User Guide for Project 3

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I. Installation & Environments

Thrift 0.9.0
Python 2.7.12
pickledb 0.6

II. Deploy clients and servers

Step 0. Make sure EVERY client and server machine has the *ProjectOne.thrift* file. Then generate stubs with the following command:

```
thrift --gen py ProjectOne.thrift
```

Step 1. Under the **same** directory of your *ProjectOne.thrift* file, deploy the python script. You may need to change the IP addresses in the script, since cluster IPs are hard coded in the file. Of course, you can add a few lines of python and read the IPs from a file.
The figure below shows the SERVER_IP array of 172.22.71.42. For a given server, the array records IPs of all other servers in the cluster.

```
#SERVER_IP=['172.22.71.42','172.22.71.38','172.22.71.40','172.22.71.41']
#SERVER_IP=['172.22.71.42','172.22.71.39','172.22.71.40','172.22.71.41']
#SERVER_IP=['172.22.71.42','172.22.71.38','172.22.71.39','172.22.71.41']
#SERVER_IP=['172.22.71.42','172.22.71.38','172.22.71.40','172.22.71.39']
SERVER_IP=['172.22.71.41','172.22.71.38','172.22.71.40','172.22.71.39']
```

Step 2. Make sure every server has *multipaxos.py* . The port number used for internal communication between cluster servers is hard coded in every server.py.

III. Examples

There are five servers in the cluster. You need to start all of them before running the client. To start a server, run the something like the following command. Make sure you use the **same** port number across the cluster.

```
python thrift_server_42.py 172.22.71.42:31000
```

Before you start the client, get your commands file ready under the same directory of the client script. The command file should be in csv format. Run the command below to execute.

```
python thrift_client_37.py ./tst1.csv 31000
```