

c++_module_1

EX.NO : 1(A) OVERVIEW & STRUCTURE

Date:

PROGRAM STATEMENT:

Write a c++ program to display "Hello World" in first line and "Welcome to C++ Programming " in next line into the output device?

ALGORITHM:

1. Start the program.
2. Include necessary header files for input/output operations.
3. Define the main function.
4. Print "Hello World" with a newline.
5. Print "Welcome to C++ Programming".
6. End the program.

PROGRAM:

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```

    cout << "Hello World" << endl;

    cout << "Welcome to C++ Programming" << endl;

    return 0;

}

```

Output:

	Input	Expected	Got	
✓	-	Hello World Welcome to C++ Programming	Hello World Welcome to C++ Programming	✓

Passed all tests! ✓

Result:

Thus the display of "Hello World" in first line and "Welcome to C++ Programming " in next line into the output device is executed successfully.

EX.NO-1-B-CLASS-SCOPE-AND-ACCESSING-CLASS-MEMBERS-REFERENCE-VARIABLES

Date:

PROGRAM STATEMENT :

To write a program in C++ to calculate the volume of a cube(declare side as private member) using

class methods.

ALGORITHM :

1. Start the program.
2. Define a Cube class with private side variable and public methods to set the side length and calculate the volume.
3. In main, read the side length, create a Cube object, set the side, calculate the volume, and print it.
4. End the program.

PROGRAM :

```
#include <iostream>

using namespace std;

class Cube {
private:
    float side;

public:
    // Constructor to initialize side
    Cube(float s) : side(s) {}
```

```
// Function to calculate the volume

float calculateVolume() {
    return side * side * side;
}

};

int main() {
    float side;

    cin >> side;

    // Create an object of Cube with the given side length
    Cube cube(side);

    // Display the volume
    cout << "The Volume of Cube is:" << cube.calculateVolume() << endl;

    return 0;
}
```

output:

	Input	Expected	Got	
✓	5	The Volume of Cube is:125	The Volume of Cube is:125	✓
✓	25	The Volume of Cube is:15625	The Volume of Cube is:15625	✓
✓	16	The Volume of Cube is:4096	The Volume of Cube is:4096	✓

Passed all tests! ✓

RESULT :

Thus, the C++ Program to calculate the volume of a cube(declare side as private member) using class methods created successfully.

EX.NO : 1(C) C++ CONSTRUCTORS AND DESTRUCTORS

Date:

PROGRAM STATEMENT :

Write a C++ program to display "C++ constructors" using default constructors.

ALGORITHM:

1. Start the program.
2. Define a class Cont with a default constructor that prints "C++ constructors".

3. In the main function, create an object c of class Cont, which calls the default constructor and

displays the message.

4. End the program.

PROGRAM :

```
#include <iostream>
```

```
using namespace std;
```

```
class Example {
```

```
public:
```

```
    // Default constructor
```

```
    Example() {
```

```
        cout << "C++ constructors" << endl;
```

```
    }
```

```
};
```

```
int main() {
```

```
    // Create an object of Example, which will call the default constructor
```

```
    Example obj;
```

```
    return 0;
```

```
}
```

output:

	Expected	Got	
✓	C++ constructors	C++ constructors	✓

Passed all tests! ✓

Result:

Thus, the C++ program to display "C++ constructors" using a default constructor is created successfully.

EX.NO : 1(D) C++ MEMBER FUNCTION

Date:

PROGRAM STATEMENT :

To write a C++ program to convert Celsius into Fahrenheit using inline function

ALGORITHM :

1. Start the program.
2. Define an inline function `convertToFahrenheit` that takes a float `celsius` as input and returns the Fahrenheit equivalent using the formula $(\text{celsius} * 9.0 / 5.0) + 32$.
3. In the main function, declare a float variable `celsius` to store the temperature.

4. Read the Celsius temperature from the user and store it in celsius.
5. Call the convertToFahrenheit function with celsius as the argument and store the result in the fahrenheit variable.
6. Print the converted temperature in Fahrenheit.
7. End the program.

Program:

```
#include <iostream>
```

```
using namespace std;
```

```
// Inline function to convert Celsius to Fahrenheit
```

```
inline float convertToFahrenheit(float celsius) {
```

```
    return (celsius * 9.0 / 5) + 32;
```

```
}
```

```
int main() {
```

```
    float celsius;
```

```
    // Input the temperature in Celsius
```

```
    cin >> celsius;
```

```
    // Convert and display the temperature in Fahrenheit
```

```
    cout << "temperature in Fahrenheit:" << convertToFahrenheit(celsius)
```



```
<< endl;

    return 0;
}
```

output:

	Input	Expected	Got	
✓	40	temperature in Fahrenheit:104	temperature in Fahrenheit:104	✓
✓	45	temperature in Fahrenheit:113	temperature in Fahrenheit:113	✓
✓	20	temperature in Fahrenheit:68	temperature in Fahrenheit:68	✓

Passed all tests! ✓

Result:

Thus, the C++ program to convert Celsius into Fahrenheit using inline function is implemented successfully.