

## Lab 7

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# Comp 11 - Summer Session — Interview Question

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## 7.1 Description

It was the Winter of 2007 and I had my first programming interview over the phone. The phone rang, and questions related to pointers ensued! One of the following was how to swap a data structure.

**Our objectives are the following:**

- You will write a generic function that will swap the values stored in two variables passed in as parameters.
- Start by seeing if you can swap two integers, that is, after the function call, the values will be appropriately swapped.
- The function should also be templated, that way we can use it with any data type.
- Note: You may not use any global variables.

## 7.2 Files

You may use the following code to help get you started.

```
1 // Answer the following here:
2 //
3 // (1) Why do we want to use pointers in our code?
4 //
5 //
6 //
7
8 #include <iostream>
9
10 // Your swap function here
```

```

11
12 //?? What was the template syntax again?
13 void swap( ??????? ) {
14
15     ?????????
16
17 }
18
19
20 int main() {
21
22     int a = 7;
23     int b = 5;
24
25     std::cout << "a before: " << a << std::endl;
26     std::cout << "b before: " << b << std::endl;
27
28     swap<????>(a, b);
29
30     std::cout << "a after: " << a << std::endl;
31     std::cout << "b after: " << b << std::endl;
32
33     return 0;
34 }

```

Listing 7.1: Starter Code

## 7.3 Refresher

Refer to some of the examples in the slides from the lecture on pointers lectures. It will be useful to draw pictures before coding in this lab.

## 7.4 Submission

```

1 provide compile lab7 lab7.cpp README

```

Listing 7.2: Submit Assignment

## 7.5 Going Further

Did you enjoy this lab? Want to try out some additional commands to go further?

- Build a struct and try passing it around!