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Software Requirements

- 1) Basic java software(jdk&jre) version 1.8. For installation, download the software, run and install it as usually. After installation, set the system's environment variables, i.e set the "path" variable to java software directory.
- 2) Data Base---Microsoft Access 2016 (free download or trial version)
- 3) Necessary jar files and gif files are included in lib and resources folder. So no need to download them separately.

Procedure to Compile, Run/ Start

Go to command prompt navigate to your project location and then navigate to "releases".

Starting server

Give the below command over the command prompt.

```
start java -cp Server.jar;commons-lang-2.6.jar;commons-logging-  
1.1.1.jar;hsqldb.jar;jackcess-2.0.4.jar;ucanaccess-2.0.8.jar;%classpath% com.mclient.Server  
-x
```

Starting Client

Give the below command over the command prompt.

```
set classpath=commons-lang-2.6.jar;commons-logging-1.1.1.jar;hsqldb.jar;jackcess-  
2.0.4.jar;ucanaccess-2.0.8.jar;org.apache.commons.io.jar;%classpath%;
```

To run either one or multiple client instances (Multi-Threading)

Give the below command that many times you want client instance to run over the command prompt.

```
start javaw -cp Client.jar com.mclient.Client 127.0.0.1
```

To show Timeout condition during pre-commit phase

```
start javaw -cp Client1.jar com.mclient.Client 127.0.0.1
```

ASSUMPTIONS

1. Code is built using lab-2 code. New users couldn't register for transactions. Preregistered user in lab-1,2 can participate in three phase-commit on the transactions.
2. The co-ordinator is pre-selected i.e., the first client who logs in will serve as coordinator and the remaining as participants.
3. Participant cannot either "post" or ask for "vote", similarly coordinator cannot use "commit" or "abort" buttons as we can see in the UI of the project.
4. During Pre-commit phase, there are two situations:
 - Run Client.jar so that when all clients send ack back, it is global commit.
 - Run Client1.jar so that all clients are in pre-commit phase but if one of them do not respond with ack, after 2 minutes, it will be global commit again after timeout error in pre-commit phase.
5. If any participants press abort, it will be global abort as in 2 pc.

References:

- 1) <http://www.w3.org/Protocols/>
- 2) <https://stackoverflow.com/questions/2746875/how-can-the-three-phase-commit-protocol-3pc-guarantee-atomicity>