*In the Name of Allah, the Most Gracious, the Most Merciful*

# COMSATS UNIVERSITY ISLAMABAD


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**Submitted By:**

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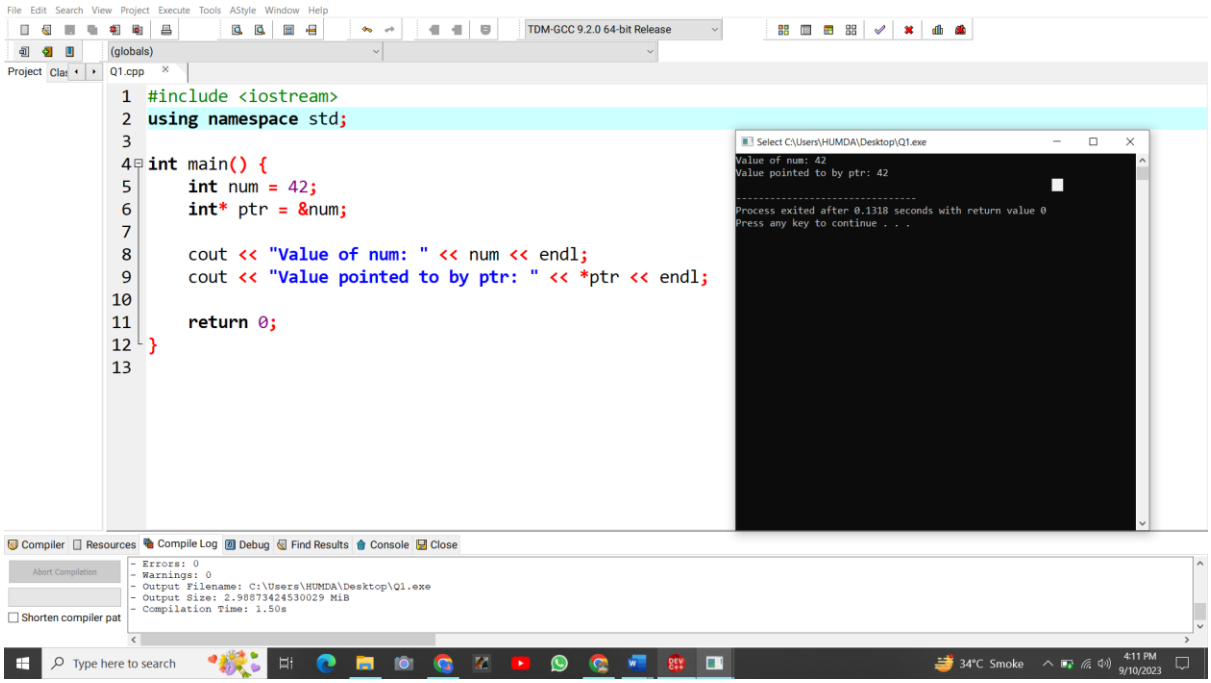
**Submitted To:**

**Sir Dewan Qaseem**

- **Course:** Computer network(lab)
- **Assignment NO:** First
- **Registration No:** SP22-BCS-128

# QUESTION NO:1

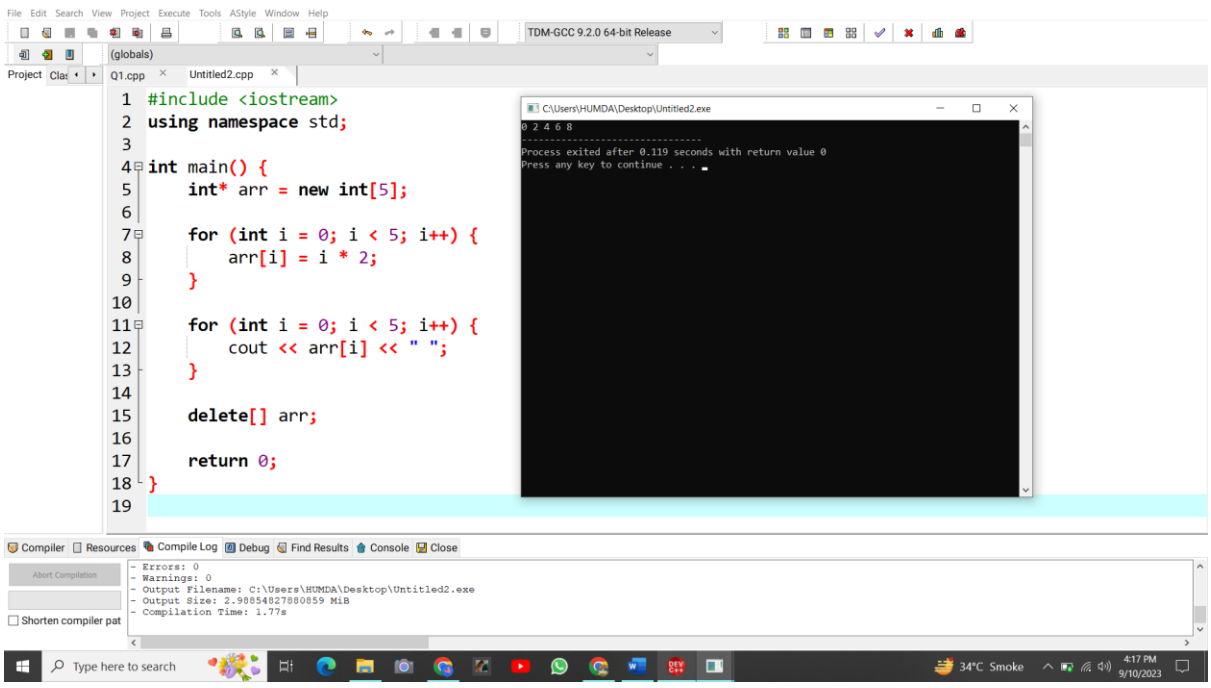



```
#include <iostream>
using namespace std;

int main() {
    int num = 42;
    int* ptr = &num;

    cout << "Value of num: " << num << endl;
    cout << "Value pointed to by ptr: " << *ptr << endl;

    return 0;
}
```

# QUESTION NO:2

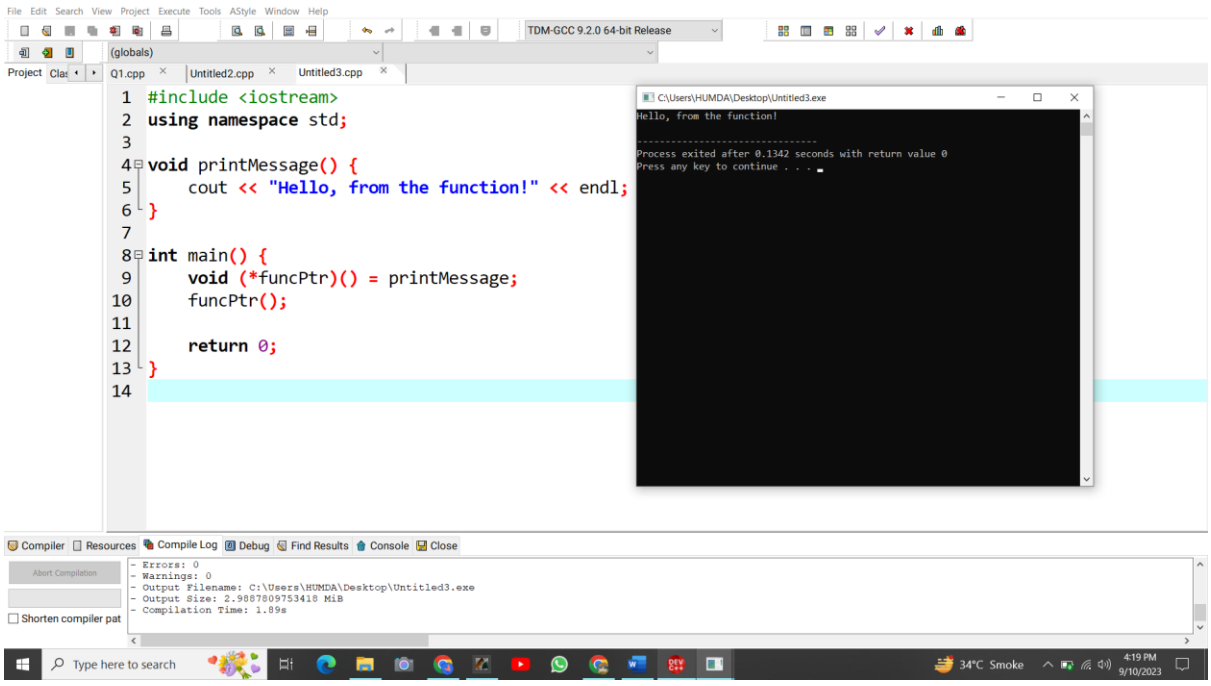
```
#include <iostream>
using namespace std;
```

```
int main() {
    int* arr = new int[5];

    for (int i = 0; i < 5; i++) {
        arr[i] = i * 2;
    }

    for (int i = 0; i < 5; i++) {
        cout << arr[i] << " ";
    }

    delete[] arr;

    return 0;
}
```



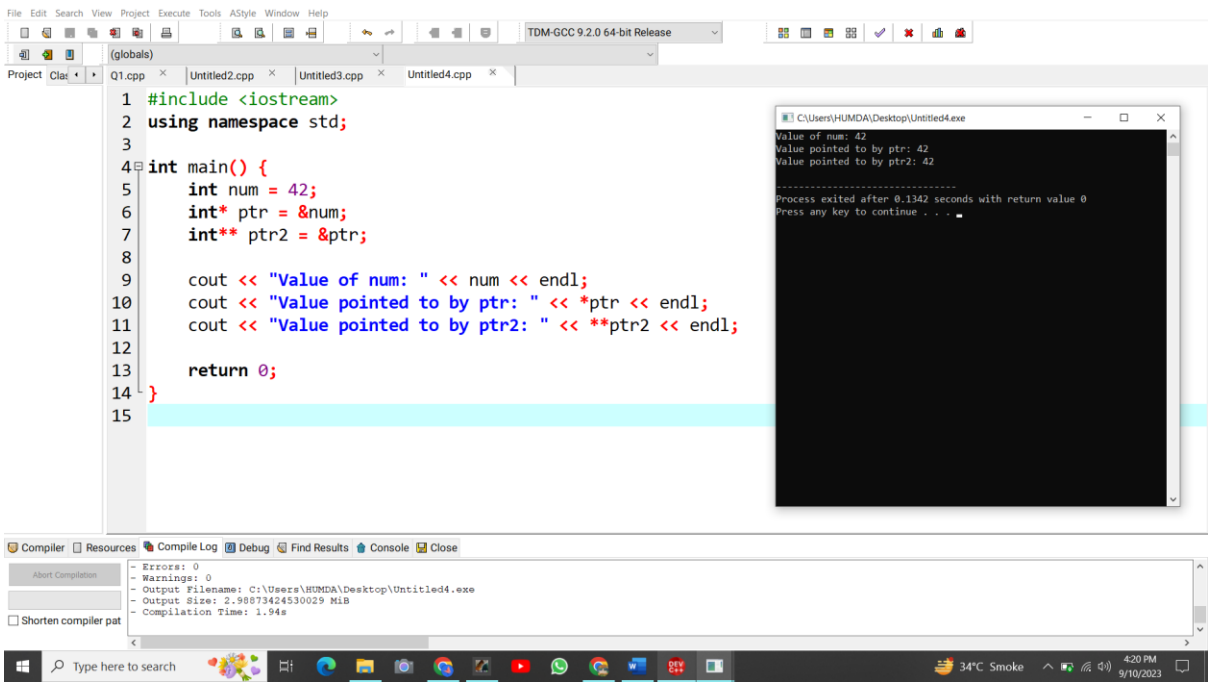
**QUESTION NO:3**

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

void printMessage() {
    cout << "Hello, from the function!" << endl;
}

int main() {
    void (*funcPtr)() = printMessage;
    funcPtr();

    return 0;
}
```



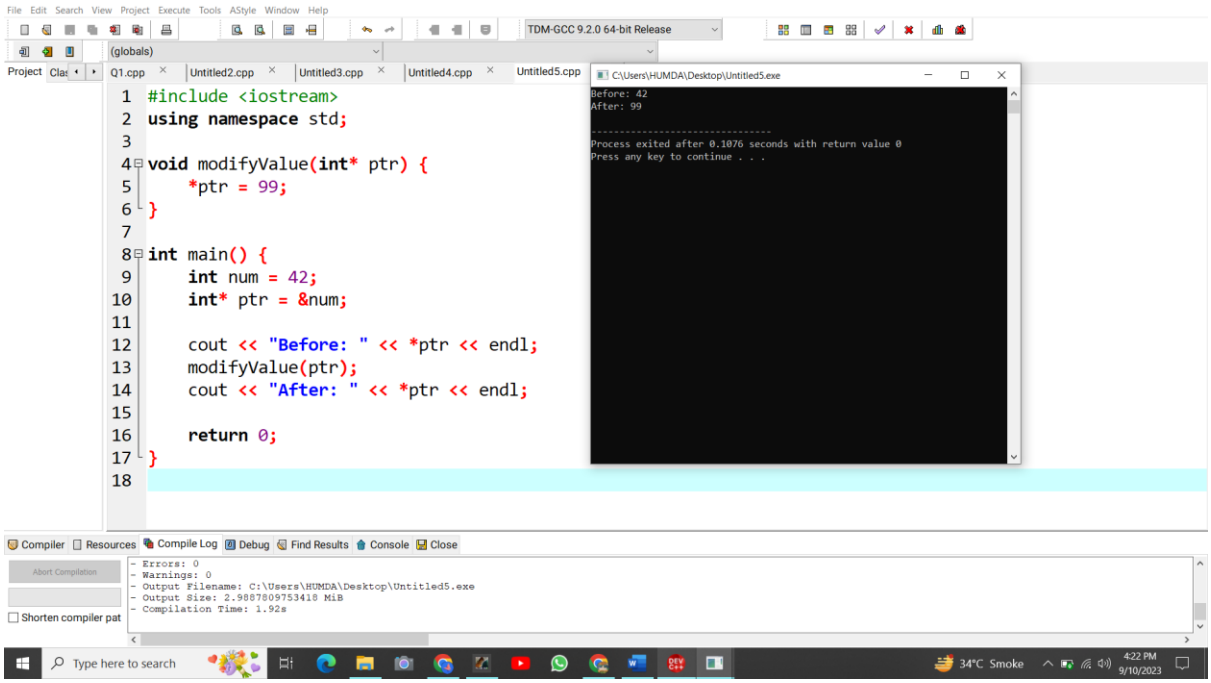
QUESTION NO:4

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

int main() {
    int num = 42;
    int* ptr = &num;
    int** ptr2 = &ptr;

    cout << "Value of num: " << num << endl;
    cout << "Value pointed to by ptr: " << *ptr << endl;
    cout << "Value pointed to by ptr2: " << **ptr2 << endl;

    return 0;
}
```



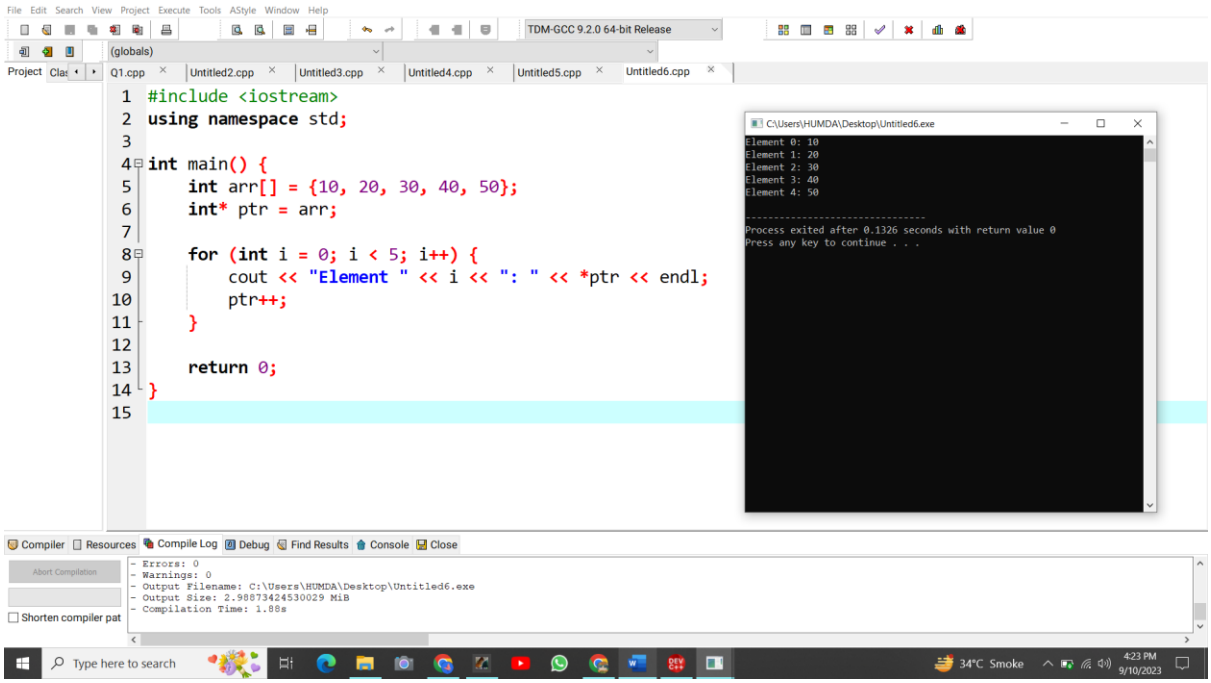
QUESTION NO:5

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

void modifyValue(int* ptr) {
    *ptr = 99;
}

int main() {
    int num = 42;
    int* ptr = &num;

    cout << "Before: " << *ptr << endl;
    modifyValue(ptr);
    cout << "After: " << *ptr << endl;

    return 0;
}
```



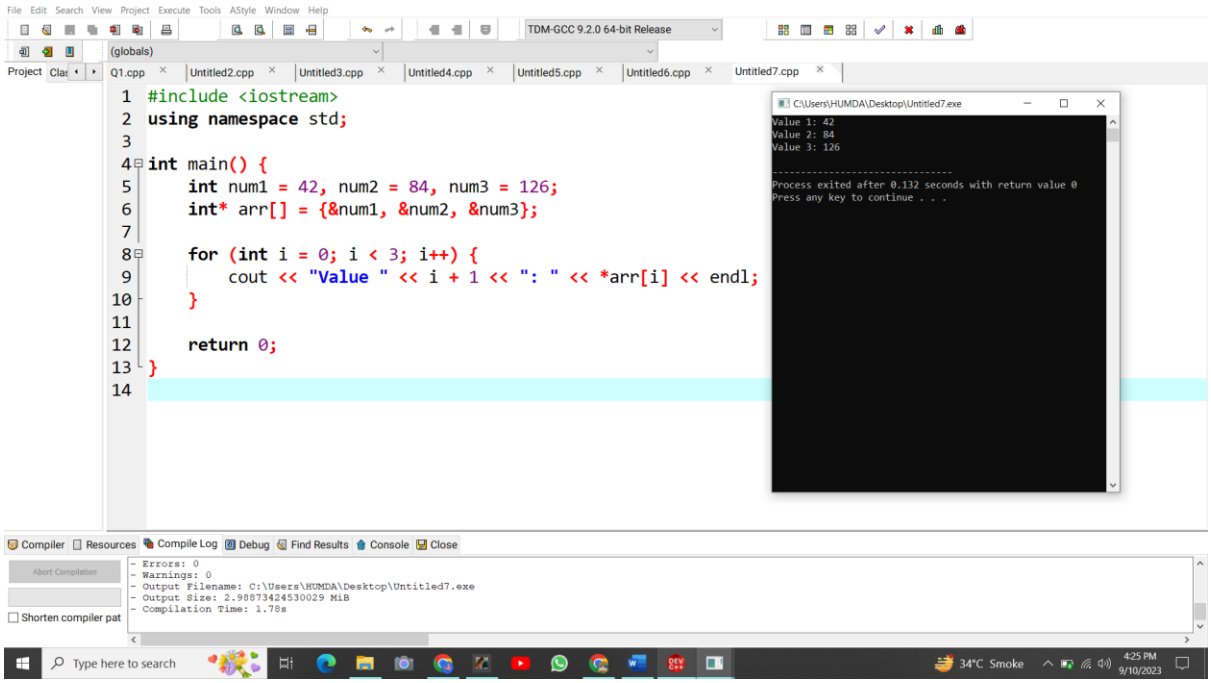

QUESTION NO:6

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

int main() {
    int arr[] = {10, 20, 30, 40, 50};
    int* ptr = arr;

    for (int i = 0; i < 5; i++) {
        cout << "Element " << i << ": " << *ptr << endl;
        ptr++;
    }

    return 0;
}
```

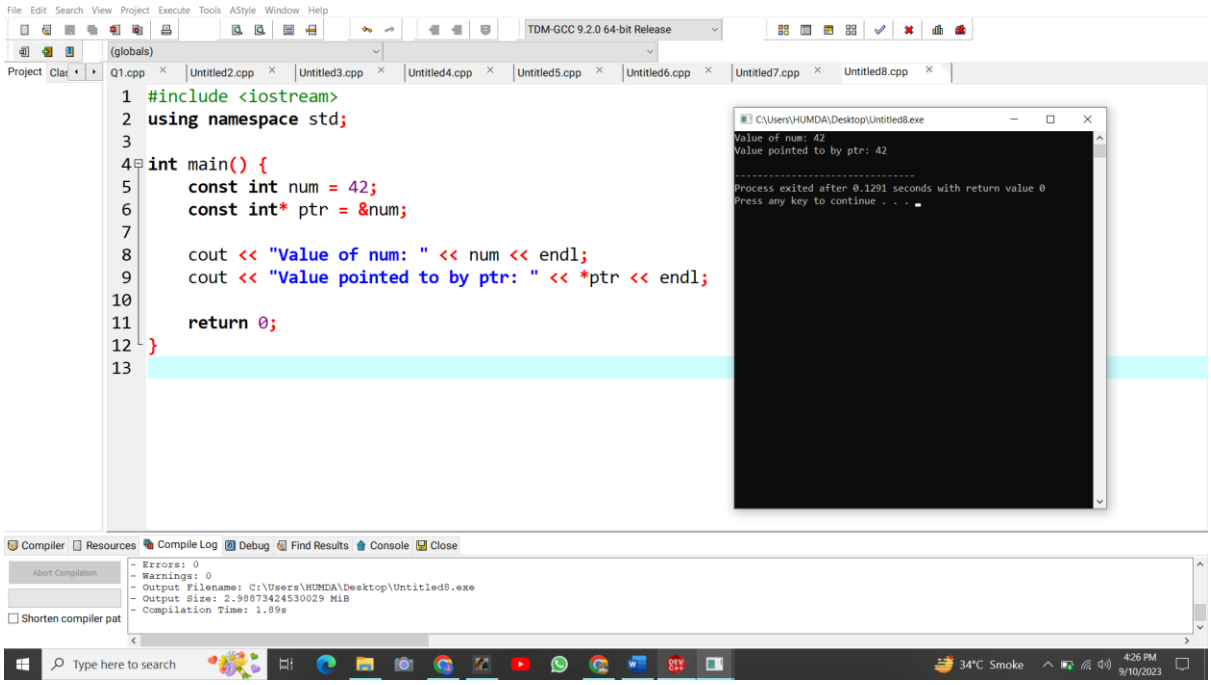



QUESTION NO:7

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

int main() {
    int num1 = 42, num2 = 84, num3 = 126;
    int* arr[] = {&num1, &num2, &num3};

    for (int i = 0; i < 3; i++) {
        cout << "Value " << i + 1 << ": " << *arr[i] << endl;
    }

    return 0;
}
```




QUESTION NO:8

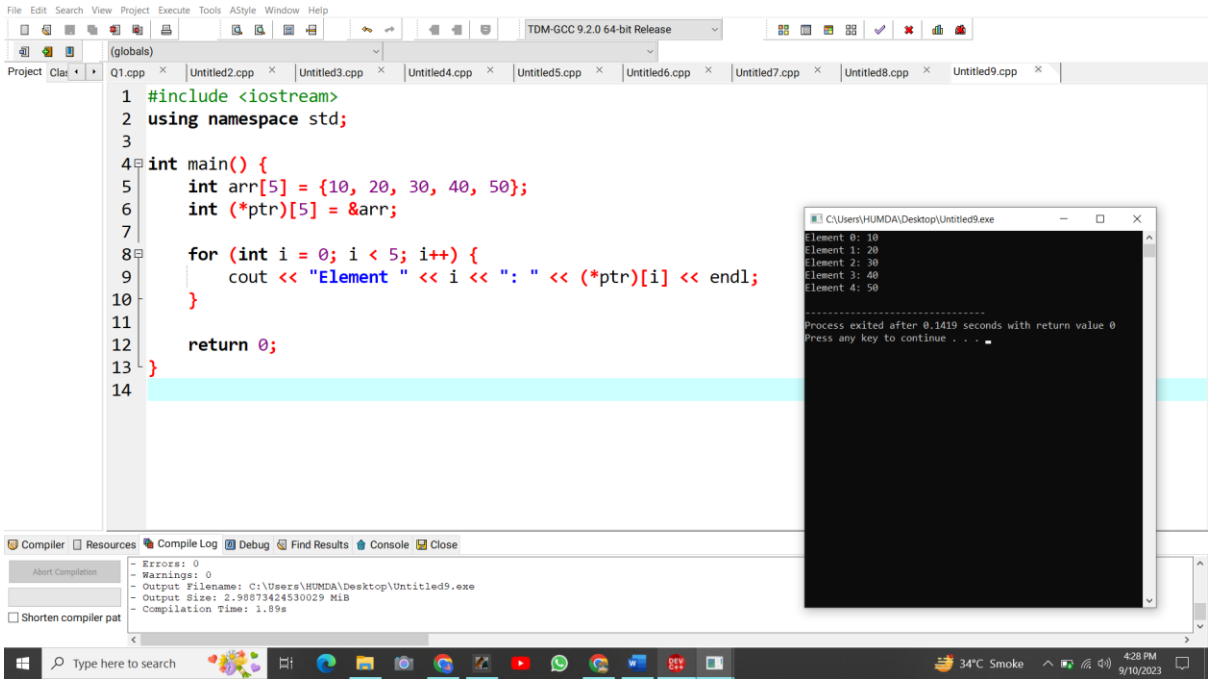



```
#include <iostream>
using namespace std;

int main() {
    const int num = 42;
```

```
    const int* ptr = &num;

    cout << "Value of num: " << num << endl;
    cout << "Value pointed to by ptr: " << *ptr << endl;

    return 0;
}
```

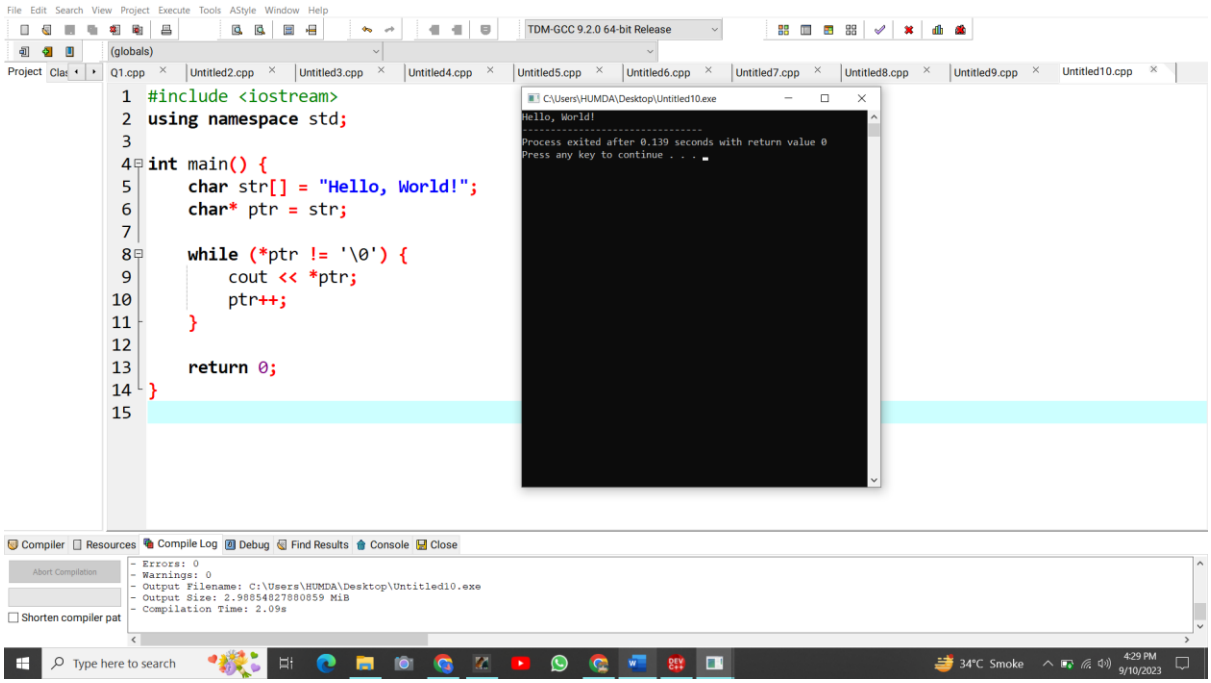
QUESTION NO:9

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

int main() {
    int arr[5] = {10, 20, 30, 40, 50};
    int (*ptr)[5] = &arr;

    for (int i = 0; i < 5; i++) {
        cout << "Element " << i << ": " << (*ptr)[i] << endl;
    }

    return 0;
}
```




QUESTION NO:10

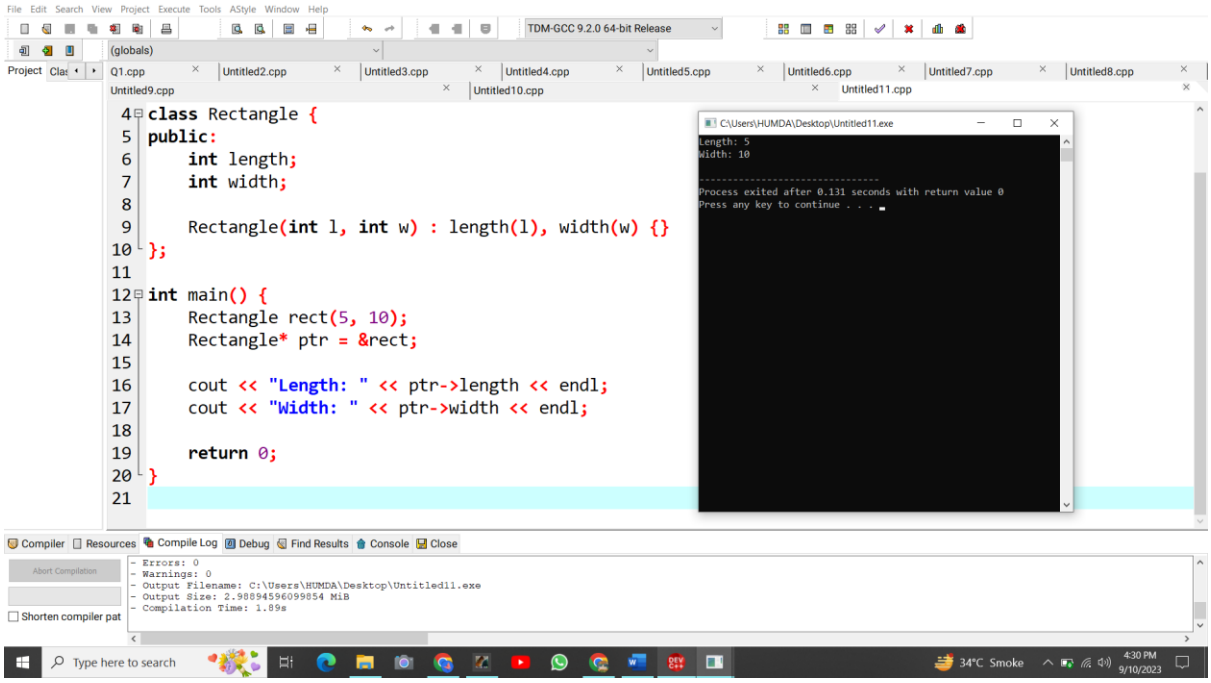
```
#include <iostream>
using namespace std;

int main() {
    char str[] = "Hello, World!";
    char* ptr = str;

    while (*ptr != '\0') {
        cout << *ptr;
        ptr++;
    }

    return 0;
}
```




QUESTION NO:11

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

class Rectangle {
public:
    int length;
    int width;

    Rectangle(int l, int w) : length(l), width(w) {}
};

int main() {
    Rectangle rect(5, 10);
```

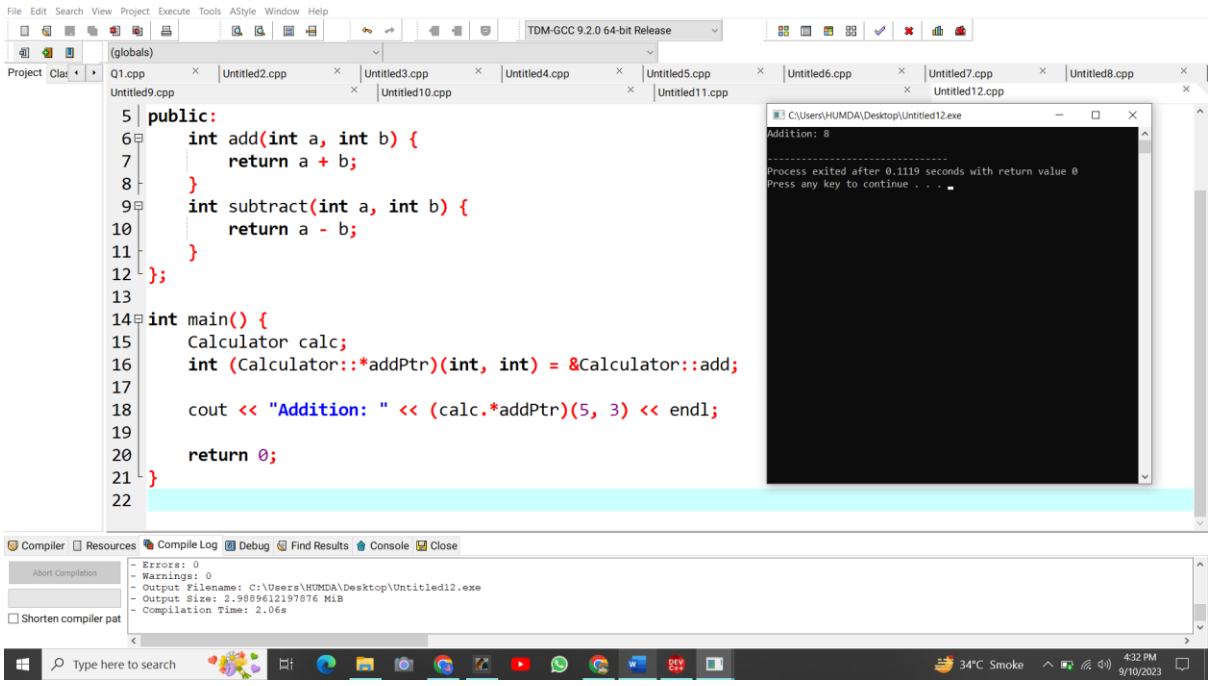
```
    Rectangle* ptr = &rect;

    cout << "Length: " << ptr->length << endl;
    cout << "Width: " << ptr->width << endl;

    return 0;
}
```




QUESTION NO:12

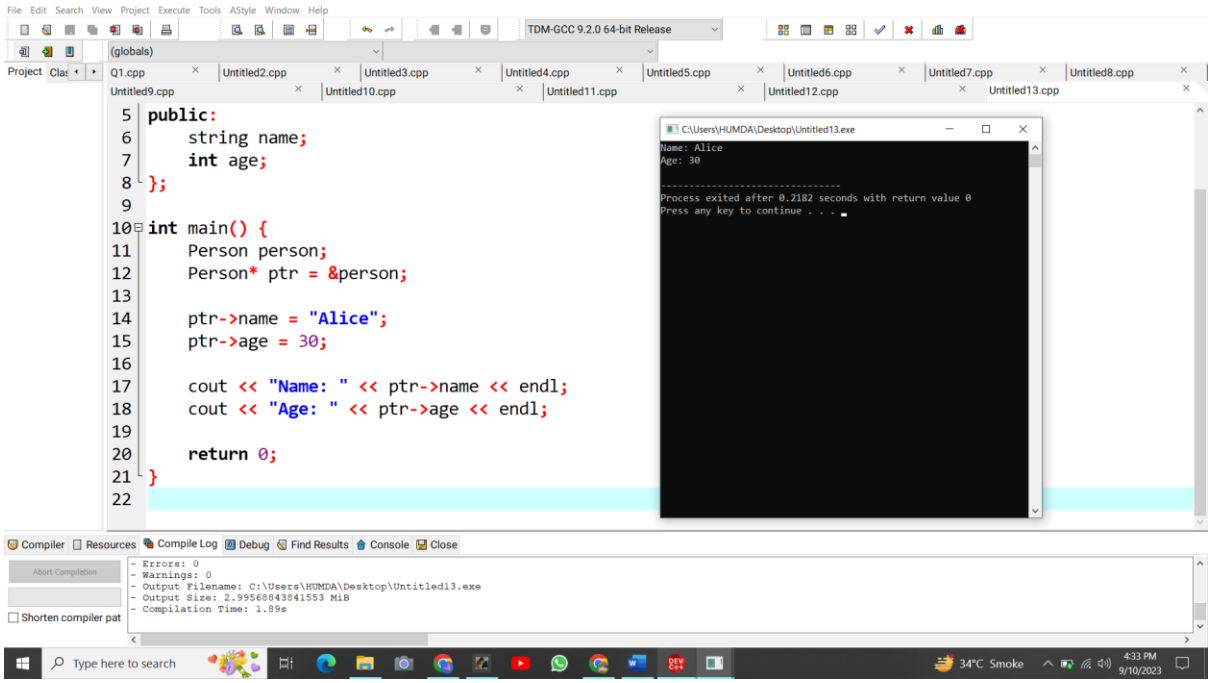
```
#include <iostream>
using namespace std;

class Calculator {
public:
    int add(int a, int b) {
        return a + b;
```

```
    }
    int subtract(int a, int b) {
        return a - b;
    }
};

int main() {
    Calculator calc;
    int (Calculator::*addPtr)(int, int) = &Calculator::add;

    cout << "Addition: " << (calc.*addPtr)(5, 3) << endl;

    return 0;
}
```



QUESTION NO:13

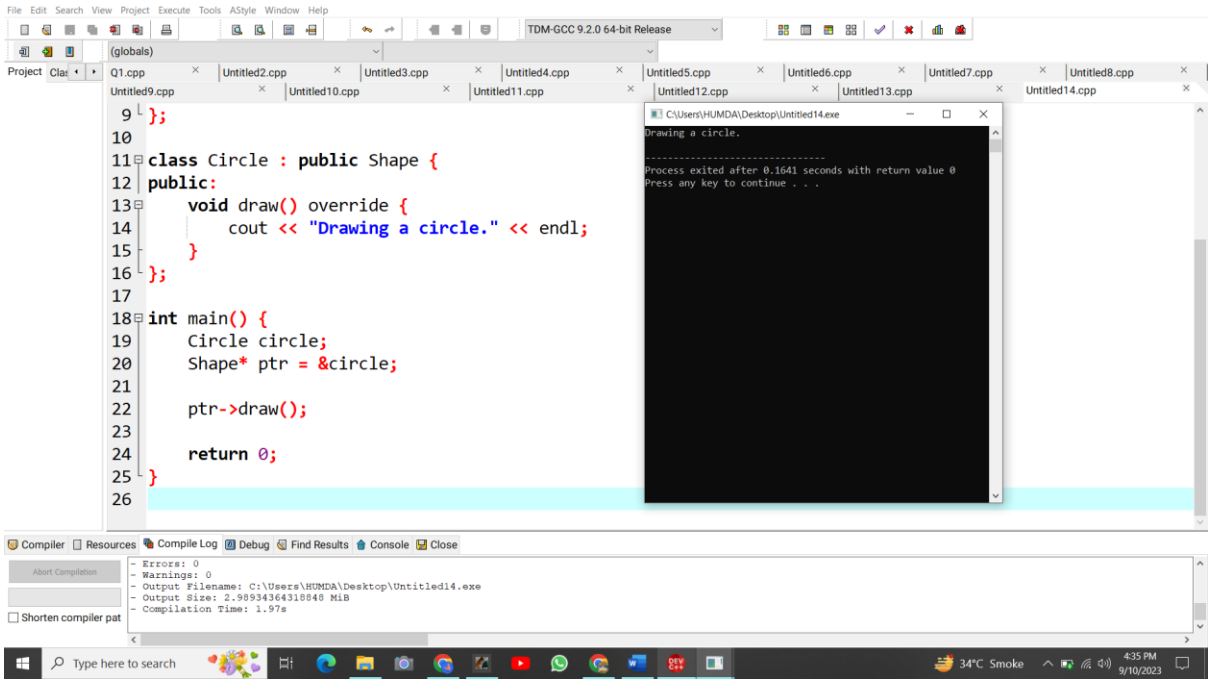
```
#include <iostream>
using namespace std;

class Person {
public:
    string name;
    int age;
};

int main() {
    Person person;
    Person* ptr = &person;

    ptr->name = "Alice";
    ptr->age = 30;

    cout << "Name: " << ptr->name << endl;
    cout << "Age: " << ptr->age << endl;

    return 0;
}
```




QUESTION NO:14

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

class Shape {
public:
    virtual void draw() {
        cout << "Drawing a shape." << endl;
    }
};

class Circle : public Shape {
public:
    void draw() override {
        cout << "Drawing a circle." << endl;
```

```
    }
};

int main() {
    Circle circle;
    Shape* ptr = &circle;

    ptr->draw();

    return 0;
}
```




QUESTION NO:15

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

```
int main() {
    int num = 42;
    double pi = 3.14159;

    void* ptr1 = &num;
    void* ptr2 = &pi;

    cout << "Integer value: " << *(int*)ptr1 << endl;
    cout << "Double value: " << *(double*)ptr2 << endl;

    return 0;
}
```