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Assignment 1:

Question 1:

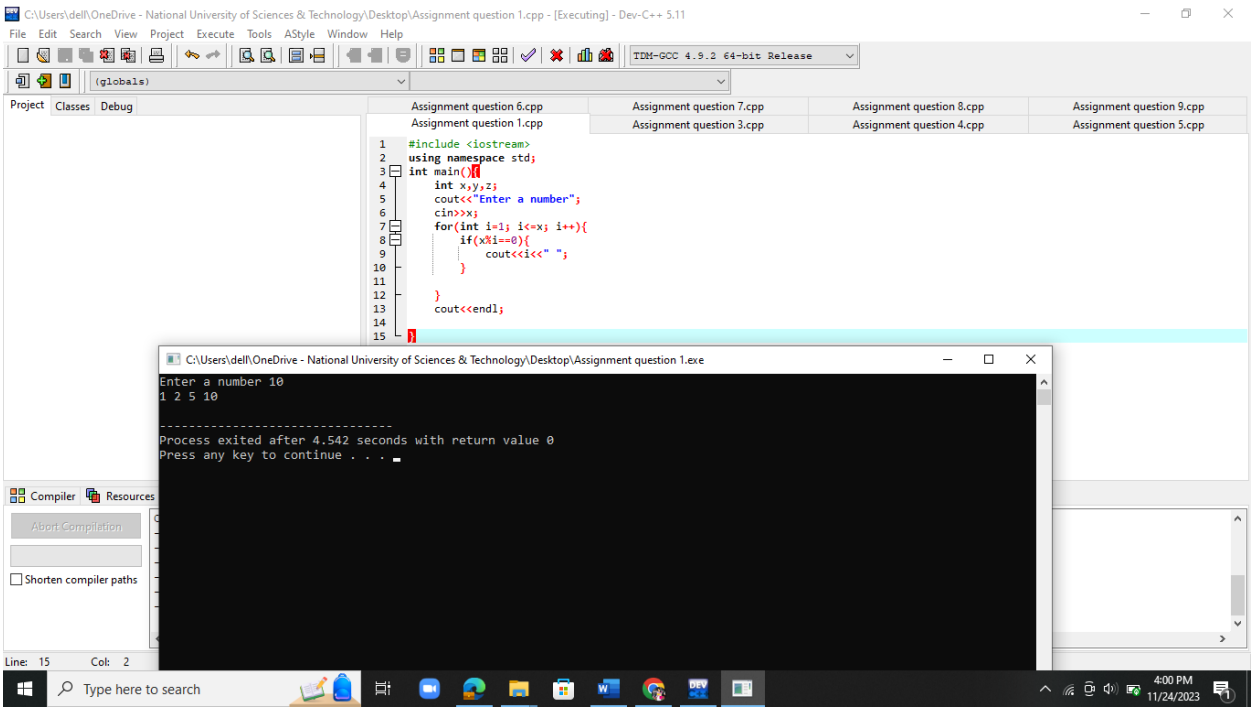
Write a C++ program to display factors of a number using for loops.

Answer:

```
#include <iostream>
using namespace std;
int main(){
	int x,y,z;
	cout<<"Enter a number";
	cin>>x;
	for(int i=1; i<=x; i++){
		if(x%i==0){
			cout<<i<<" ";
		}

	}
	cout<<endl;

}
```



Question 2:

Write output to the following code.

Answer:

X is 5 and y is 10.

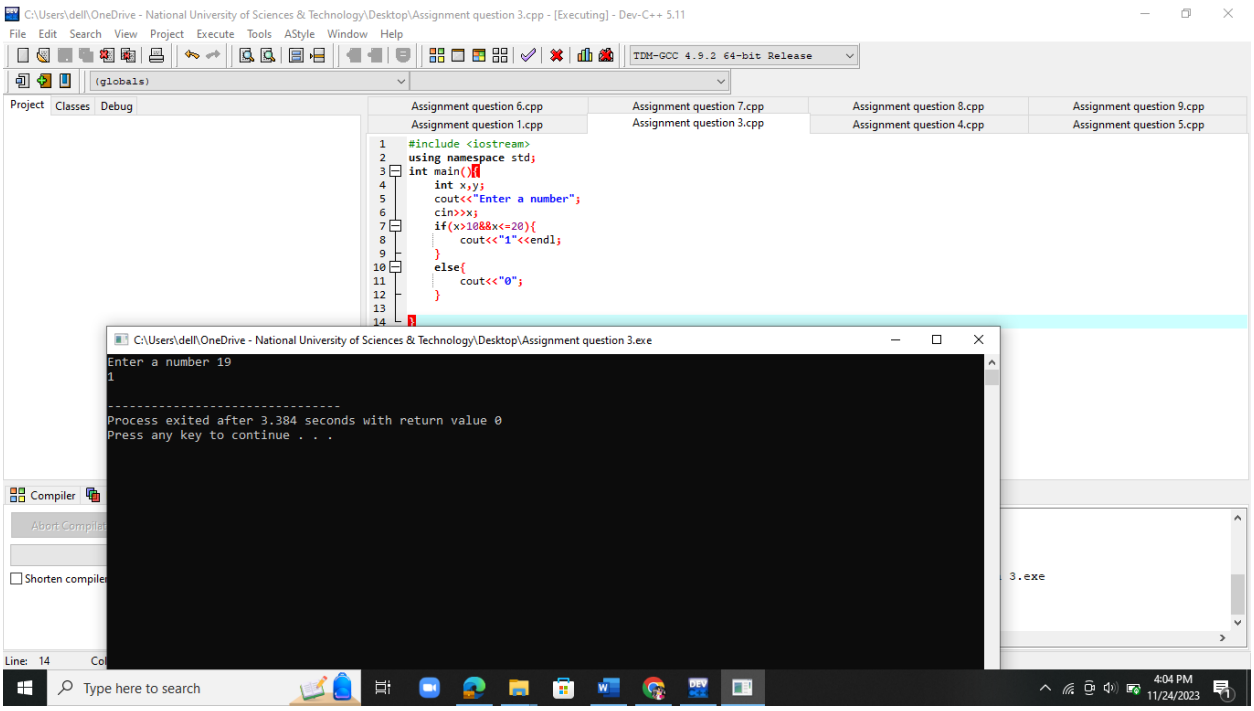
Question 3:

Write a C++ program, take an integer value from user and check if it's greater than 10 and less thanequal to 20. Print 1 if yes and print 0 if no. Use appropriate datatype for output.

Answer:

```
1. #include <iostream>
2. using namespace std;
3. int main(){
4.         int x,y;
5.         cout<<"Enter a number";
6.         cin>>x;
7.         if(x>10&&x<=20){
8.                 cout<<"1"<<endl;
```

```
9.          }
10.         else{
11.                 cout<<"0";
12.         }
13.
14.}
```



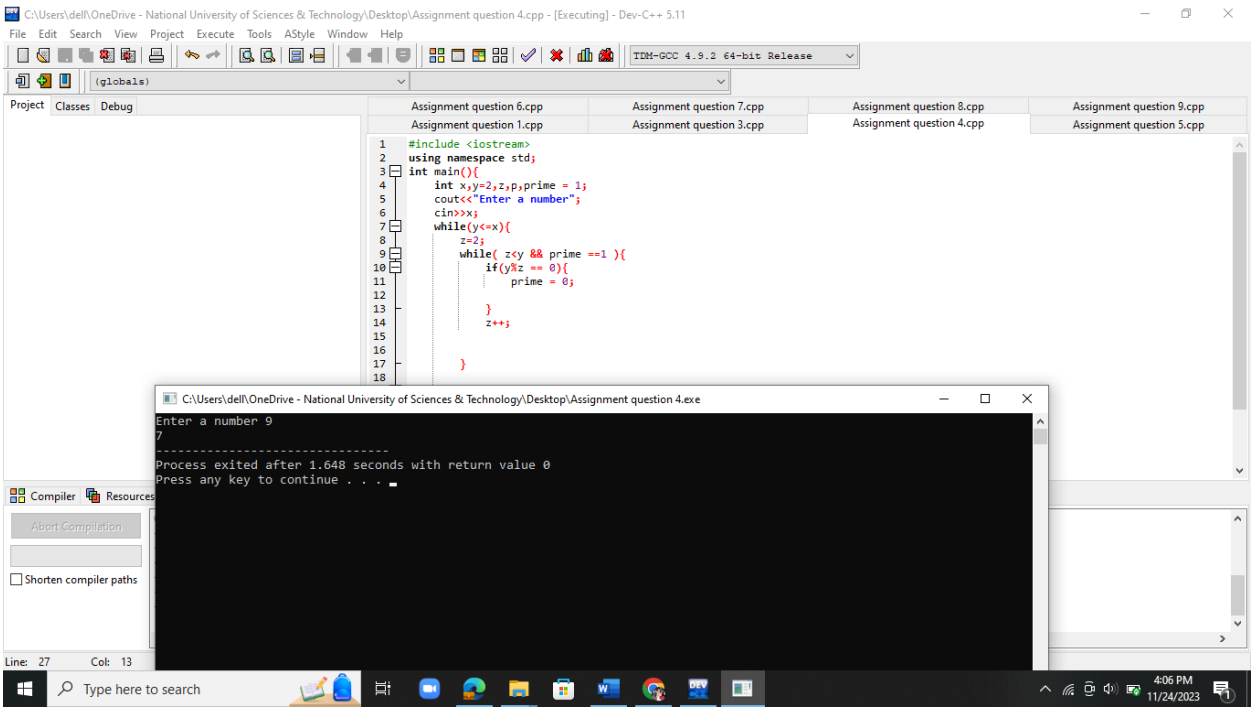
Question 4:

Write a C++ program that uses a while loop to find the largest prime number less than a given positive integer N. Your program should take the value of N as input from the user and then find the largest prime number less than or equal to N. You are not allowed to use any library or pre-existing functions to check for prime numbers.

Answer:

```
1. #include <iostream>
2. using namespace std;
3. int main(){
4.          int x,y=2,z,p,prime = 1;
5.          cout<<"Enter a number";
6.          cin>>x;
```

```
7.          while(y<=x){
8.                  z=2;
9.                  while( z<y && prime ==1 ){
10.                         if(y%z == 0){
11.                                 prime = 0;
12.
13.                         }
14.                         z++;
15.
16.
17.                 }
18.
19.                 if(prime ==1){
20.                         p= y;
21.                 }
22.
23.                 y++;
24.                 prime =1;
25.         }
26.
27.         cout<<p;
28.
29.}
```



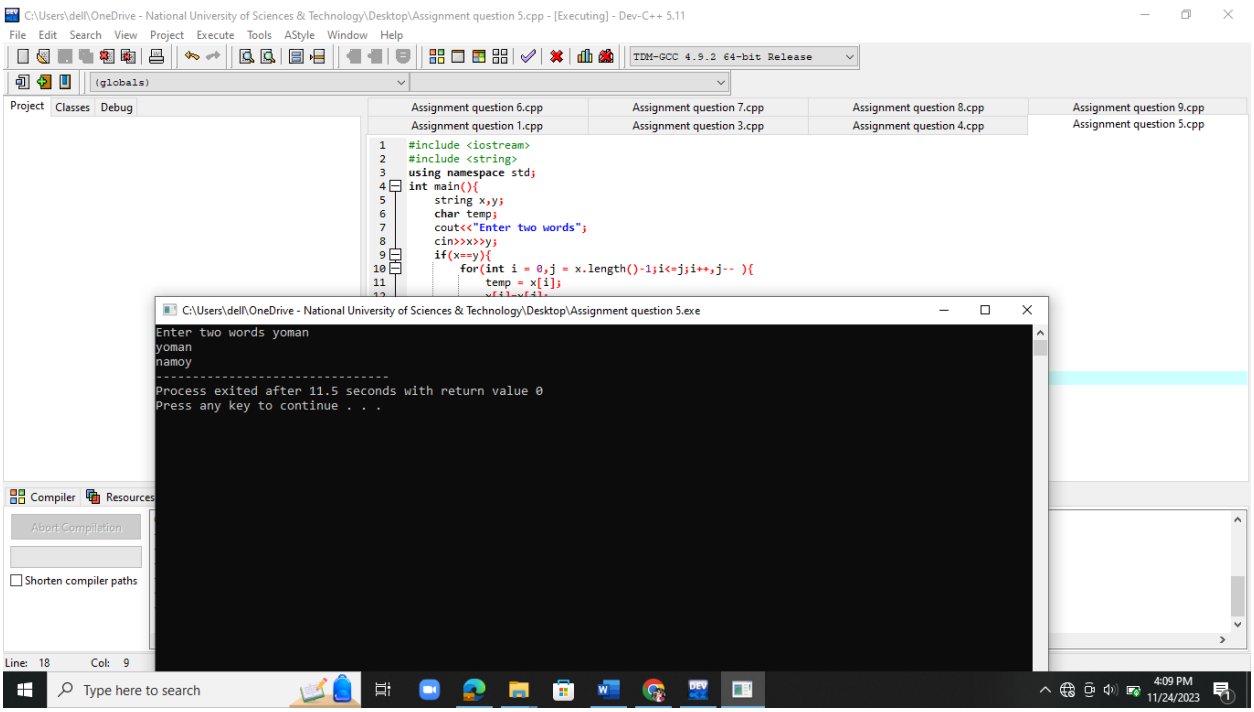
Question 5:

Write a C++ program, take two string as input from user and check if both strings are equal or not. If they are equal make them unequal by rotating string. e.g., Hello is turned into olleH etc.

Answer:

```
#include <iostream>
#include <string>
using namespace std;
int main(){
        string x,y;
        char temp;
        cout<<"Enter two words";
        cin>>x>>y;
        if(x==y){
                for(int i = 0,j = x.length()-1;i<=j;i++,j-- ){
                        temp = x[i];
                        x[i]=x[j];
                        x[j] = temp;
                }
```

```
15.             cout<<x;
16.     }
17.     else{
18.
19.     cout<<"The words are not the same";
20.
21.     }
22.
23.
24.}
```



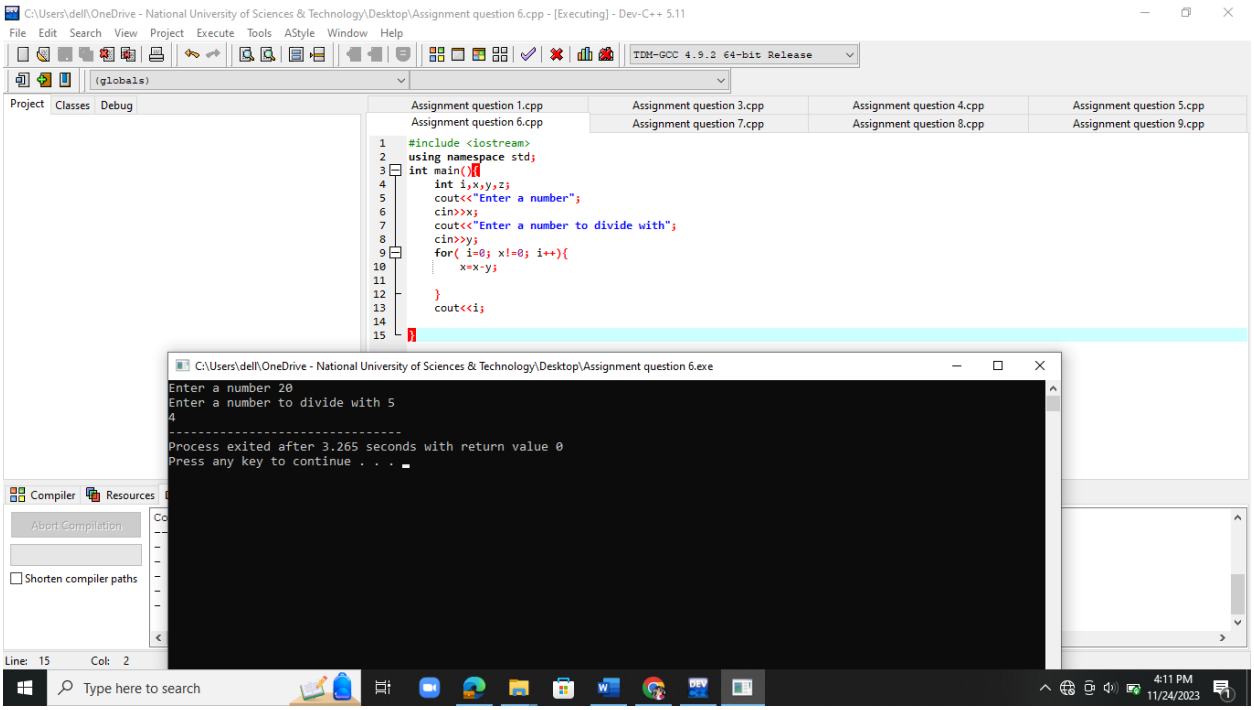
Question 6:

Perform division in C++ without / using for loops. You can use / only to display the final results. Your dividend must be greater than divisor.

Answer:

```
1. #include <iostream>
2. using namespace std;
3. int main(){
4.         int i,x,y,z;
5.         cout<<"Enter a number";
```

```
6.          cin>>x;
7.          cout<<"Enter a number to divide with";
8.          cin>>y;
9.          for( i=0; x!=0; i++){
10.                 x=x-y;
11.
12.         }
13.         cout<<i;
14.
15.}
```



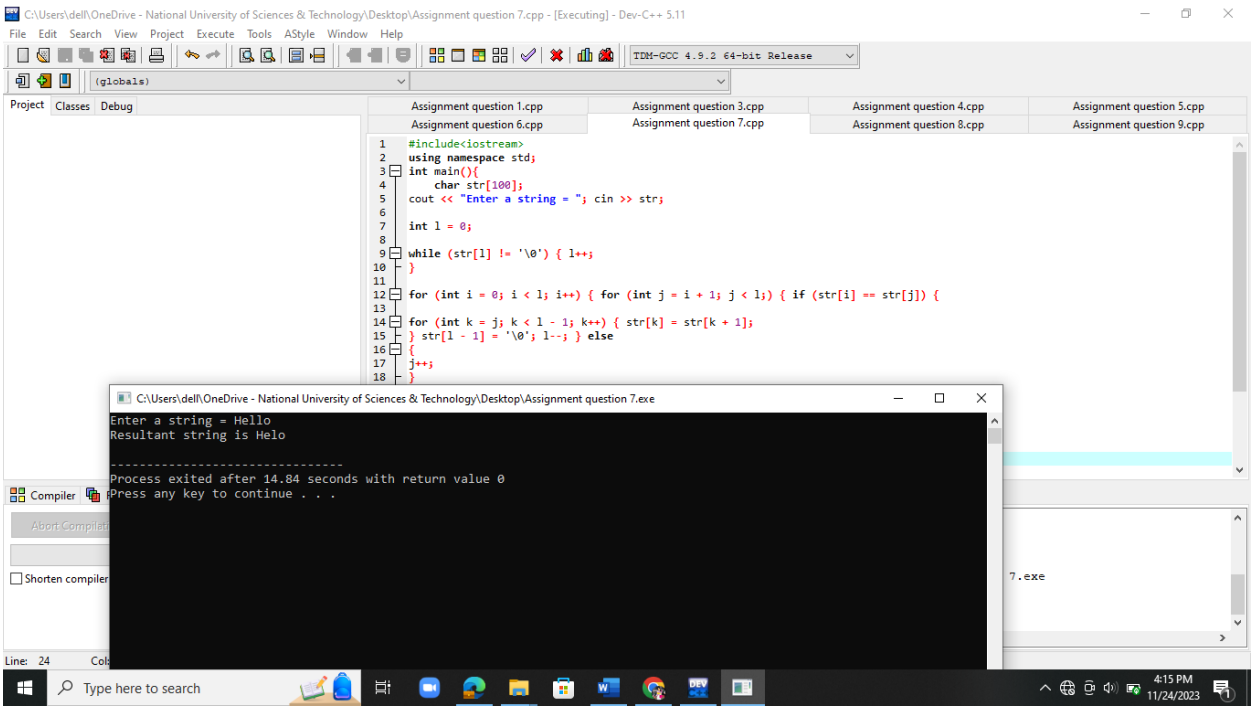
Question 7:

Write a C++program for a string which may contain lowercase and uppercase characters. The task is to remove all duplicate characters from the string and find the resultant string.

Answer:

```
1. #include<iostream>
2. using namespace std;
3. int main(){
4.          char str[100];
```

```
5.  cout << "Enter a string = "; cin >> str;
6.
7.  int l = 0;
8.
9.  while (str[l] != '\0') { l++;
10.}
11.
12.for (int i = 0; i < l; i++) { for (int j = i + 1; j < l;) { if (str[i] == str[j]) {
13.
14.for (int k = j; k < l - 1; k++) { str[k] = str[k + 1];
15.} str[l - 1] = '\0'; l--; } else
16.{
17.j++;
18.}
19.}
20.}
21.
22.cout << "Resultant string is " << str << endl;
23.
24.return 0;
25.}
```



Question 8:

Suppose an integer array a[5] = {1,2,3,4,5}. Add more elements to it and display them in C++

Answer:

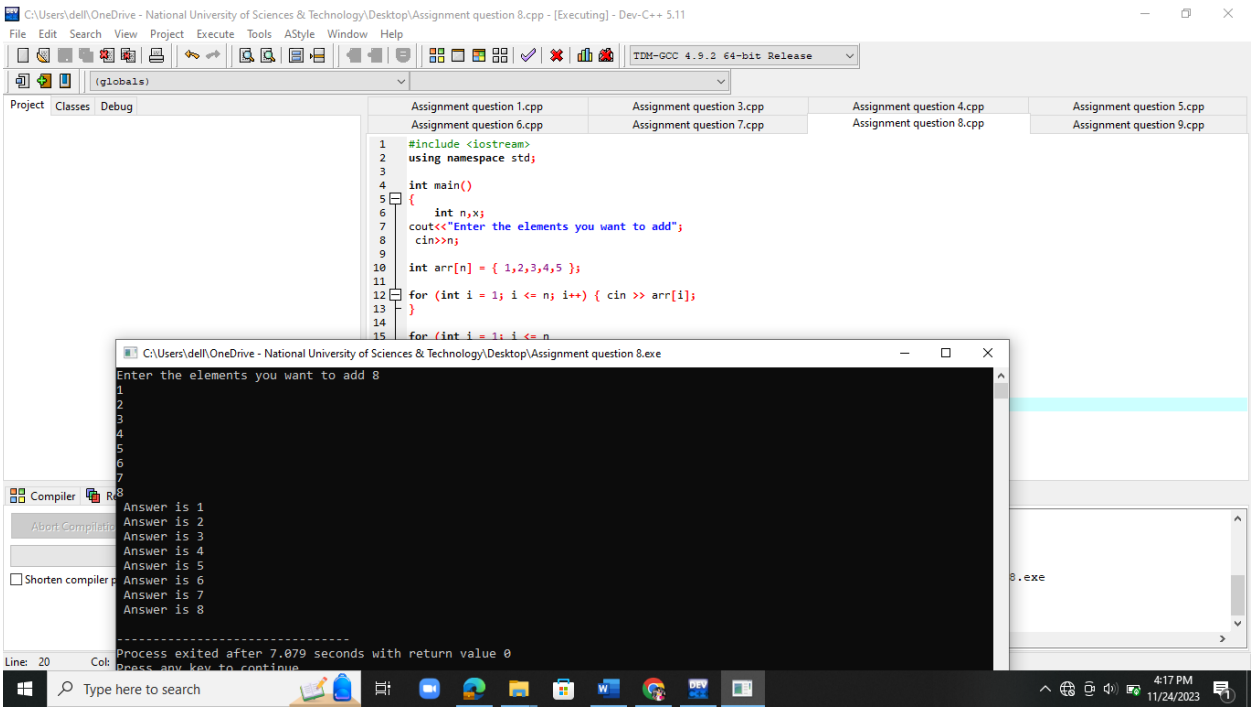
```
#include <iostream>
using namespace std;

int main()
{
        int n,x;
cout<<"Enter the elements you want to add";
 cin>>n;

int arr[n] = { 1,2,3,4,5 };

for (int i = 1; i <= n; i++) { cin >> arr[i];
}

for (int i = 1; i <= n
; i++) { cout<< " Answer is "; cout << arr[i]<<endl;
 }
return 0;
}
```



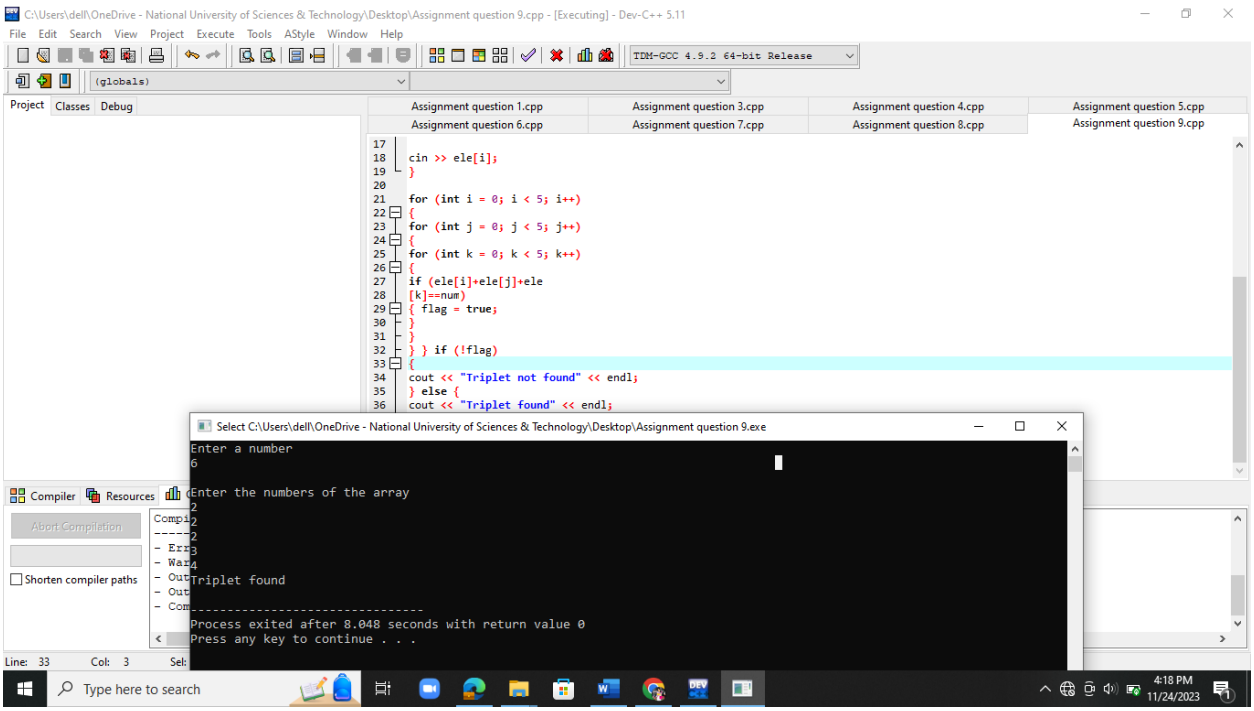
Question 9:

Given an integer array and an integer X. Find if there's a triplet in the array which sums up to the given integer X.

Answer:

```
1.  #include <iostream>
2.  using namespace std;
3.
4.  int main()
5.  {
6.
7.  int ele[5]; int num = 0; bool flag = false;
8.
9.  cout << "Enter a number"<< endl;
10.cin >> num;
11.
12.cout << endl;
13.
14.cout << "Enter the numbers of the array" <<endl;
15.
```

```
16.for (int i = 0; i < 5; i++) {
17.
18.cin >> ele[i];
19.}
20.
21.for (int i = 0; i < 5; i++)
22.{
23.for (int j = 0; j < 5; j++)
24.{
25.for (int k = 0; k < 5; k++)
26.{
27.if (ele[i]+ele[j]+ele
28.[k]==num)
29.{ flag = true;
30.}
31.}
32.} } if (!flag)
33.{
34.cout << "Triplet not found" << endl;
35.} else {
36.cout << "Triplet found" << endl;
37.}
38.return 0;
39.}
```


C:\Users\dell\OneDrive - National University of Sciences & Technology\Desktop\Assignment question 9.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
Assignment question 1.cpp
Assignment question 3.cpp
Assignment question 4.cpp
Assignment question 5.cpp
Assignment question 6.cpp
Assignment question 7.cpp
Assignment question 8.cpp
Assignment question 9.cpp
cin >> ele[i];
}
for (int i = 0; i < 5; i++)
{
for (int j = 0; j < 5; j++)
{
for (int k = 0; k < 5; k++)
{
if (ele[i]+ele[j]+ele
[k]==num)
{ flag = true;
}
}
} } if (!flag)
{
cout << "Triplet not found" << endl;
} else {
cout << "Triplet found" << endl;
Select C:\Users\dell\OneDrive - National University of Sciences & Technology\Desktop\Assignment question 9.exe
Enter a number
6
Enter the numbers of the array
2
2
2
3
4
Triplet found
Process exited after 8.048 seconds with return value 0
Press any key to continue . . .
Compiler Resources
Abort Compilation
Shorten compiler paths
Line: 33 Col: 3
Type here to search
4:18 PM
11/24/2023