

## DOCUMENTATION FOR OBJECT ORIENTED PROGRAMMING PROJECT

### PROJECT 10: SHIPS AND CRANES

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Google Drive Link:

<https://drive.google.com/drive/folders/1-qoHF86Gt-WRqWRArB5rRoajxURKOSzQ?usp=sharing>

GitHub:

[https://github.com/Shirish-Kumaravel/ShipAndCranes\\_Shirish.git](https://github.com/Shirish-Kumaravel/ShipAndCranes_Shirish.git)

### Analyzing OOP Principles

#### **1. Depend on Abstraction, do not depend on concrete classes**

In the code, Normal container is implemented in the container class itself. We should have made the Container class abstract and made a new subclass Normal Container which inherits from the abstract container class. This would make the code much cleaner and reduced the chances of it being buggy.

#### **2. Program to an interface not implementation**

We have not used interfaces in our program, using interfaces would have made it less time consuming and cleaner. That way, we would have known exactly what to put in our program.

#### **3. Encapsulate what varies**

We could have made our code more modular in some areas, an example being the inside the stack function in the Crane class, for any small modification, we need to change a lot of code because of that one small change instead of just adding/modifying a function and using all the other functions to complement it.

#### **4. Strive for loose coupling**

Even though the container frame classes and container classes interact with each other, they use separate set of variables and attributes, thus the functionality of one does not completely depend on the functionality of the other

#### **Observer Pattern:**

We could have implemented observer pattern to implement a change in one of the container objects which would notify Ship objects and the other container objects around it.

