**Assignment 4**

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Consider a system with one server and one client. Both client and server are on the local host.

The server selects its port randomly from the range of ports [3000 – 3050]. The client does not the port number of the server.

Your client must be smart enough to find the server open port and connect to the server. Note that the client may make several trials before it succeeds to connect to the server.

Once the connection is established, the client sends the following message to the server “Hello Server. I was able to connect to your open port”.

The server must respond by the message “Good luck client. I am closing the port”.

Then the server must close the open port and all its input output ports.

1. Your server must print on the screen
   1. the randomly selected port
   2. The received message from the client “Hello Server. I was able to connect to your open port”.
   3. The message sent to the client “Good luck client. I am closing the port”.
   4. “I am closing all open sockets and input and output ports”. This statement must be printed before closing all open sockets and ports
2. Your client must print the following:
   1. The server port number is “XXX” (XXX is the port number found by the client) the number of trials used by the client to scan and detect the port number of the server.
   2. The message sent by the client to the server “Hello Server. I was able to connect to your open port”.
   3. The message received from the server “Good luck client. I am closing the port”.
3. The client must exit by causing an exception error because the server has closed the port.