Distributed Systems Lab 1 Report

Anirudh Mungre 100615309

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Task 1

1 - How I Accomplished the Task.
Gathering the code given and modifying to complete the task.

2 - Challenges and Solutions.
I had to re-install java before starting this task because I had reimaged my PC the night before. This took an hour and cut into the time available for me to work on the tasks. After installation, I found that using `.read()` to send messages did not work because they were read as bytestreams instead of text. I had to use Buffered readers and `.readLine()` instead.

3 - What I Learned.
How sockets work, the input types available to send over sockets and the way that InputStream data is interpreted through `.read()`.

Task 2

1 - How I Accomplished the Task.
Reusing the socket logic from the previous task and researching ways to use ASCII conversions to cipher the text.

2 - Challenges and Solutions.
I didn’t know how to cipher the text originally. Searching through the java documentation I found that you could add integers to characters in a character array and cast it back to char.

3 - What I Learned.
How to shift characters by a shift value in Java and cast back to string text.

Task 3

1 - How I Accomplished the Task.
Reusing the Task 2 code to perform the task. Inputting a while loop for multiple input.

2 - Challenges and Solutions.
No challenges for this task as I am aware how while loops work.

3 - What I Learned.
Sockets can accept multiple inputs throughout a connection.

Task 4

1 - How I Accomplished the Task.
Referencing the thread code from the in class examples and implementing it to achieve connection from multiple clients.

2 - Challenges and Solutions.
A challenge was understanding where the logic for the thread was supposed to go. After reading through the in class examples the location for the logic was clear. I didn't know where to create a thread or if I should create a list of threads. I decided to create threads on connection and since I didn't need to know which thread did what so I did not store each thread in a list.

3 - What I Learned.
How threads are assigned and thread logic is run.