

**Home Assignment** (*Computer Networks*) [Mahavir Jhawar]  
**Submit by: 20/11/2017**

This assignment requires you to implement a TCP client-server system that allows clients to extract Ashoka events information from server by sending “tags”. The server maintains a calendar of events such that a list of tags are attached to each event.

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**What server maintains:**

Server maintains a table that stores data of the following type -

Event Description	Tags	Date
Making Today's Software Resilient, Prof. Santonu Sarkar	Talk, CS	28/11/2017
On the lightweight diffusion of layer of block cipher, Prof. Sumanta Sarkar	Talk, CS	15/11/2017
Single Object Auctions with Externalities, Prof. Abdul Quadir	Talk, Economics	08/11/2017
Environment from the margins	workshop, Environment	18/11/2017
Tracing Mountain Landscapes of the Central Himalayas	Talk, History	13/11/2017
Agneepath	sport, fest	03/11/2017

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**Execution Flow**

- | The server will start (say at host with ip address a.b.c.d and port number 2345) in passive mode listening for a transmission from the client.
- The client will then start (at a host with ip address different from a.b.c.d) and contact the server (at a.b.c.d and port 2345).
- ← The server will accept the connection and revert back with all its tags. For the above table - server sends the following list: Talk, CS, workshop, economics, history, fest, sport.
- The client, on receiving the tag list, selects any one tag and sends it to the server. It waits for the server to send back all the events that are attached to that tag and are scheduled on that day or at any later date. For example, client sends the tag CS.

- ← The server, indexes its table as per the current date and tag, and sends back all the relevant events information to the client. In this example, the server receives the tag CS and it checks the current system date (in this case 11/11/2017), and sends back both the CS talks by Prof. Santonu and Sumanta. It then continue to wait for other connections/queries.
- | The client receives the events information attached to the tag. It could then issue another query or close the connection.

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### Important Instructions

- **The assignment carries 30 marks**
- The table at server should, for this assignment, have at least 5 different tags, at least two different events per tag, and at least two tags per event.
- You must include a read me file listing out instructions for compilation, at least two sets of successful sample inputs and outputs. **Absence of this might invite negative marking up to -5.**

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### Bonus Grades

- The bonus grade requires the following added functionality to the basic program.
- The bonus grade is applicable subject to the correctness of basic program.
- **(5% Bonus grade)** - if you provide a client software (source code to executable) with GUI, ready to be installed at any host.

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### Bonus<sup>+</sup> Grades

- **(10%)** - if server fetches events information, at regular interval, from Ashoka's official event calender.