

C++ Advanced Exam – 5 September 2020

Write C++ code for solving the tasks on the following pages.

Submit your solutions here: <https://judge.softuni.bg/Contests/2555/CPlusPlus-Advanced-Exam-5-September-2020>

Any code files that are part of the task are provided under the folder Skeleton.

Please follow the exact instructions on uploading the solutions for each task.

Task 3 - My Tropico

You are playing a game named Tropico. In this game you have the ability to create new buildings for future strategic development of the game.

In the `main()` function there a single integer value – `n` is read

On the next `n` lines you will read the following **commands**:

- **"build" command** (followed by a building **type (Palace or House)** - string, **width** - int and **length** - int) – creates a new building
- **"duplicate" command** (followed by two integers - **idx1** and **idx2**) – duplicates a building from one position to another
 - If same indexes – **print "Invalid operation"**, followed by a **newline**
- **"replace" command** (followed by two integers - **idx1** and **idx2**) – switches places of building at position **idx1** and building position **idx2**
 - If same or invalid indexes – **print "Invalid operation"**, followed by a **newline**
- **"demolish" command** (followed by one integer for - **idx1**) – destroys a building **at certain position**

Write a program which implements the missing functionalities for `Palace.cpp`, `House.cpp` and `Main.cpp`

- At the end of the **constructor** you should call `print()` followed by printing `" | Constructor is called"` and a **newline**
- At the end of the **destructor** you should call `print()` followed by printing `" | Destructor is called"` and a **newline**

Your task is to study the code and write the functionality so that the code accomplishes the task described. You should implement for **main.cpp**, **House.cpp**, and **Palace.cpp** (and any other additional files if you think it is needed).

You should submit a single **.zip** file for this task, containing **ONLY** the files you created. The Judge system has a copy of the other files and will compile them, along with your file, in the same directory.

Restrictions

You should only submit files with **.h** and **.cpp** extensions (in a **.zip** archive). You should **Not** have folders in your **.zip** submission archive.

Examples

Input	Output
<pre> 6 build Palace 64 64 build House 20 30 build House 45 25 replace 0 2 duplicate 1 0 demolish 2 </pre>	<pre> Building type: Palace, measurements: 64 x 64 Constructor is called Building type: House, measurements: 20 x 30 Constructor is called Building type: House, measurements: 45 x 25 Constructor is called Building type: House, measurements: 20 x 30 Destructor is called Building type: House, measurements: 45 x 25 Destructor is called Building type: Palace, measurements: 64 x 64 Destructor is called </pre>
<pre> 4 build Palace 150 150 duplicate 0 0 demolish 0 build House 30 30 </pre>	<pre> Building type: Palace, measurements: 150 x 150 Constructor is called Invalid operation Building type: House, measurements: 30 x 30 Constructor is called Building type: Palace, measurements: 150 x 150 Destructor is called Building type: House, measurements: 30 x 30 Destructor is called </pre>