Internet Technology: Project 2 Report

1) **Team Details**
   Clearly state the names and needs of your team members (There are 2 of you)
   Name: Prachiti Atigre **NetID:** pka24
   Name: Ujani Patel **NetID:** ukp10

1) **Collaboration:**
   Who did you collaborate with on this project? What resources and references did you consult?
   We did not collaborate with any other individuals on this project.
   The resources and references that we consulted were:
   - Recitation documents
   - http://pymotw.com/2/select/

2) **Discuss how you implemented the RS functionality that tracks with TS responded to a given query or timing out if neither TS responded. Please be clear and specific.**
   In RS, we first created 3 sockets to maintain three connections - with client, TS1 and TS2. We first established a connection with the client and received the domain name. After receiving the domain name, we sent that data to both TS1 and TS2.
   For select, we put the TS1 and TS2 socket connections in 'inputs' because we are waiting to get a response from either TS1 or TS2.
   We then checked if 'readable' was empty or not. Readable meant the inputs.
   If the readable was not empty, that means there was data received from either TS1 or TS2. Once the data was received, we sent it back to the client.
   If the readable is empty, that means that the RS didn't receive any response from TS1 or TS2. Since there was no response, we sent back the domain name appended with the 'TIMED OUT' string.

3) **Is there any portion of your code that does not work as required in the description above?**
   No. All the requirements from the document have been implemented in our code

4) **Did you encounter any difficulties? If so, explain.**
   The challenge encountered during the project was understanding how select works. We were able to implement client, TS1, and TS2 successfully. We were also able to send the string from client → RS → TS1 and TS2, however, we encountered difficulty in accepting the data from either TS1 or TS2. We were also having difficulties when neither TS1 nor TS2 was sending any data.

5) **What did you learn from working on this project? Add any interesting observations not otherwise covered in the questions above. Be specific and technical in your response.**

From this project, we learned how to use select(). It is much easier to send/receive data with select(). For example, in project 1, we had difficulties accepting data when we didn't know how much data was going to be sent/received. However, select() is able to implement that.

One thing we noticed was that when running the program when neither TS1 nor TS2 responded, it took longer for the RS to realize that. Meaning, when RS timed out, that process took a few more seconds as compared to when either TS1 or TS2 responded.