Overview of MongoDB

Learning Objectives

- What is MongoDB?
- Advantages of MongoDB over RDBMS
- Why to use MongoDB
- Where to use MongoDB
- RDBMS terminology with MongoDB
- Environment setup for Windows and Ubuntu

What is MongoDB?

- MongoDB (from hu**mongo**us) is a cross-platform document-oriented database.
- Classified as a **NoSQL** database.
- Schema-free. Based on Binary JSON
- Organized in group of Documents -> Collections
- MongoDB provides high performance, availability, and easy scalability.
- Open Source

Advantages of MongoDB over RDBMS

- schema-less
- capable of holding arrays and embedded documents.
- No complex joins
- Performance tuning
- Enables faster access of the data.
- Deep query-ability.
- Conversion/mapping of application objects to database objects not needed.

Why use MongoDB

- **Document Oriented Storage** – Data is stored in the form of JSON style documents.
- Index on any attribute
- Replication and high availability
- Auto-sharding
- Rich queries
- Fast in-place updates

Where use MongoDB

- Big Data
- Content Management and Delivery
- Mobile and Social Infrastructure
- User Data Management
- Data Hub

RDBMS Terminology with MongoDB

The following table shows the relationship of RDBMS terminology with MongoDB:

RDBMS	MongoDB
Database	Database
Table	Collection
Tuple/Row	Document
column	Field
Table Join	Embedded Documents
Primary Key	Primary Key (Default key _id provided by mongodb itself)

Environment Setup for Windows

- Download the latest release release of MongoDB

  https://www.mongodb.org/downloads

- Now extract your downloaded file to c:\ drive or any other location.

Environment Setup for Windows(Cont..)

- Open the command prompt and run the following command

```
C:\>move mongodb-win64-*mongodb
```

- MongoDB requires a data folder to store its files. The default location for the MongoDB data directory is c:\data\db. So you need to create this folder using the Command Prompt.

- Execute the following command sequence.

```
C:\>md data
C:\md data\db
```

Environment Setup for Windows(Cont..)

- If you have to install the MongoDB at a different location, then you need to specify an alternate path for **\data\db** by setting the path **dbpath** in **mongod.exe**.

- In the command prompt, navigate to the bin directory present in the MongoDB installation folder. Suppose my installation folder is **D:\set up\mongodb**

```
C:\Users\XYZ>d:
D:\>cd "set up"
D:\set up>cd mongodb
D:\set up\mongodb>cd bin
D:\set up\mongodb\bin>mongod.exe --dbpath"d:\setup\mongodb\data"
```

Environment Setup for Windows(Cont..)

- This will show **waiting for connections** message on the console output.

- Run the MongoDB.

```
D:\set up\mongodb\bin>mongo.exe
```

Output:

```
MongoDB shell version: (latest version)
connecting to: test
```

Environment Setup for Ubuntu

- Run the following command to import the MongoDB public GPG key

sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv *keyvalue*

- Create a /etc/apt/sources.list.d/mongodb.list file using the following command.

echo "deb [arch=amd64] https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/4.0 multiverse" | sudo tee /etc/apt/sources.list.d/mongodb-org-4.0.list

Environment Setup for Ubuntu(cont..)

- Now issue the following command to update the repository −

  sudo apt-get update

- Next install the MongoDB by using the following command −

  sudo apt-get install -y mongodb-org

- In the above installation, released latest version will be installed successfully.

Environment Setup for Ubuntu(cont..)

- Start MongoDB
  sudo service mongodb start
- Stop MongoDB
  sudo service mongodb stop
- Restart MongoDB
  sudo service mongodb restart
- To use MongoDB run the following command.
  mongo
- This will connect you to running MongoDB instance.

THANKS