

# Distributed Examination System

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## Abstract :

This distributed system application works on the basis of modern day approach of computer based online test where a number of simultaneous users take up the exam and there would be an examiner who would be evaluating them and marking them based on the answers they've given with respect to the given questions. The client takes up a certain number of questions upon his own interest which the examiner types on to his screen and the clients have to answer then while he quits, he gets the total score of his responses.

## Implementation :

### Connection Used : TCP

We have used TCP because it is more reliable and also once making a connection, it does not always require port number and ip address to send a particular piece of information.

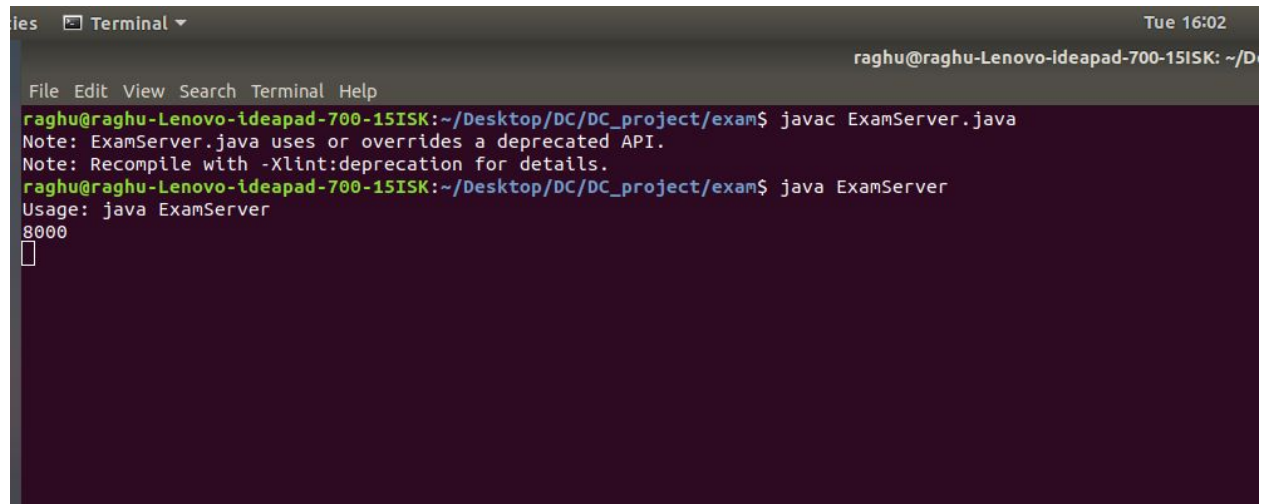
### Concept Used : Multi-threading

Multithreading is being used to accommodate the number of clients dynamically within the range of the specified max client count as each specific thread can deal with an individual client.

## How to execute ?

1. Compile the code with the following command. (javac name\_of\_program.java)
2. Make sure to run the server code (ExamServer.java) first and then client code (ExamClient.java) using the following command. (java class\_name)
3. Run the server program and then create as many as clients you want within the limit (10).
4. Name the first client as "Examiner" (without the quotes) and then the remaining clients as your wish.
5. Now, when all the clients you wanted to create have been created, type a question to the clients and then wait for their answers to be given.
6. Now, when each client gives their own specific answer and presses enter, their responses will be shown on the examiner's screen and mark them according to their response.
7. If you want to quit in between the exam, type "/q" (without the quotes) and then press enter.
8. Type the score of the quitting client and display it on the screen.
9. Now, when every client has quit the exam, type "/q" (without the quotes) from console of the examiner and then press enter and even the examiner quits resulting to the end of examination.

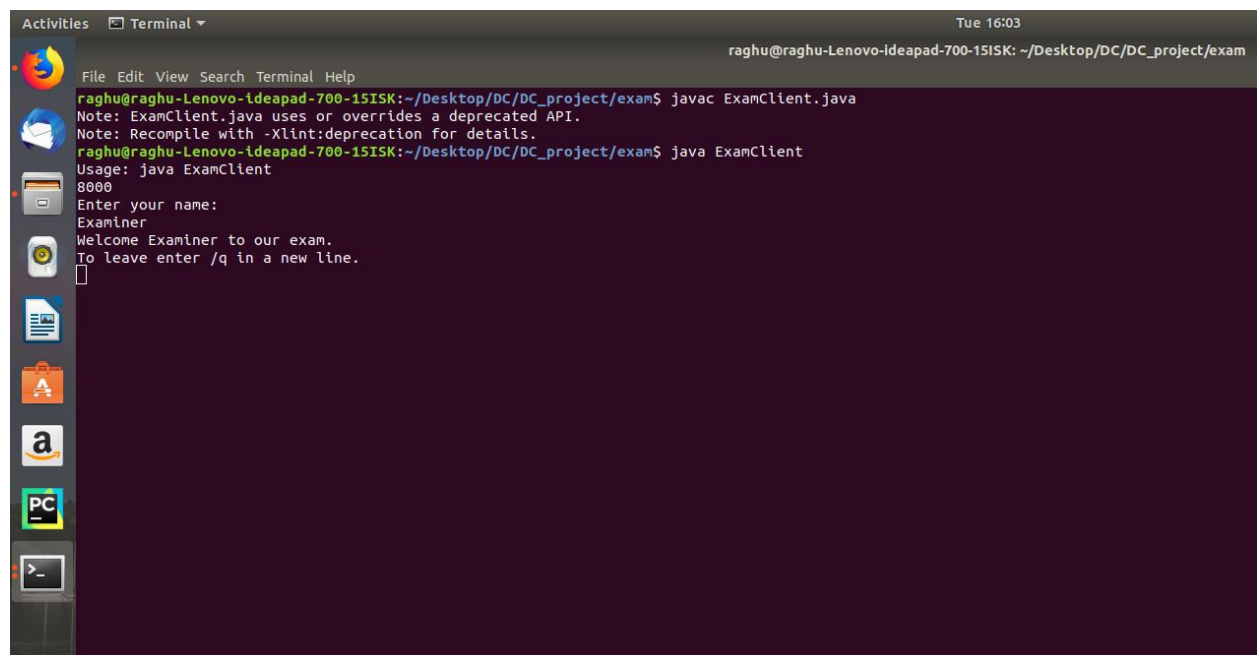
Some glimpses from the code execution :



A terminal window titled "Terminal" with a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Tue 16:02, raghu@raghu-Lenovo-Ideapad-700-15ISK: ~/D). The terminal shows the following commands and output:

```
raghu@raghu-Lenovo-Ideapad-700-15ISK:~/Desktop/DC/DC_project/exam$ javac ExamServer.java
Note: ExamServer.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
raghu@raghu-Lenovo-Ideapad-700-15ISK:~/Desktop/DC/DC_project/exam$ java ExamServer
Usage: java ExamServer
8000

```



A terminal window titled "Terminal" with a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Tue 16:03, raghu@raghu-Lenovo-Ideapad-700-15ISK: ~/Desktop/DC/DC\_project/exam). The terminal shows the following commands and output:

```
raghu@raghu-Lenovo-Ideapad-700-15ISK:~/Desktop/DC/DC_project/exam$ javac ExamClient.java
Note: ExamClient.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
raghu@raghu-Lenovo-Ideapad-700-15ISK:~/Desktop/DC/DC_project/exam$ java ExamClient
Usage: java ExamClient
8000
Enter your name:
Examiner
Welcome Examiner to our exam.
To leave enter /q in a new line.

```

```
Activities Terminal Tue 16:03
raghu@raghu-Lenovo-ideapad-700-15ISK: ~/Desktop/DC_DC_project/exam
File Edit View Search Terminal Help
raghu@raghu-Lenovo-ideapad-700-15ISK:~/Desktop/DC_DC_project/exam$ java ExamClient
Usage: java ExamClient
8000
Enter your name:
student1
Welcome student1 to our exam.
To leave enter /q in a new line.
█
```

```
Activities Terminal Tue 16:03
raghu@raghu-Lenovo-Ideapad-700-15ISK: ~/Desktop/DC_DC_project/exam
File Edit View Search Terminal Help
raghu@raghu-Lenovo-ideapad-700-15ISK:~/Desktop/DC_DC_project/exam$ java ExamClient
Usage: java ExamClient
8000
Enter your name:
student2
Welcome student2 to our exam.
To leave enter /q in a new line.
█
```

```

raghu@raghu-Lenovo-Ideapad-700-15ISK: ~/Desktop/DC/DC_project/exam
File Edit View Search Terminal Help
raghu@raghu-Lenovo-Ideapad-700-15ISK:~/Desktop/DC/DC_project/exam$ java ExamClient
nt
Usage: java ExamClient
8000
Enter your name:
student1
Welcome student1 to our exam.
To leave enter /q in a new line.
<Examiner> Question ??
Answer a
<Examiner> Question ??
Answer d
<Examiner> Question ??
no
/q
Thank you student1

```

```

raghu@raghu-Lenovo-Ideapad-700-15ISK: ~/Desktop/DC/DC_project/exam
File Edit View Search Terminal Help
raghu@raghu-Lenovo-Ideapad-700-15ISK:~/Desktop/DC/DC_project/exam$ java ExamClient
nt
Usage: java ExamClient
8000
Enter your name:
student2
Welcome student2 to our exam.
To leave enter /q in a new line.
<Examiner> Question ??
Answer b
<Examiner> Question ??
Answer c
<Examiner> Question ??
yes
/q
Thank you student2

```

```

raghu@raghu-Lenovo-Ideapad-700-15ISK: ~/Desktop/DC/DC_project/exam
File Edit View Search Terminal Help
raghu@raghu-Lenovo-Ideapad-700-15ISK:~/Desktop/DC/DC_project/exam$ javac ExamServer.java
Note: ExamServer.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
raghu@raghu-Lenovo-Ideapad-700-15ISK:~/Desktop/DC/DC_project/exam$ java ExamServer
Usage: java ExamServer
8000

```

```

raghu@raghu-Lenovo-Ideapad-700-15ISK: ~/Desktop/DC/DC_project/exam
File Edit View Search Terminal Help
raghu@raghu-Lenovo-Ideapad-700-15ISK:~/Desktop/DC/DC_project/exam$ java ExamClient
nt
Usage: java ExamClient
8000
Enter your name:
Examiner
Welcome Examiner to our exam.
To leave enter /q in a new line.
*** A new user student1 entered the exam !!! ***
*** A new user student2 entered the exam !!! ***
Question ??
<student1> Answer a
<student2> Answer b
Question ??
<student1> Answer d
<student2> Answer c
Question ??
<student1> no
<student2> yes
The student1 has finished the exam.
The student2 has finished the exam.
/q
Thank you Examiner

```

