Submission Worksheet

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https://learn.ethereallab.app/assignment/IT114-002-S2024/it114-project-milestone-1/grade/mth39

IT114-002-S2024 - [IT114] Project Milestone 1

Submissions:

Submission Selection

1 Submission [active] 3/13/2024 2:39:45 PM

Instructions

COLLAPSE

1. Create a new branch called Milestone1
2. At the root of your repository create a folder called Project if one doesn't exist yet
    - You will be updating this folder with new code as you do milestones
    - You won't be creating separate folders for milestones; milestones are just branches
3. Create a pull request from Milestone1 to main (don't complete/merge it yet, just have it in open status)
4. Copy in the latest Socket sample code from the most recent Socket Part example of the lessons
    - Recommended Part 5 (clients should be having names at this point and not ids)
    - https://github.com/MattToegel/IT114/tree/Module5/Module5
5. Fix the package references at the top of each file (these are the only edits you should do at this point)
6. Git add/commit the baseline and push it to github
7. Create a pull request from Milestone1 to main (don't complete/merge it yet, just have it in open status)
8. Ensure the sample is working and fill in the below deliverables
    - Note: The client commands likely are different in part 5 with the /name and /connect options instead of just "connect"
9. Generate the worksheet output file once done and add it to your local repository
10. Git add/commit/push all changes
11. Complete the pull request merge from step 7
12. Locally checkout main
13. git pull origin main

Branch name: Milestone1

Tasks: 9 Points: 10.00

Start Up (3 pts.)

COLLAPSE

^COLLAPSE^

Task #1 - Points: 1

Text: Server and Client Initialization

Checklist

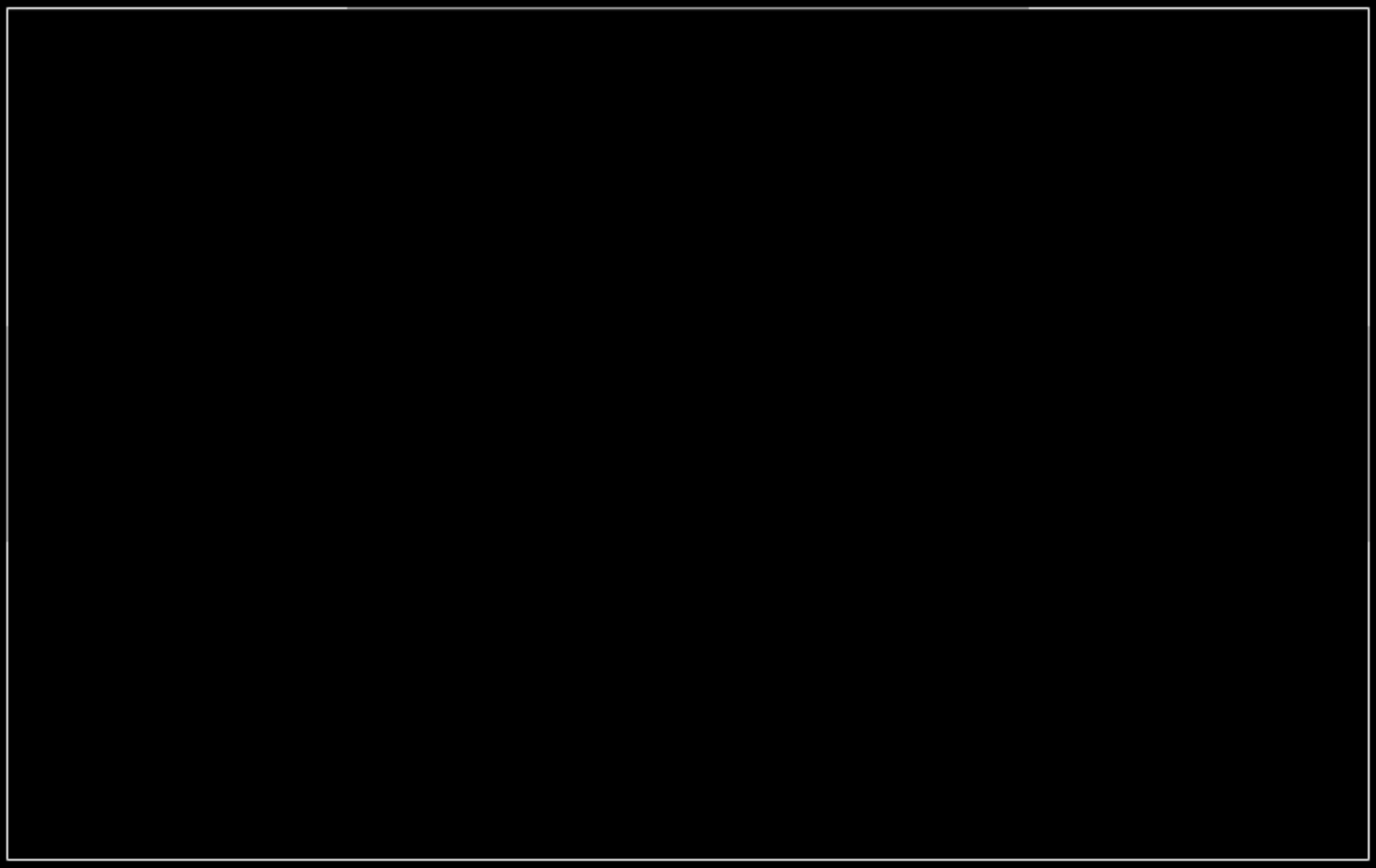
*The checkboxes are for your own tracking

#	Points	Details
☐ #1	1	Server should properly be listening to its port from the command line (note the related message)
☐ #2	1	Clients should be successfully waiting for input
☐ #3	1	Clients should have a name and successfully connected to the server (note related messages)

Task Screenshots:

Gallery Style: Large View

Small Medium Large



Screenshot showing server listening to its port (terminal all the way on the left), and clients successfully connected, with a name, and waiting for input (last three terminals).

Checklist Items (0)

^COLLAPSE^

Task #2 - Points: 1

Text: Explain the connection process

Details:
Note the various steps from the beginning to when the client is fully connected and able to communicate in the room.

Emphasize the code flow and the sockets usage.

Checklist *The checkboxes are for your own tracking

#	Points	Details
☐ #1	1	Mention how the server-side of the connection works
☐ #2	1	Mention how the client-side of the connection works
☐ #3	1	Describe the socket steps until the server is waiting for messages from the client

Response:

The server side of the connection is responsible for managing rooms. The default will be the lobby; from there, rooms can be created, joined, or removed depending on the method used.
The client side of the connection allows users to chat with each other. They can see the messages of other clients that are in the same room, this can either be the lobby or rooms that are created.
The server initializes with a default port of 3000 and creates a ServerSocket to listen for incoming connections. It also establishes a default room named "Lobby" for managing client interactions. Upon client connection, the server accepts the connection and spawns a new ServerThread to handle communication with the client. This thread manages the interaction with the client, allowing the server to wait for messages from the client. Overall, the server architecture enables continuous listening for client connections and seamless communication management through individual threads, ensuring efficient client-server interaction.

● Communication (3 pts.)

COLLAPSE

● COLLAPSE

Task #1 - Points: 1

Text: Add screenshot(s) showing evidence related to the checklist

Checklist *The checkboxes are for your own tracking

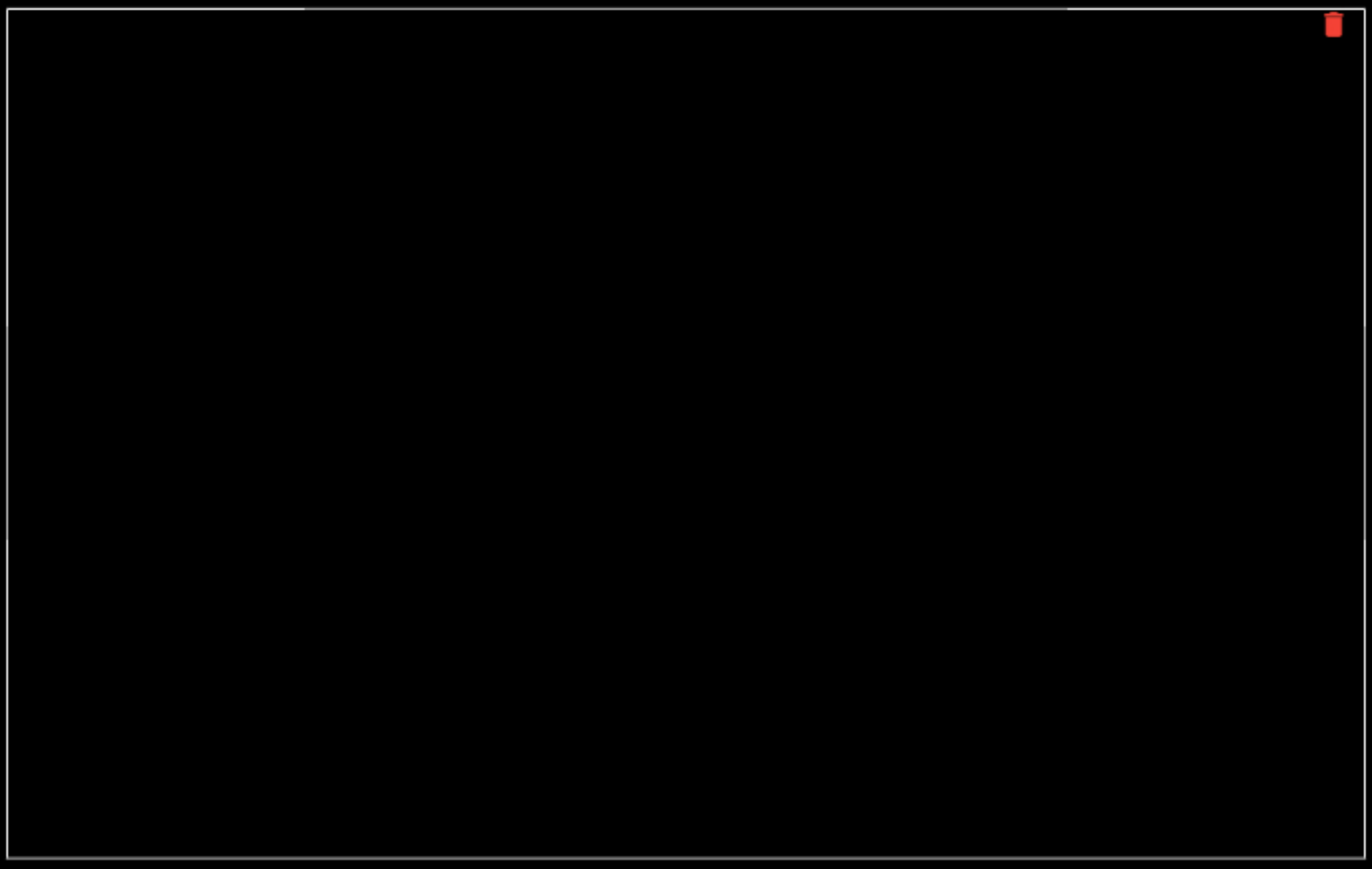
#	Points	Details
☐ #1	1	At least two clients connected to the server
☐ #2	1	Client can send messages to the server
☐ #3	1	Server sends the message to all clients in the same room
☐ #4	1	Messages clearly show who the message is from (i.e., client name is clearly with the message)

☐ #5	2	Demonstrate clients in two different rooms can't send/receive messages to each other (clearly show the clients are in different rooms via the commands demonstrated in the lessons
☐ #6	1	Clearly caption each image regarding what is being shown

Task Screenshots:

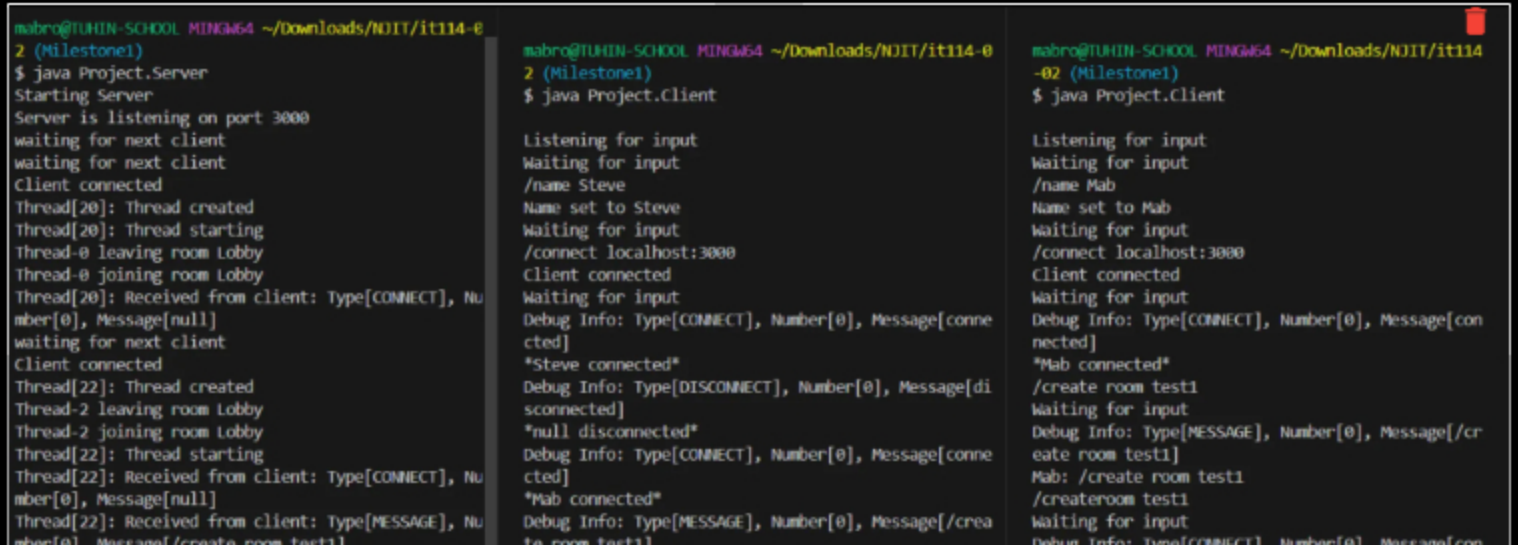
Gallery Style: Large View

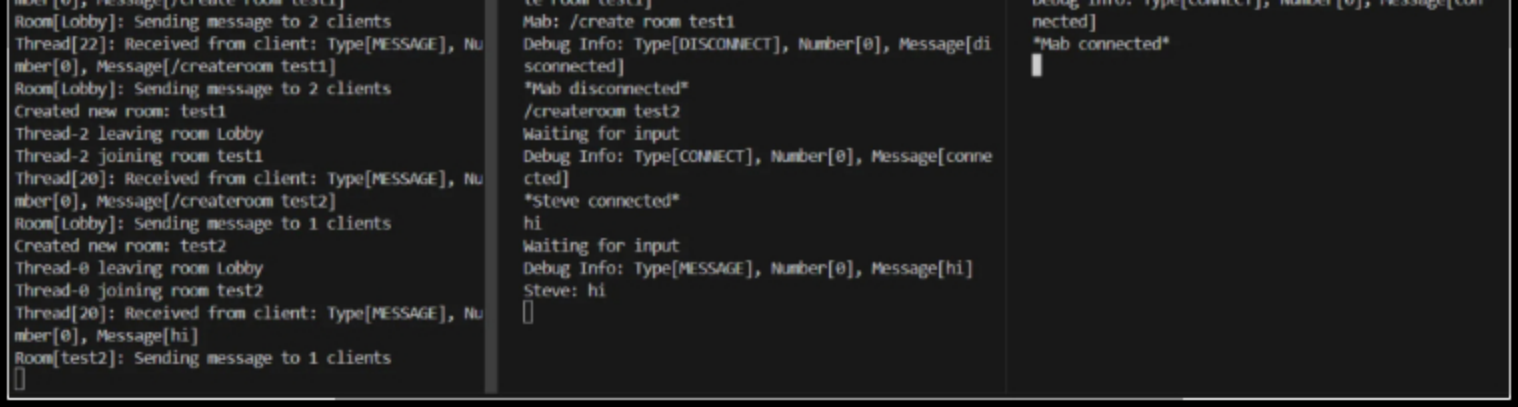
Small Medium Large



Screenshot showing two clients connected to the server, sending messages to the server, which the server sends to all clients in the same room. Messages clearly show who the message is from (i.e., client name is clearly with the message)

Checklist Items (0)





Screenshot showing two clients in separate rooms. When Steve sends the message "hi", Mab does not receive it because he is in another room.

Checklist Items (0)

COLLAPSE

Task #2 - Points: 1

Text: Explain the communication process

Details:

How are messages entered from the client side and how do they propagate to other clients?

Note all the steps involved and use specific terminology from the code.
Don't just translate the code line-by-line to plain English, keep it concise.

Checklist

*The checkboxes are for your own tracking

#	Points	Details
☐ #1	1	Mention the client-side (sending)
☐ #2	1	Mention the ServerThread's involvement
☐ #3	1	Mention the Room's perspective
☐ #4	1	Mention the client-side (receiving)

Response:

Once a client enters the server, they are automatically placed in the lobby, if they're the only one in the lobby, the room is going to clean itself up using the cleanup method so that it's not wasting any resources in case anyone wants to create their own room. Once the user is in a room, they will only get messages from whoever is in the same room as them based on an if else statement. To create or delete rooms, the processCommand method is used with a switch case statement to allow the user to make the room or join one if it exists and if it doesn't, a message will pop up saying that the room doesn't exist. There are also cases that allow the user to disconnect from the room once the user types out; disconnect, logout, or logoff.The serverthread is there to replace the server reference with the room reference so instead of sending the message to the server, it can send the message to the room.

Disconnecting/Termination (3 pts.)

COLLAPSE

COLLAPSE

Task #1 - Points: 1

Text: Add screenshot(s) showing evidence related to the checklist

Checklist

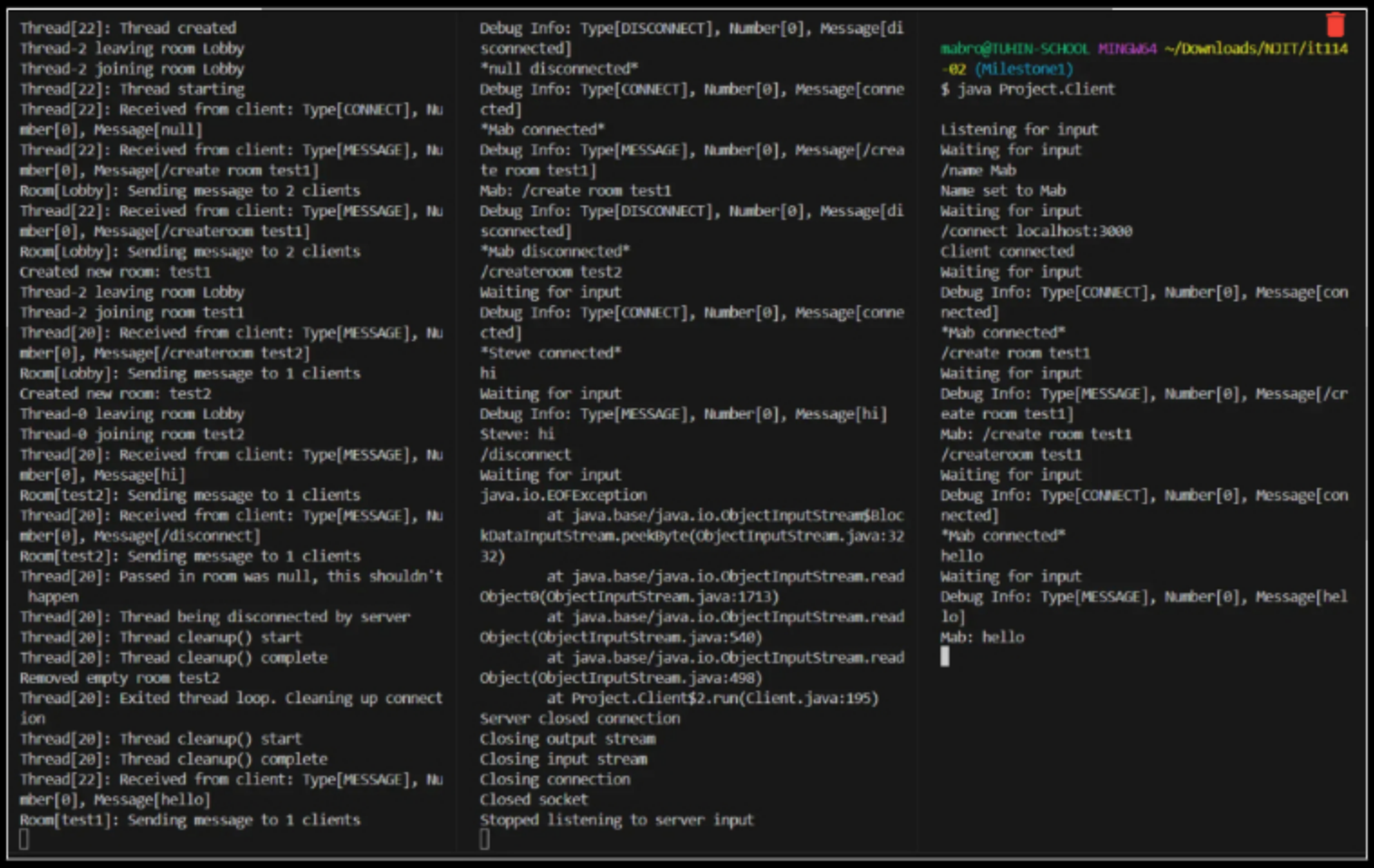
*The checkboxes are for your own tracking

#	Points	Details
☐ #1	1	Show a client disconnecting from the server; Server should still be running without issue (it's ok if an exception message shows as it's part of the lesson code, the server just shouldn't terminate)
☐ #2	1	Show the server terminating; Clients should be disconnected but still running and able to reconnect when the server is back online (demonstrate this)
☐ #3	1	For each scenario, disconnected messages should be shown to the clients (should show a different person disconnected and should show the specific client disconnected)
☐ #4	1	Clearly caption each image regarding what is being shown

Task Screenshots:

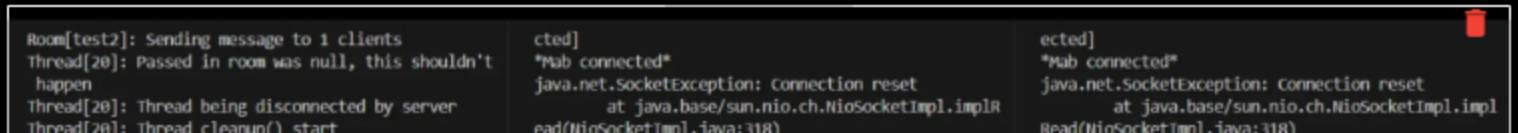
Gallery Style: Large View

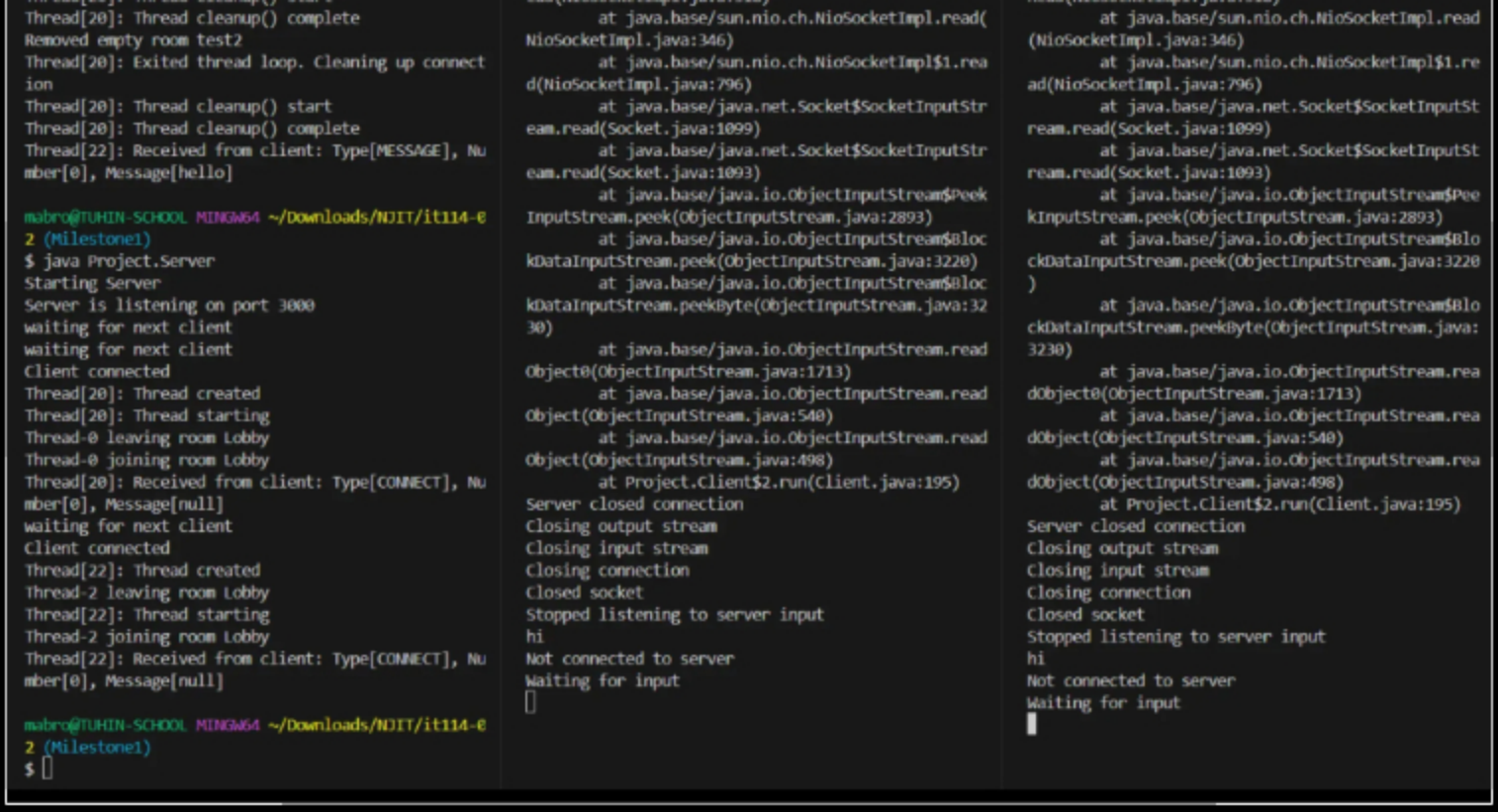
Small Medium Large



Screenshot showing client Steve disconnecting from the server, but the server is still running as Mab is able to send a message which server displays. The server also shows Steve disconnected message

Checklist Items (0)





Showing server terminated but client still running

Checklist Items (0)

COLLAPSE

Task #2 - Points: 1

Text: Explain the various Disconnect/termination scenarios

Details:
Include the various scenarios of how a disconnect can occur. There should be around 3 or so.

Checklist *The checkboxes are for your own tracking

#	Points	Details
☐ #1	1	Mention how a client gets disconnected from a Socket perspective
☐ #2	1	Mention how/why the client program doesn't crash when the server disconnects/terminates.
☐ #3	1	Mention how the server doesn't crash from the client(s) disconnecting

Response:

Once the user disconnects from the server, an IO exception is displayed which is expected since the connection got severed. The output stream, input stream, connection, and socket get closed so the user can still type things, but its not connected to the server anymore. Even when the clients disconnect, the server is still able to run since the server itself wasn't terminated.

Misc (1 pt.)

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COLLAPSE

Task #1 - Points: 1

Text: Add the pull request link for this branch

URL #1

https://github.com/MabroorHussan/it114-02/pull/8

COLLAPSE

Task #2 - Points: 1

Text: Talk about any issues or learnings during this assignment

Details:

Few related sentences about the Project/sockets topics

Response:

I had a great time learning how chat rooms work in Java and the server side programming behind them.

COLLAPSE

Task #3 - Points: 1

Text: WakaTime Screenshot

Details:

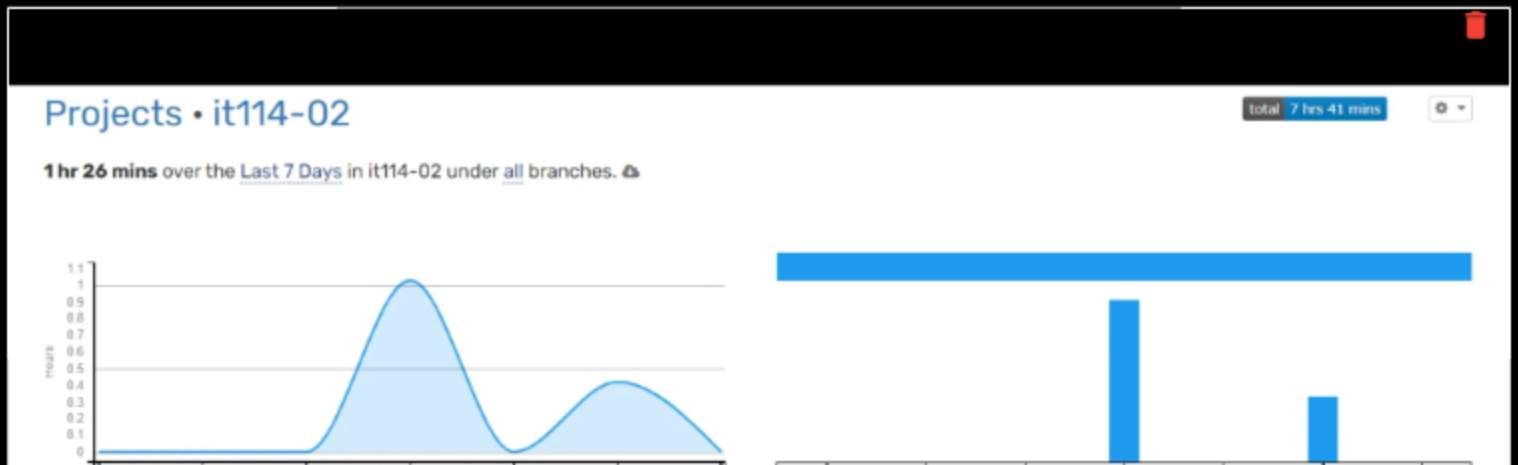
Grab a snippet showing the approximate time involved that clearly shows your repository.

The duration isn't considered for grading, but there should be some time involved.

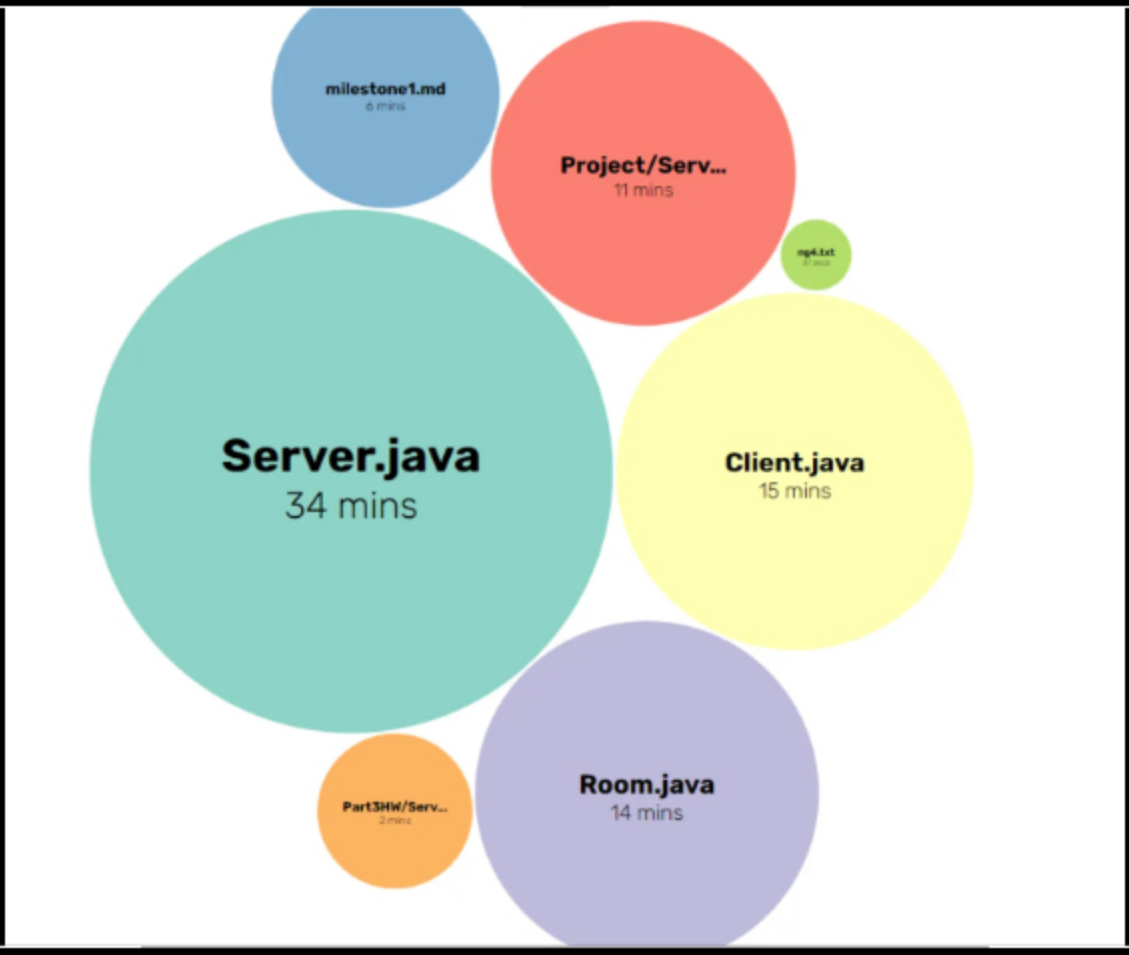
Task Screenshots:

Gallery Style: Large View

Small Medium Large



Screenshot showing Waka Time on repository "it114-02"



Screenshot showing the files Waka Time for the files I worked on

End of Assignment