Homework 1 – Object Storage
By Nathan and Andrew

1. **Checkpoint 1 –**
   a. Created a new stack item called 'st' which pointed to location1. Then we added the initial StackSize (10), initial top (-1), and initial item (empty array of size 10) values to the heap at location1. The item variable was created as a pointer to location2 in the heap. Location2 was initialized to a size of 10 Objects. Since they are objects, they will all be pointing to a different location on the heap (location3-location12), which will all be empty.

2. **Checkpoint 2 –**
   a. The only difference between checkpoint 1 and 2 is that 5 values were pushed to the stack. This manipulated the top and item variables in location1. The top variable became 4. The item variable didn't change, but the 5 values that were added changed the values in the heap for their respective locations (location3-location7).

3. **Checkpoint 3 –**
   a. The only difference b/w checkpoint 2 and 3 is that the top 2 items were removed from the stack. This manipulated the top and item variables in location1. Top became 2 and location 6 and 7 were 'nulled' out or emptied.

4. **Object Diagram**
   a. There was only 1 object ever created throughout the program. That object was named 'st' and was an instance of the stack class. The stack class has attributes StackSize, top, and a private attribute called item. The item attribute was an array of objects. In an object diagram an array of objects is represented by having a link between the array items and the object holding the array. In our case, the 'st' stack instance held an array of objects, these objects were strings. Their indices are represented by the number following directly after their name.