Indian Institute of Technology, Dhanbad

Lab Assignment 1

1. Wap using client server socket programming: A client enters an integer number n and server returns the results F_i where $0 \leq i \leq n$ respectively. F_i denotes the Fibonacci number of i^{th} position.

   E.g., if $n = 6$

   Output : $F_0 = 0$, $F_1 = 1$, $F_2 = 1$, $F_3 = 2$, $F_4 = 3$, $F_5 = 5$, $F_6 = 8$

2. Wap using client server socket programming: Client will enter an integer number and server will return its factorial.

   E.g., if $n = 6$

   Output : $a = n! = 720$

3. Wap using client server socket programming: Server keeps the grade record as $85 - 100$: Grade A, $70 - 84$: Grade B, $60 - 69$: Grade C, $50 - 59$: Grade D, $0 - 50$: fail. Client enters a mark n and get the grade.

   E.g., if $n = 75$

   Output : Grade B

4. Wap using client server socket programming: Client needs to authenticate itself by entering a server defined string as a password and then to say Hi to server. Server replies with a Hello. Press any key to exit.

5. Wap using client server socket programming: Client will enter two numbers n and m. The server will return the results of addition ($a = n + m$), subtraction ($b = n - m$), multiplication ($c = n \times m$) and division ($d = n/m$).

   E.g., if $n = 10$ and $m = 5$

   Output : $a = n + m = 15$, $b = n - m = 5$, $c = n \times m = 50$, $d = n/m = 2$

6. Wap using client server socket programming: Client will enter an integer number n and server will return the result with sequence of $*$.

   E.g., if n = 3

   Output :

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7. Wap using client server socket programming: A client enters 0, 1, 2, 3, 4 in sequence and server returns the results 3, 3, 7, 15, 27 respectively in sequence. (One by one)

8. WAP using client-server programming: Server maintains the database of students (at least 10 students) with the roll number as key. Client sends a roll number to server and server replies with all the corresponding information (at least 5 details). Connection should not terminate till the client wants to.

9. WAP using client-server programming: Client sends a word and a number to server and server sends the letter which occurs the given number of times in the given word, if it exists else send the letter which occurs maximum number of times in the given word. Connection should not terminate till the client wants to.

10. WAP using client-server programming: Server has the details for each employee about the number of leaves that an employee can take at present (total leaves; current balance of leaves; extra leaves). Client sends an employee ID to server with the number of leaves he/she wants to take and server replies with the appropriate response. Connection should not terminate till the client wants to.

11. WAP using client-server programming: Client has a list of words (at least 20 words) and server has a dictionary (at least 15 entries). Client picks up a random word from its list and sends it to server. Server responds with its meaning, if found else adds this entry to its dictionary with its meaning.

12. WAP using client-server programming: A client sends a composite number to the server and the server replies with the prime factorization of the number. Connection should not terminate till the client wants to.

13. WAP using client-server programming: Server stores set of questions and their answers in its database (at least 10). Client sends a question to server and server replies with the corresponding answer, if found else reply as Try again. Connection should terminate after client has send three questions or client terminates.

14. Wap using client server socket programming: write a client-server CRC (16 bit) check C program steps to follow:

    (a) Client sends a message to server with an appended CRC.

    (b) Server checks the data for any error and accepts it.

    (c) Server replies with 'good data' / 'bad data' depending upon there is no error on with error

    (Server and client will share a common divisor)

15. Wap using client server socket programming to download a file: client will specify commands like $./a.out < server\_ip >< port\_no >< get >< filename >$. (Use different directories for client and server)

16. Wap using client server socket programming to upload a file: client will specify commands like $./a.out < server\_ip >< port\_no >< put >< filename >$. (Use different directories for client and server)

17. Wap using client server socket programming: Client needs to authenticate itself by entering a server defined string as a password and then to say Hi to server. Server replies with a Hello. Press any key to exit.

18. Wap using client server socket programming: Server maintains a product list as given below:

item_id	item_name	price	no. of items available
$I-01$	Paneer	Rs. 25/100 gms	50 pieces/100 gms
$I-02$	Washing powder	Rs. 20/packet	20 packets

    User will request server with the query: $./a.out < server\_IP >< server\_port >< item\_id >< quantity >$. Once an item is sold quantity at server for that item will decrease. Show proper alerts when items are not available, or a successful purchase.