CS-1217 Operating Systems, Spring 2025

Assignment Code:	CS1217_A3
Topic:	Socket Programming
Due Date:	May 2, 2025
Total Marks:	35
Weightage:	-

Submission Instructions:

- You must submit a pair of client and server programs along with a PDF containing answers to the questions in Part 2.
- Submissions must be in a zip file following the format **Firstname_CS1217_A2**.
- Please use C or C++ to solve the assignment. (Python or any other programming language is not allowed.)

Part 1: Socket Programming

In this assignment, you are required to implement socket programming by writing a pair of client and server programs.

1. The server will run a service and should allow any number of clients to connect simultaneously. You must create 10 meaningful questions based on the CS curriculum at Ashoka University, along with their answers (The CS handbook is attached for reference). The server should present these questions to the client whenever a connection is made and allow the client to choose a question to be answered.
2. The client makes a query and receives the response from the server. Note: after responding to a query, the server should not immediately terminate. Instead, it should ask if the client wishes to ask another question. As long as the client selects a valid query, the server should continue to respond. The session ends when the client chooses to exit.
3. **Sample Questions:**
   (a) What is the total number of CS credits required to complete the 4-year BSc (Hons) degree in CS?
   (b) Could you provide a breakdown of CS credits?
   (c) What are the core courses?
   (d)
   (e)
   (f)
   (g)
   (h)
   (i)
   (j)

Part 2: Questions

1. Run the client-server program on your machine and provide the socket address. How did you obtain the socket address?

2. What system calls are involved in creating a socket? Briefly describe each.

Note: Since all of you have taken a course on networks, we assume prior knowledge of socket programming. In case you face any difficulty, you are welcome to visit my office hours for help.