

COURSE INTRODUCTION

COURSE OBJECTIVES



- **Use** different types of advanced data structure
- **Create** program that can store data in external file rather than the memory
- **Design** program with sorting methods
- **Apply** C++ programming
- Introduction to basic **OOP** (object-oriented programming)

LEARNING PLANNING

1. Introduction to algorithm
2. Basic data types and statements
3. Condition
4. Loop
5. Array
6. Sub-programs (functions)
7. Structure

semester 1

C

8. *Recursive*

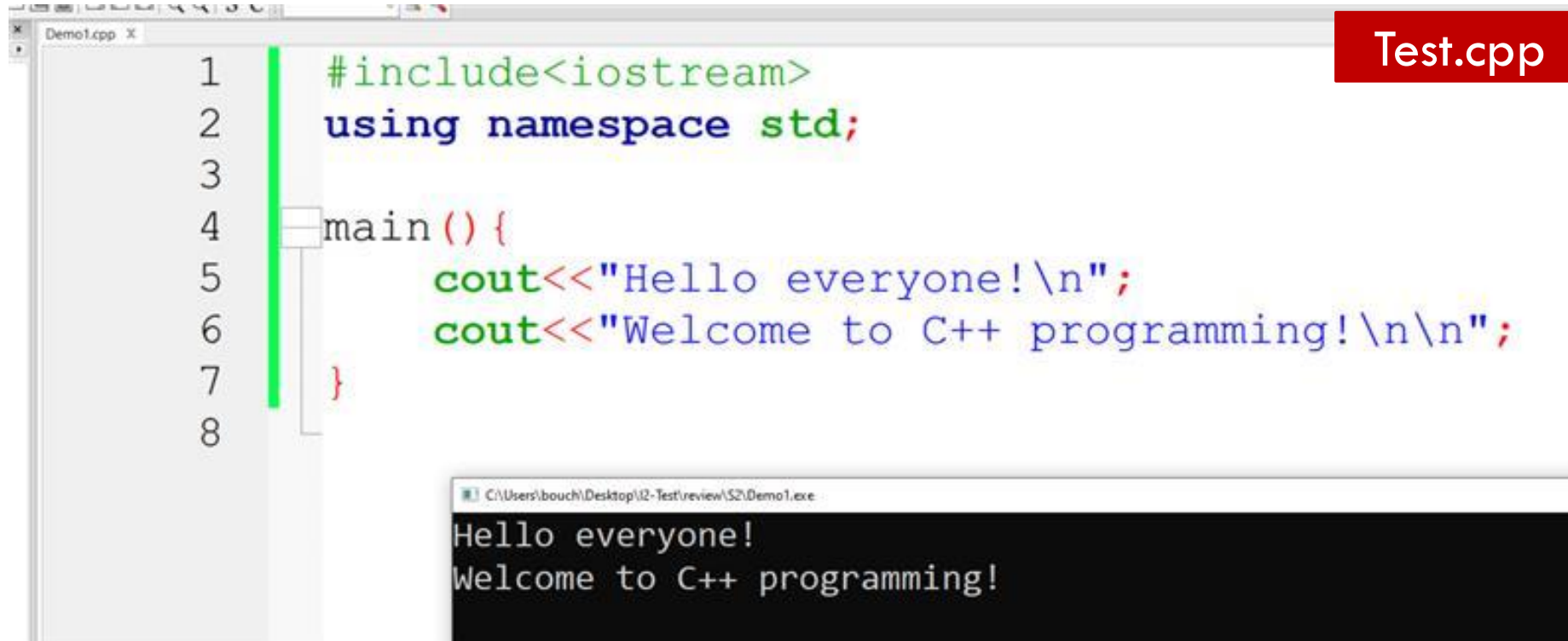
9. File IO
10. Pointers
11. Linked Lists
12. Stacks and Queues
13. Sorting algorithms
14. Tree
15. Basic OOP



semester 2

C++

STRUCTURE OF C++ PROGRAMMING



The image shows a code editor window titled 'Demo1.cpp' with a line number margin on the left. The code is as follows:

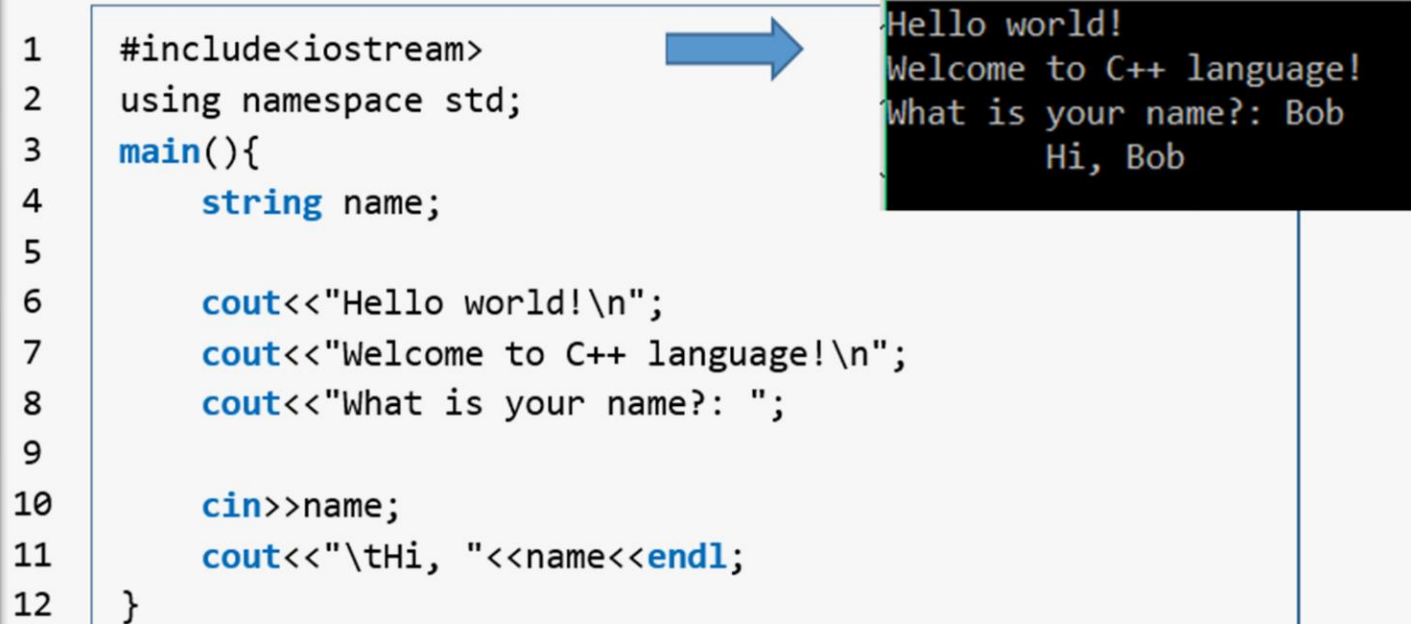
```
1  #include<iostream>
2  using namespace std;
3
4  main() {
5      cout<<"Hello everyone!\n";
6      cout<<"Welcome to C++ programming!\n\n";
7  }
8
```

A red label 'Test.cpp' is positioned to the right of the code editor. Below the code editor is a black console window titled 'C:\Users\bouch\Desktop\I2-Test\review\S2\Demo1.exe' showing the program's output:

```
Hello everyone!
Welcome to C++ programming!
```

1st program in C++ programming

EXAMPLE IN C++ PROGRAMMING



The diagram illustrates the execution of a C++ program. On the left, a code editor shows the source code with line numbers 1 through 12. A blue arrow points from the code to a black terminal window on the right, which displays the program's output. The code includes headers, uses the std namespace, and defines a main function that declares a string variable, prints three lines of text, takes user input, and prints a personalized greeting.

```
1  #include<iostream>
2  using namespace std;
3  main(){
4      string name;
5
6      cout<<"Hello world!\n";
7      cout<<"Welcome to C++ language!\n";
8      cout<<"What is your name?: ";
9
10     cin>>name;
11     cout<<"\tHi, "<<name<<endl;
12 }
```

Hello world!
Welcome to C++ language!
What is your name?: Bob
Hi, Bob

Figure 1: A basic C++ program overview

Using **cin** and **cout** to get input and display