Development Assignment

Research

1) When we type the URL of a website into browser, the DNS (Domain name system) first looks for the IP address corresponding to the URL. A connection is then established between the client and the server. Following this, the client can make requests and the server streams data packets over the transmission layer back to the client using a TCP/UDP/IP protocol.

The chief characteristic of TCP/IP protocol is that it offers an error-checking flow and control mechanism. If any of the packets that the client receives is faulty, a request is sent to the client to resend the packet.

The TCP/IP protocol is also responsible for sequencing data packets as the packets always follow the most optimal paths which generally renders them out of sequence. This is done by placing a sequence-id to the header of the binary signature of each packet. The header also consists of the IP address of the client.

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2) Database systems are a way to organize and relate different data models. The data models are usually organized in the form of tables or collections with their various attributes and links to other data models.

For our Professor database, SQL databases would be best as the number of fields remain fixed for each professor such as basic personal information, research data, courses being taught and past experience.

Also, as the above fields are regularly changing for a professor, a NoSql database would mean a lot of deletion and duplicate writing which would cause unnecessary overhead that can be easily avoided by using an SQL type database.

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Basic database layout

Professors attributes :-

~~name~~
1) name
2) Position
3) Department
4) Contact Info
5) Description
6) Courses

Courses attributes :-

1) name
2) code
3) Department
4) Description
5) Instructors

Key relation (Many to many)

reverse relation

User and Review model

Users :-

1) ~~name~~ username
2) email
3) Password
4) Name
5) Permissions
6) Reviews

Relation (User ⟷ Review) Many to one

Reviews (Course/Prof)

1) author
2) date and time
3) Body
4) Anonimity
5) Prof / ~~Courses~~ Course

~~Another~~ key relation to relate the review to a Prof/Course

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