

# Pre-assignment - TDA596 Distributed systems

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## I Python

The source code for the exercises is located in the root folder. There are three files : `string.py`, `list1.py` and `wordcount.py`.

## II Seattle framework

1. Seattle is a platform for networking and distributed systems research. It's free, community-driven, and offers a large deployment of computers spread across the world.
2. A vessel is a virtual machine in the Seattle framework. It is a controlled environment for running code (implemented using the `repy` sandbox).
3. The programming language used is `Repy`. `Repy` is a Python-based sandbox which restricts API calls and limits the consumption of resources such as CPU, memory, storage space, and network bandwidth. `Repy` has a limited API for accessing system resources. This is in order to prevent a malicious user using a bug in the Python libraries to escape from the sandbox.

4. To run locally a program, you can type :

```
python <path to repy.py> <path to restrictions file> <path to source file>
```

5. To run program remotely on the vessels or VMs, you need:
  - (a) To get some vessels on which you want to run your program. This can be done on the `ClearingHouse` page once you are registered. You will also get some keys (public and private) that are used to connect to vessels.
  - (b) To run the Seattle Shell (`seash`) `python seash.py` . This will run an interactive shell.
  - (c) To load your account keys `!> loadkeys yourusername` . You have to put the keys files (`yourusername.publickey`, `yourusername.privatekey`) in the same directory as the file `seash.py` .

- (d) To connect by typing `!> as yourusername` in seash. After this step, you can see the vessels you control: `yourusername@ !> browse`.

After these steps, you can run a program on a specific or many vessels. For example, the following command will run the helloworld file on the vessel number 1.  
`yourusername@ !> on %1 run helloworld.repy`.

6. The line `listencommhandle = waitforconn(ip,port,hello)`.