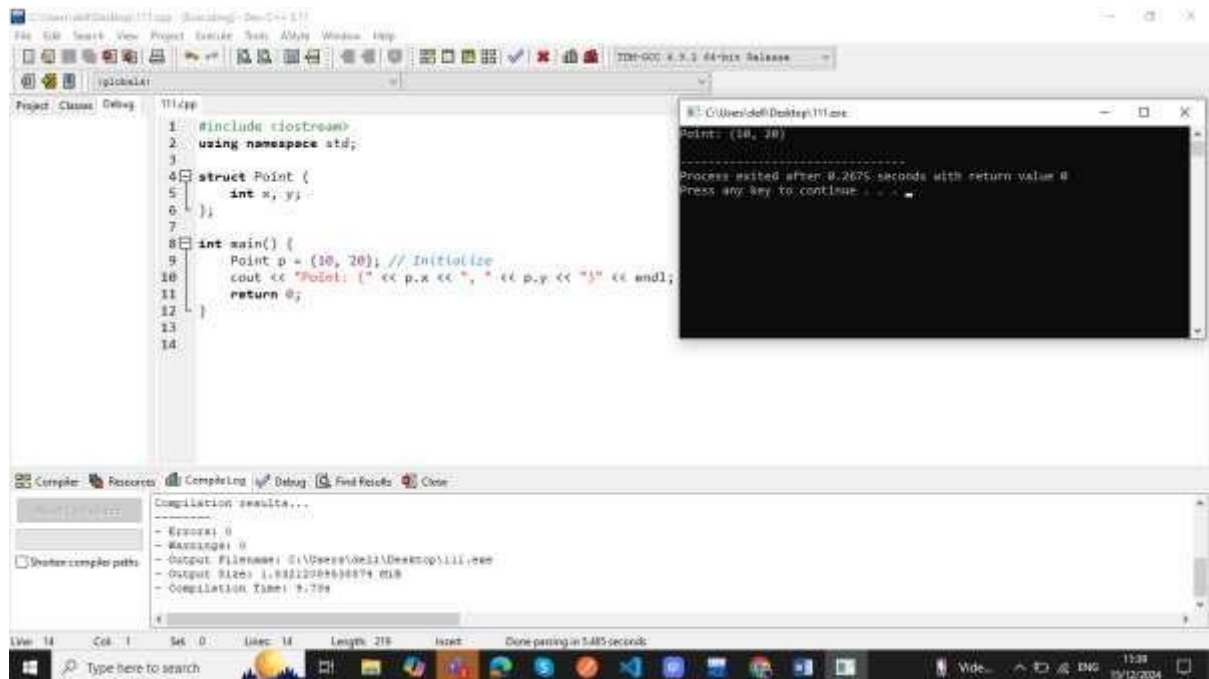


NAME: Eman Khurram

SAP ID: 63725

QUESTIO#1



The screenshot shows a C++ IDE with a project named '111.cpp'. The code defines a struct 'Point' with two integer members, 'x' and 'y'. In the 'main' function, a 'Point' object 'p' is initialized with the values (10, 20). The program then prints the coordinates of 'p' and returns 0. The output window shows the output: 'Point: (10, 20)'. The compilation results window shows no errors and the program was compiled successfully.

```
1 #include <iostream>
2 using namespace std;
3
4 struct Point {
5     int x, y;
6 };
7
8 int main() {
9     Point p = {10, 20}; // Initialize
10    cout << "Point: (" << p.x << ", " << p.y << ")" << endl;
11    return 0;
12 }
13
14
```

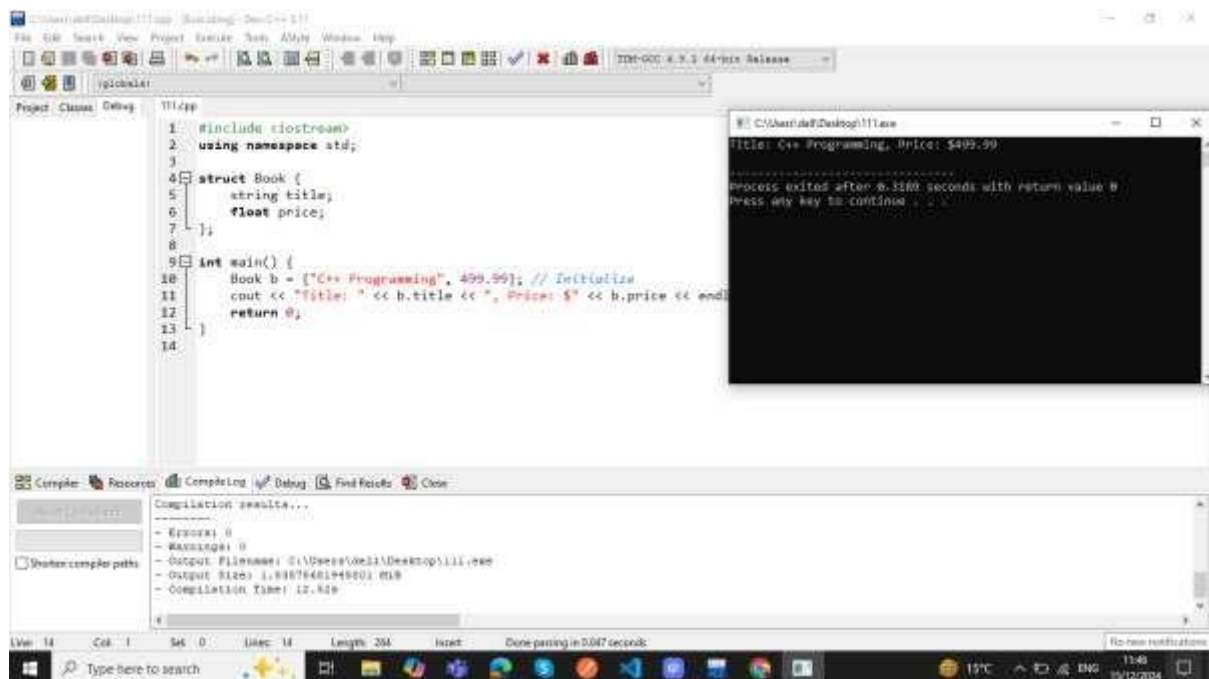
Output: Point: (10, 20)

Process exited after 0.2675 seconds with return value 0
Press any key to continue . . .

Compilation results...

Errors: 0
Warnings: 0
Output File Name: C:\Users\eman\Desktop\111.exe
Output Size: 1,831,208,448 bytes
Compilation Time: 9.79s

QUESTION#2



The screenshot shows a C++ IDE with a project named '111.cpp'. The code defines a struct 'Book' with two members: a string 'title' and a float 'price'. In the 'main' function, a 'Book' object 'b' is initialized with the title 'C++ Programming' and the price 499.99. The program then prints the title and price of 'b' and returns 0. The output window shows the output: 'Title: C++ Programming, Price: \$499.99'. The compilation results window shows no errors and the program was compiled successfully.

```
1 #include <iostream>
2 using namespace std;
3
4 struct Book {
5     string title;
6     float price;
7 };
8
9 int main() {
10    Book b = {"C++ Programming", 499.99}; // Initialize
11    cout << "Title: " << b.title << ", Price: $" << b.price << endl;
12    return 0;
13 }
14
```

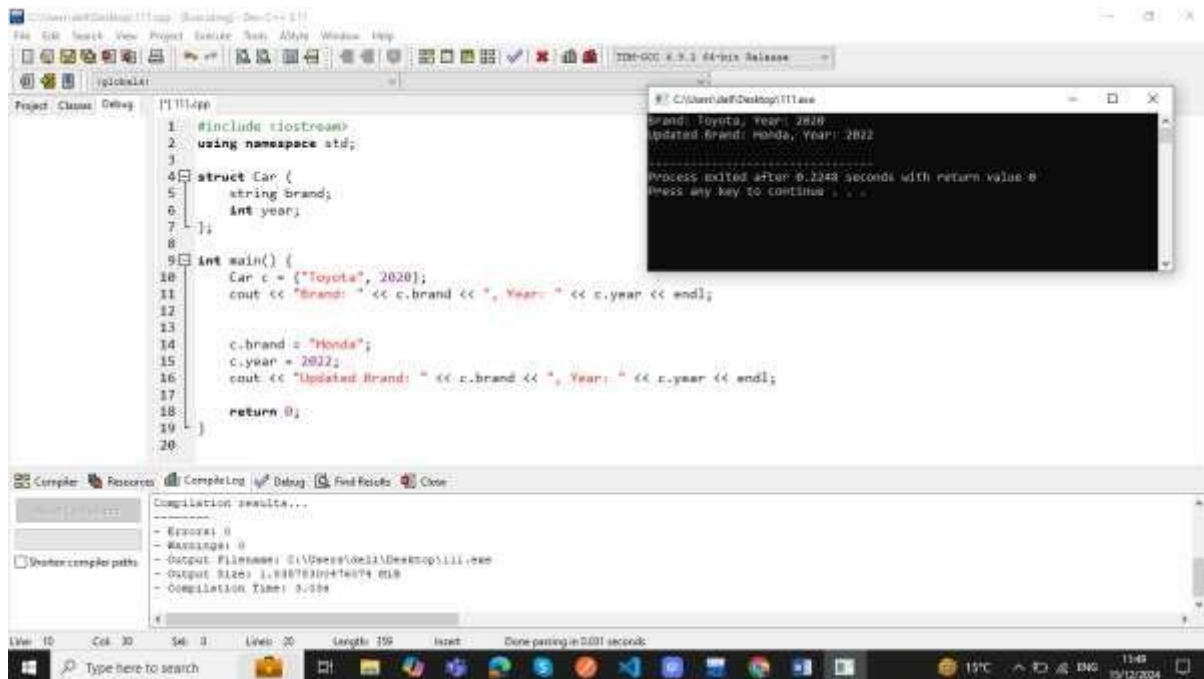
Output: Title: C++ Programming, Price: \$499.99

Process exited after 0.1188 seconds with return value 0
Press any key to continue . . .

Compilation results...

Errors: 0
Warnings: 0
Output File Name: C:\Users\eman\Desktop\111.exe
Output Size: 1,830,768,192 bytes
Compilation Time: 12.82s

QUESTION#3



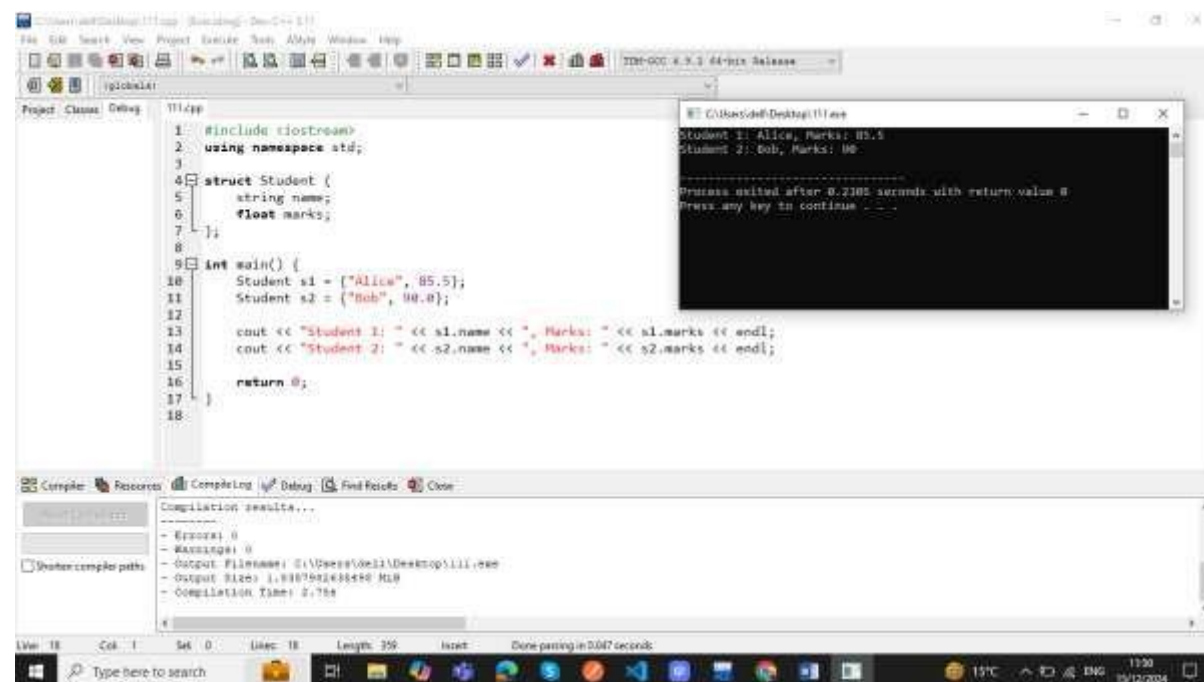
The screenshot shows the Visual Studio IDE with a C++ project named 'T11App'. The code defines a struct 'Car' with 'brand' and 'year' attributes. The main function creates a car object, prints its details, updates the brand to 'Honda', and prints the updated details. The output window shows the program's execution, displaying the initial and updated car information.

```
1: #include <iostream>
2: using namespace std;
3:
4: struct Car {
5:     string brand;
6:     int year;
7: };
8:
9: int main() {
10:     Car c = {"Toyota", 2020};
11:     cout << "Brand: " << c.brand << ", Year: " << c.year << endl;
12:
13:     c.brand = "Honda";
14:     c.year = 2022;
15:     cout << "Updated Brand: " << c.brand << ", Year: " << c.year << endl;
16:
17:     return 0;
18: }
```

Output:

```
Brand: Toyota, Year: 2020
Updated Brand: Honda, Year: 2022
Process exited after 0.2248 seconds with return value 0
Press any key to continue . . .
```

QUESTION#4



The screenshot shows the Visual Studio IDE with a C++ project named 'T11App'. The code defines a struct 'Student' with 'name' and 'marks' attributes. The main function creates two student objects, prints their details, and then updates the marks for both students. The output window shows the program's execution, displaying the initial and updated student information.

```
1: #include <iostream>
2: using namespace std;
3:
4: struct Student {
5:     string name;
6:     float marks;
7: };
8:
9: int main() {
10:     Student s1 = {"Alice", 85.5};
11:     Student s2 = {"Bob", 90.0};
12:
13:     cout << "Student 1: " << s1.name << ", Marks: " << s1.marks << endl;
14:     cout << "Student 2: " << s2.name << ", Marks: " << s2.marks << endl;
15:
16:     return 0;
17: }
```

Output:

```
Student 1: Alice, Marks: 85.5
Student 2: Bob, Marks: 90
Process exited after 0.2385 seconds with return value 0
Press any key to continue . . .
```

QUESTION#5

```

1: #include <iostream>
2: using namespace std;
3:
4: struct Rectangle {
5:     int length, width;
6: };
7:
8: int main() {
9:     Rectangle r = {10, 5}; // Initialize
10:    int area = r.length * r.width;
11:    cout << "Area: " << area << endl;
12:
13:    // Modify dimensions
14:    r.length = 15;
15:    r.width = 7;
16:    cout << "Updated Area: " << r.length * r.width << endl;
17:
18:    return 0;
19: }
20:

```

Output:

```

Area: 50
Updated Area: 225

Process exited after 0.2322 seconds with return value 0
Press any key to continue . . .

```

Compilation results:

```

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\del\Desktop\111.exe
- Output Size: 1,832,091,668,874 MB
- Compilation Time: 2.61s

```

QUESTION#6

```

1: #include <iostream>
2: using namespace std;
3:
4: struct Student {
5:     string name;
6:     float grade;
7: };
8:
9: int main() {
10:    Student students[3] = {"Alice", 88.5, "Bob", 92.0, "Charlie", 79.5};
11:
12:    for (int i = 0; i < 3; ++i) {
13:        cout << "Student " << i + 1 << ": " << students[i].name
14:              << ", Grade: " << students[i].grade << endl;
15:    }
16:
17:    return 0;
18: }
19:

```

Output:

```

Student 1: Alice, Grade: 88.5
Student 2: Bob, Grade: 92
Student 3: Charlie, Grade: 79.5

Process exited after 0.2233 seconds with return value 0
Press any key to continue . . .

```

Compilation results:

```

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\del\Desktop\111.exe
- Output Size: 1,837,002,684,860 MB
- Compilation Time: 2.66s

```

QUESTION#7

The screenshot shows the Visual Studio IDE with a C++ project named '111app'. The code defines a `Person` struct and a `main` function that creates a `Person` object and prints its details. The output window shows the program's execution, displaying the name, age, address, and ZIP code. The compilation results pane shows no errors or warnings.

```
1 string street;  
2 string city;  
3 int zip;  
4 }  
5  
6 struct Person {  
7     string name;  
8     int age;  
9     Address addr;  
10 }  
11  
12 int main() {  
13     Person p = {"John Doe", 38, {"123 Main St", "New York", 10001}};  
14     cout << "Name: " << p.name << ", Age: " << p.age << endl;  
15     cout << "Address: " << p.addr.street << ", " << p.addr.city  
16         << ", ZIP: " << p.addr.zip << endl;  
17  
18     return 0;  
19 }
```

Output:

```
Name: John Doe, Age: 38  
Address: 123 Main St, New York, ZIP: 10001  
Process exited after 0.2298 seconds with return value 0  
Press any key to continue . . .
```

Compilation results:

```
- Errors: 0  
- Warnings: 0  
- Output Filename: C:\Users\user\111\111.exe  
- Output Size: 1,836,712,244,658 MB  
- Compilation Time: 2.67s
```

QUESTION#8

The screenshot shows the Visual Studio IDE with a C++ project named '111app'. The code defines a `Circle` struct and a `calculateArea` function. The `main` function creates a `Circle` object and prints its area. The output window shows the program's execution, displaying the area of the circle. The compilation results pane shows no errors or warnings.

```
1 #include <iostream>  
2 #include <cmath>  
3 using namespace std;  
4  
5 struct Circle {  
6     float radius;  
7 }  
8  
9 float calculateArea(Circle c) {  
10     return M_PI * c.radius * c.radius;  
11 }  
12  
13 int main() {  
14     Circle c = {5.0}; // Initialize  
15     cout << "Area of Circle: " << calculateArea(c) << endl;  
16  
17     return 0;  
18 }
```

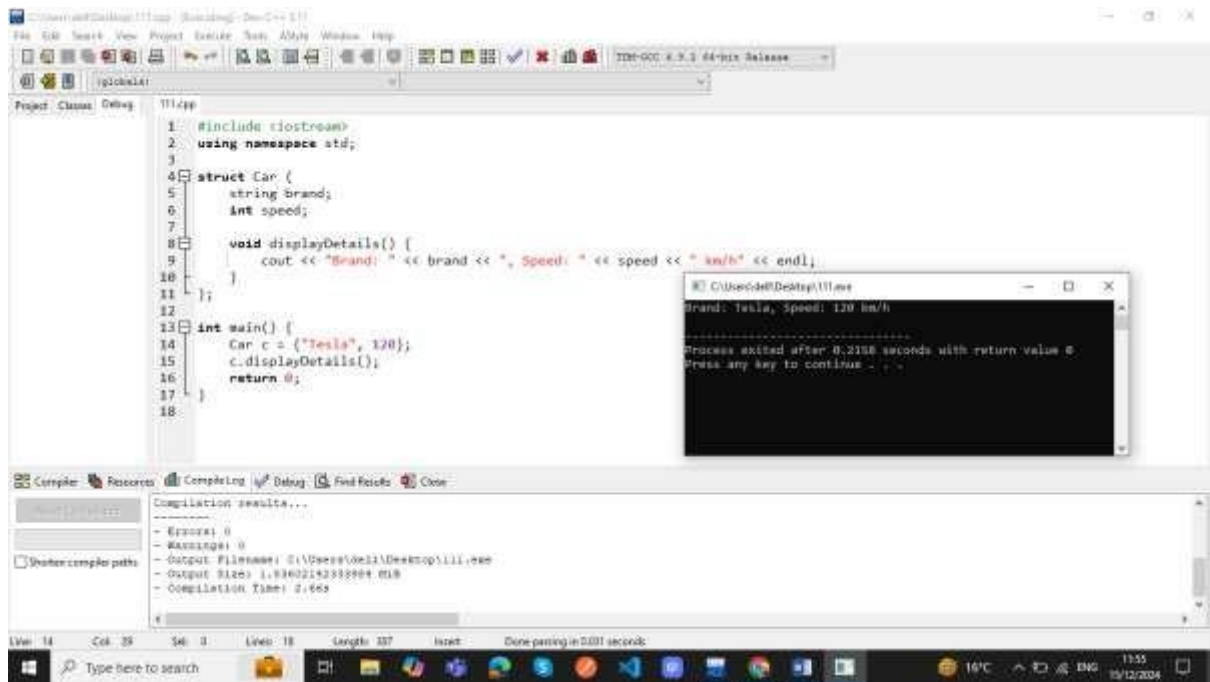
Output:

```
Area of Circle: 78.5398  
Process exited after 0.2281 seconds with return value 0  
Press any key to continue . . .
```

Compilation results:

```
- Errors: 0  
- Warnings: 0  
- Output Filename: C:\Users\user\111\111.exe  
- Output Size: 1,836,712,244,658 MB  
- Compilation Time: 3.31s
```

QUESTION#9



QUESTION#10

