Important notes from the first Client meeting

First goal – when we start the simulator there will be the user interface that we will provide to the user that says:

a) What type of operation do you want to have in the simulator (**Loading** or **Unloading**)?
b) How many relevant objects do you want to have inside the port
(**containers**, **ships**, **cranes**, **trucks**…)

When all the required information is filled in, the user can press the Start button. The simulator will automatically implement everything that was set by the user.

The second goal – make 3D models so that they move automatically according to real-life operations.

The third goal – while the simulator is running, we should collect operational data regarding what is happening when the simulator is running.
For example:

I. How long has the ship been docked in the quay until it was fully loaded or completely emptied?
II. The number of containers moved by a crane each hour
III. Average waiting time for containers in the storage yard.

In this project, the containers will be delivered by trucks (**external trucks**).
The crane will lift the container from those trucks and move them to a storage yard.
When the ship has arrived, the second crane will take containers from the storage yard and load them on **internal trucks** (trucks that work are only working within ship-storage distance).
Internal trucks will deliver the container to the third crane which will lift the container and put it on a ship (The operation described is **LOADING or Delivery operation**, the reverse of this operation will be **UNLOADING or Retrieval operation**).

Meaning of separate User Interface – after the program has been made within Unity it should then be exported to a .exe file from which after we run it the UI should be loaded.

There should be a **Destinated parking spot for the trucks.**

A ship can be **loaded and unloaded from multiple blocks**.

Limitations:

I. One crane should operate on one ship (at most 2 cranes for 1 ship).
II. One block of containers must have exactly 2 cranes.
III. The number of container blocks should be 8 at most.
IV. There shouldn't be just one big block of containers but rather several smaller ones.
V. Containers should be stacked up to 4 levels, and there should be up to 4 containers per row.
VI. A crane can only handle one container at a time. If for example there are 2 cranes and 20 trucks, there should be some sort of a queue for those trucks.
VII. Only one ship can be docked at a time.

Bonus points:

1. Adjust the precision and physics of the project if there is extra time.
2. The weight distribution of the ship when loading and unloading containers would be a very good implementation.