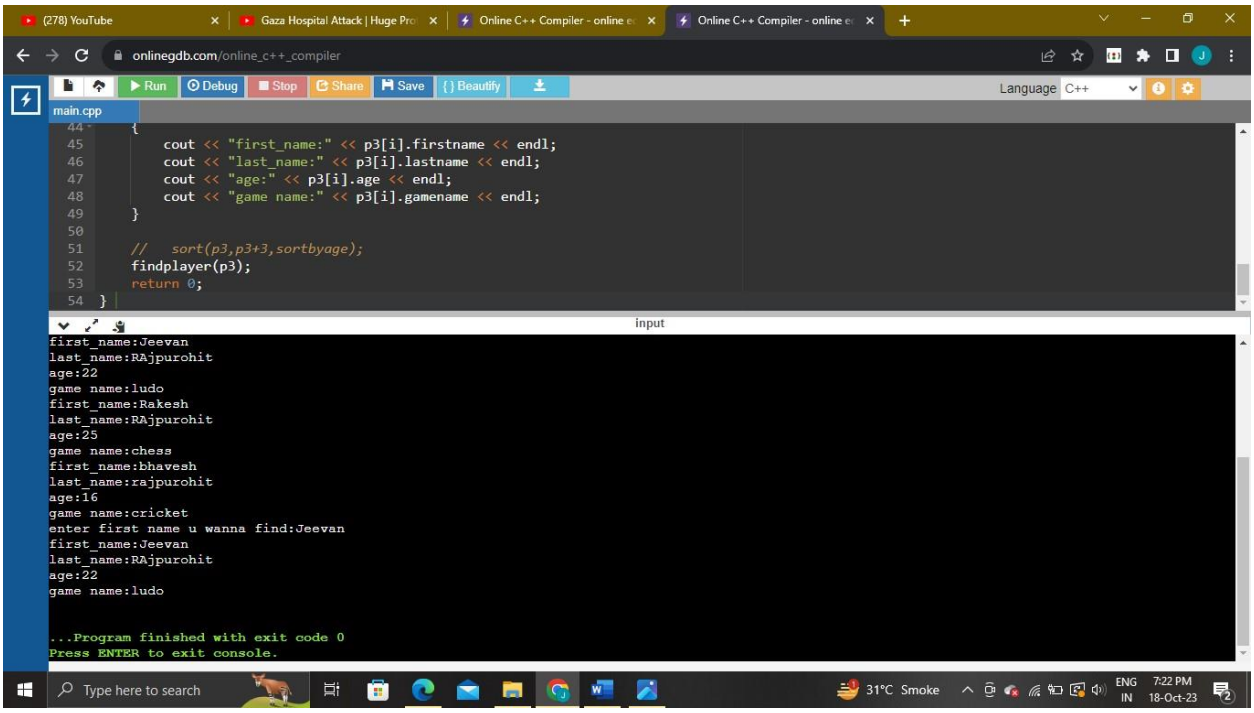


8).

```
#include <bits/stdc++.h>
using namespace std;
typedef struct player players;
struct player
{
string firstname, lastname, gamename;
int age;
};
void findplayer(players *p3)

{
   string temp;
   cout << "enter first name u wanna find:";
```

```
    cin >> temp;
    for (int i = 0; i < 3; i++)
    {
        if (p3[i].firstname == temp)
        {

            cout << "first_name:" << p3[i].firstname << endl;
            cout << "last_name:" << p3[i].lastname << endl;
            cout << "age:" << p3[i].age << endl;
            cout << "game name:" << p3[i].gamename << endl;
        }
    }
}
int main()
{

    struct player p3[3];
    for (int i = 0; i < 3; i++)
    {
        cout << "first_name:";
        cin >> p3[i].firstname;
        cout << "last_name:";
        cin >> p3[i].lastname;
        cout << "age:";
        cin >> p3[i].age;
        cout << "game name:";
        cin >> p3[i].gamename;
    }

    for (int i = 0; i < 3; i++)
    {
```

```
    cout << "first_name:" << p3[i].firstname << endl;
    cout << "last_name:" << p3[i].lastname << endl;
    cout << "age:" << p3[i].age << endl;
    cout << "game name:" << p3[i].gamename << endl;
  }

  //  sort(p3,p3+3,sortbyage);
  findplayer(p3);
  return 0;
}
```

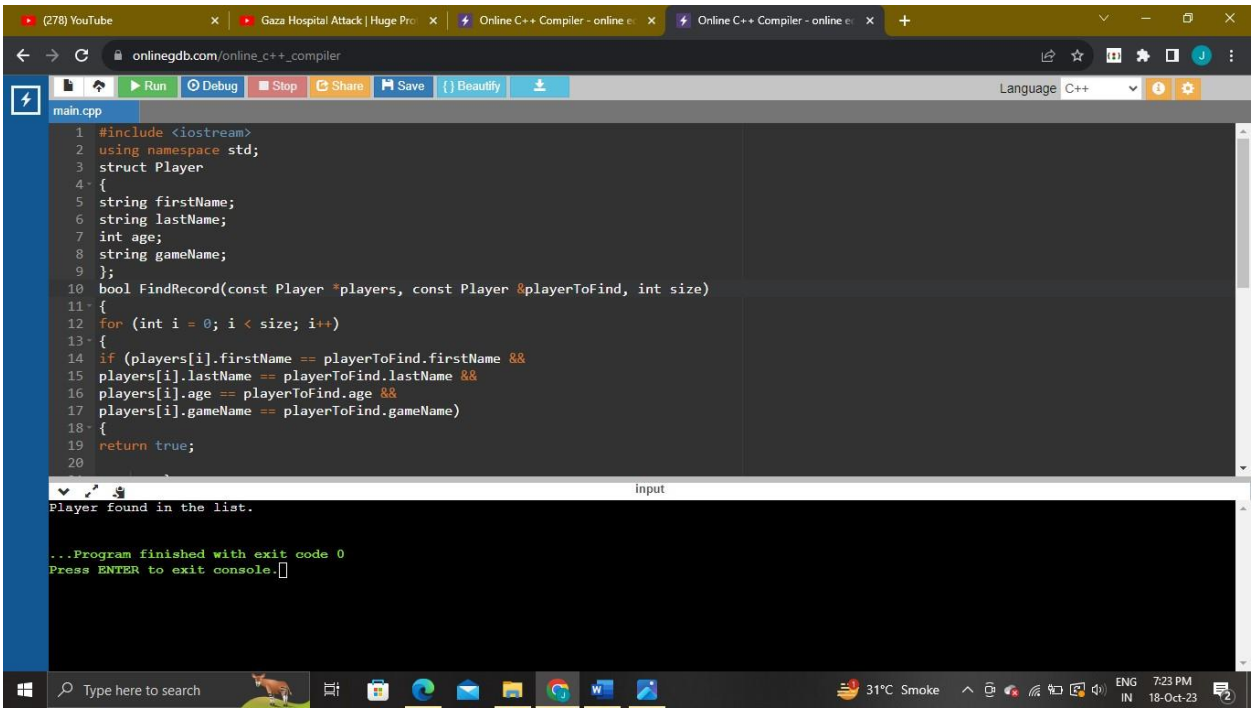


9).

```
#include <iostream>
using namespace std;
struct Player
{
string firstName;
string lastName;
int age;
```

```
string gameName;
};
bool FindRecord(const Player *players, const Player &playerToFind, int size)
{
for (int i = 0; i < size; i++)
{
if (players[i].firstName == playerToFind.firstName &&
players[i].lastName == playerToFind.lastName &&
players[i].age == playerToFind.age &&
players[i].gameName == playerToFind.gameName)
{
return true;

      }
   }
   return false;
}
int main()
{
   Player playersArray[4] = {
      {"Alice", "Smith", 25, "Chess"},
      {"Bob", "Johnson", 32, "Football"},
      {"Charlie", "Brown", 20, "Tennis"},
      {"David", "Lee", 28, "Basketball"}};

   Player playerToFind = {"Alice", "Smith", 25, "Chess"};

   if (FindRecord(playersArray, playerToFind, 4))
   {
      cout << "Player found in the list." << endl;
   }
```

```
    else
    {
        cout << "Player not found in the list." << endl;
    }
    return 0;
}
```

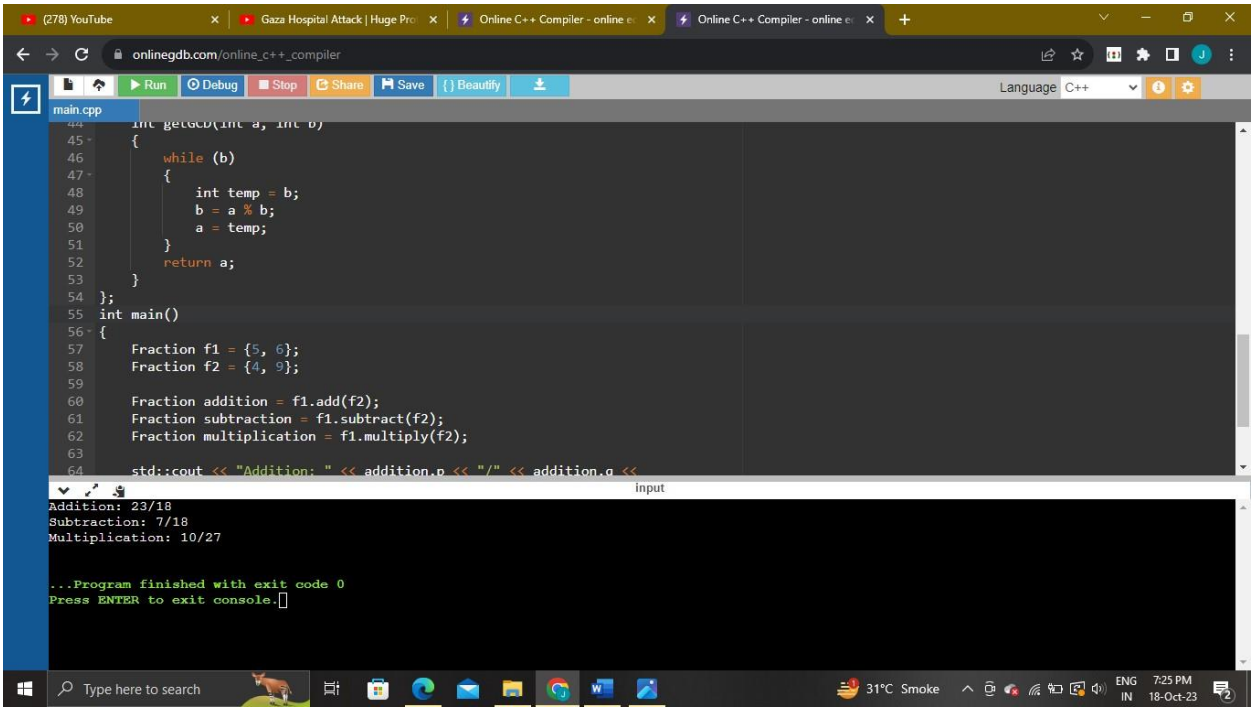


10).

```
#include <iostream>

struct Fraction
{
    int p;
    int q;

    void simplify()
    {
        int gcd = getGCD(p, q);
        p /= gcd;
```

```
    q /= gcd;
}

Fraction add(Fraction other)
{
    Fraction result;
    result.p = p * other.q + other.p * q;
    result.q = q * other.q;
    result.simplify();
    return result;
}

Fraction subtract(Fraction other)
{
    Fraction result;
    result.p = p * other.q - other.p * q;
    result.q = q * other.q;
    result.simplify();
    return result;
}

Fraction multiply(Fraction other)
{
    Fraction result;
    result.p = p * other.p;
    result.q = q * other.q;
    result.simplify();
    return result;
}
```

```
private:
    int getGCD(int a, int b)
    {
        while (b)
        {
            int temp = b;
            b = a % b;
            a = temp;
        }
        return a;
    }
};
int main()
{
    Fraction f1 = {5, 6};
    Fraction f2 = {4, 9};

    Fraction addition = f1.add(f2);
    Fraction subtraction = f1.subtract(f2);
    Fraction multiplication = f1.multiply(f2);

    std::cout << "Addition: " << addition.p << "/" << addition.q <<
std::endl;
    std::cout << "Subtraction: " << subtraction.p << "/" << subtraction.q <<
std::endl;
    std::cout << "Multiplication: " << multiplication.p << "/" <<
multiplication.q << std::endl;
    return 0;
}
```

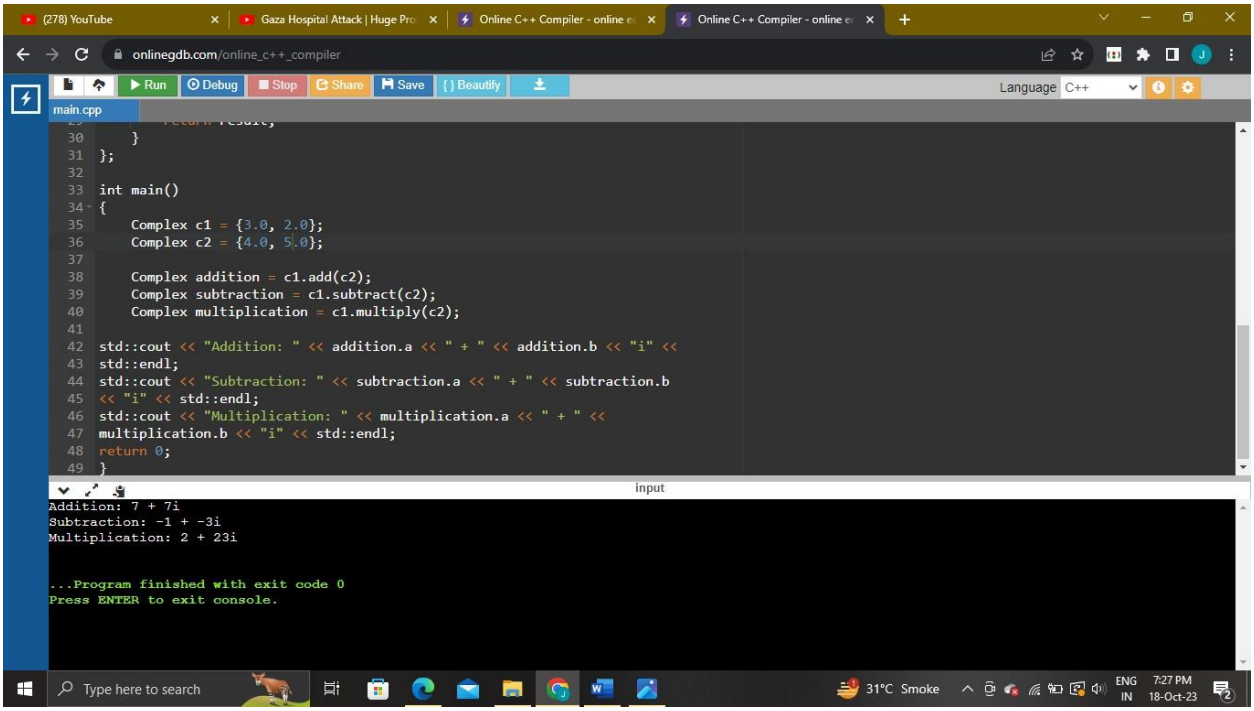


11).

```
#include <iostream>


   struct Complex
{
   double a;
   double b;


   Complex add(Complex other)
   {
      Complex result;
      result.a = a + other.a;
      result.b = b + other.b;
      return result;
   }


   Complex subtract(Complex other)
   {
```

```
        Complex result;
        result.a = a - other.a;
        result.b = b - other.b;
        return result;
    }

    Complex multiply(Complex other)
    {
        Complex result;
        result.a = (a * other.a) - (b * other.b);
        result.b = (a * other.b) + (b * other.a);
        return result;
    }
};

int main()
{
    Complex c1 = {3.0, 2.0};
    Complex c2 = {4.0, 5.0};

    Complex addition = c1.add(c2);
    Complex subtraction = c1.subtract(c2);
    Complex multiplication = c1.multiply(c2);

std::cout << "Addition: " << addition.a << " + " << addition.b << "i" <<
std::endl;
std::cout << "Subtraction: " << subtraction.a << " + " << subtraction.b
<< "i" << std::endl;
std::cout << "Multiplication: " << multiplication.a << " + " <<
multiplication.b << "i" << std::endl;
return 0;
```

}


(278) YouTube
Gaza Hospital Attack | Huge Pro
Online C++ Compiler - online e
Online C++ Compiler - online e
onlinegdb.com/online_c++_compiler
Run
Debug
Stop
Share
Save
{ } Beautify
Language C++
main.cpp
}
};
int main()
{
Complex c1 = {3.0, 2.0};
Complex c2 = {4.0, 5.0};
Complex addition = c1.add(c2);
Complex subtraction = c1.subtract(c2);
Complex multiplication = c1.multiply(c2);
std::cout << "Addition: " << addition.a << " + " << addition.b << "i" <<
std::endl;
std::cout << "Subtraction: " << subtraction.a << " + " << subtraction.b
<< "i" << std::endl;
std::cout << "Multiplication: " << multiplication.a << " + " <<
multiplication.b << "i" << std::endl;
return 0;
}
input
Addition: 7 + 7i
Subtraction: -1 + -3i
Multiplication: 2 + 23i
...Program finished with exit code 0
Press ENTER to exit console.
Type here to search
31°C Smoke
ENG
IN
7:27 PM
18-Oct-23