

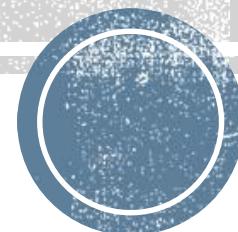
MongoDB- Storing Reviews

Tutorial – 3, Download, Set up and Implementation

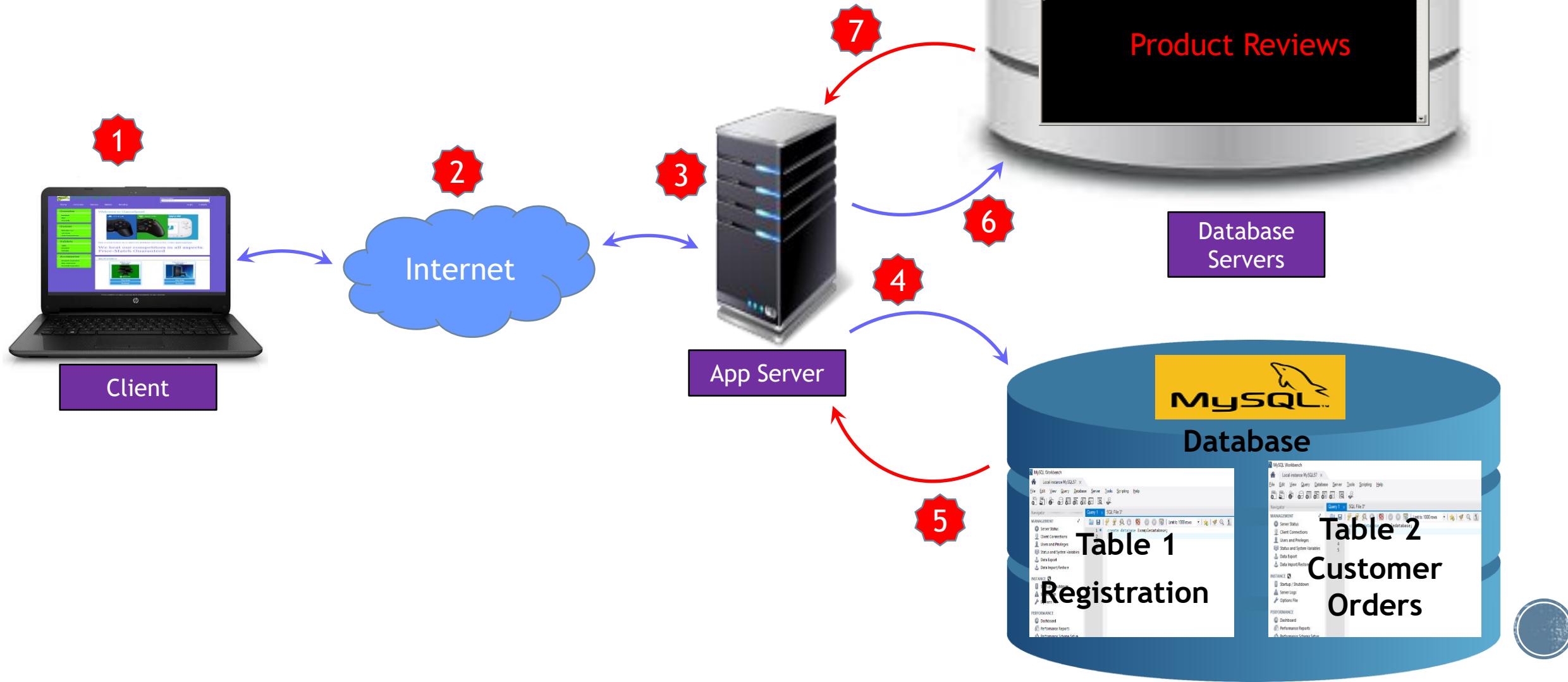
CSP 595 - Enterprise Web Application

Dr. Atef Bader

Illinois Institute of Technology



The Architecture - MVC



1. Mongo DB - Overview

- Mongo DB is a cross platform, document oriented database
- Mongo DB works on the concept of Collections and documents

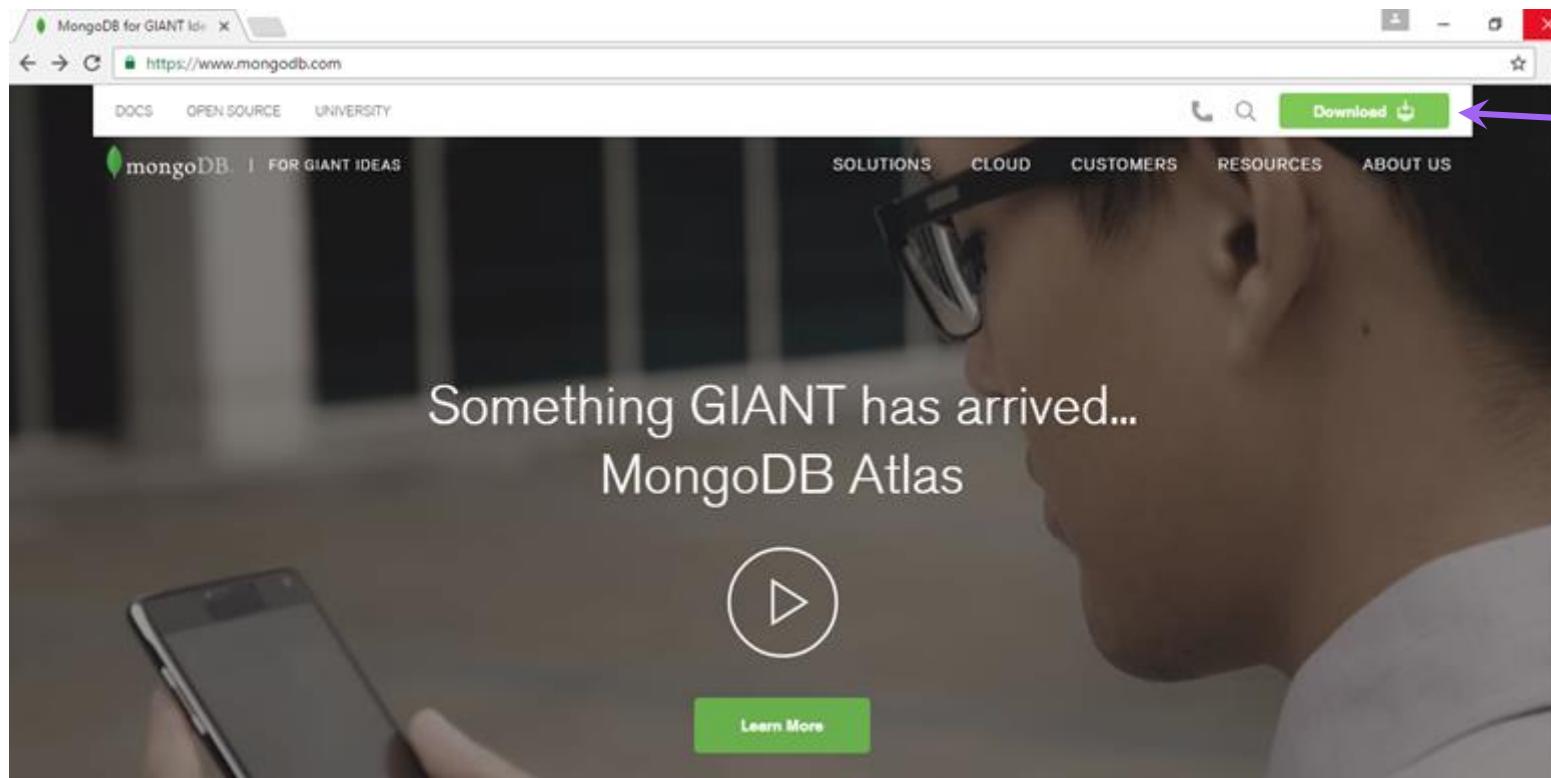
- Terminologies:
 - Database: This is the physical container for the collections
 - Collection: Collection is a group of Mongo DB documents
 - Document: Document is a set of key - value pairs

- Advantages:
 - Schema-less: The number of fields, content and size of the document can vary from one another
 - Scalability: Mongo DB is easy to scale



2. Mongo DB - Download

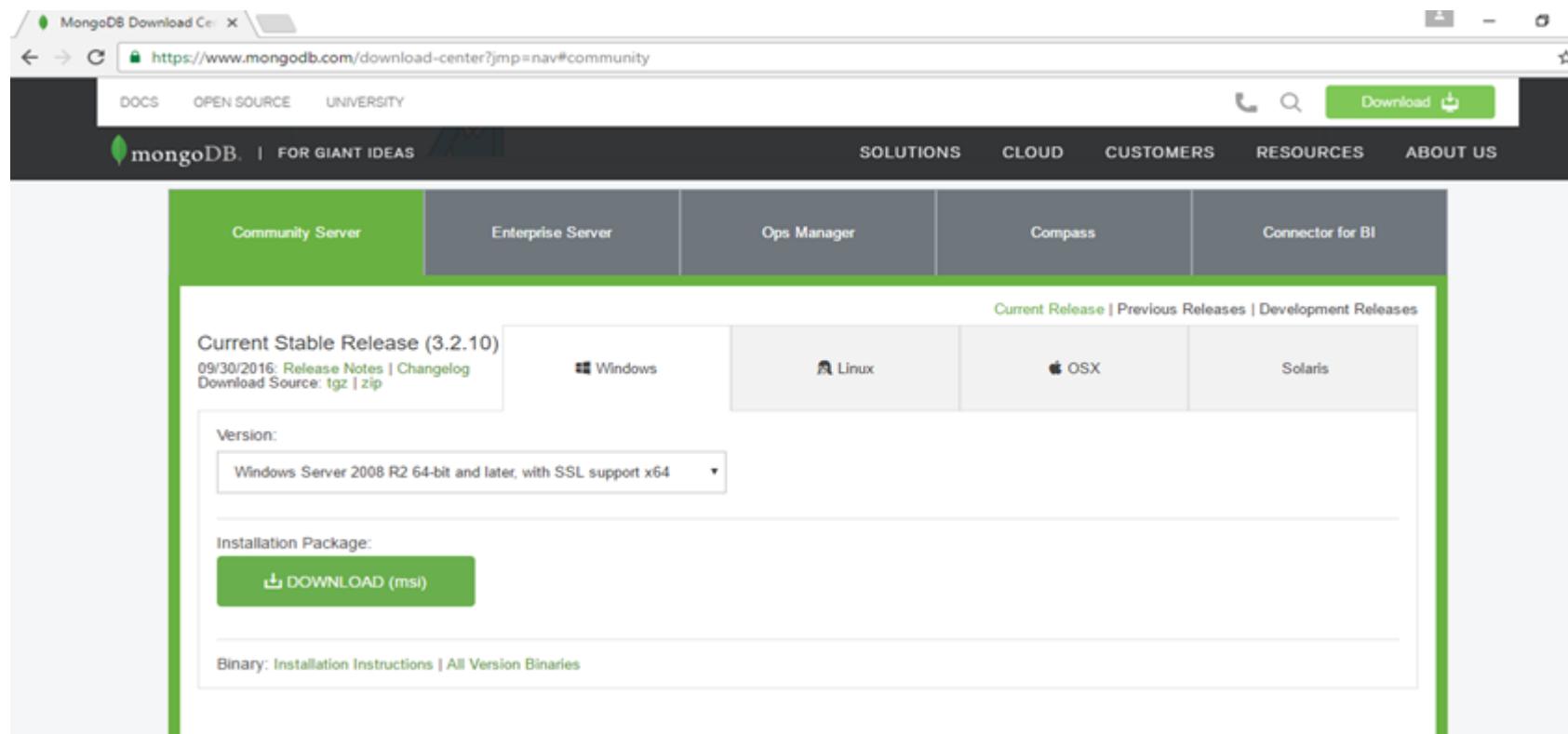
- Go to <https://www.mongodb.org/> and click on the ‘Download MongoDB’ button to download Mongo DB



Click on the download button for downloading MongoDB

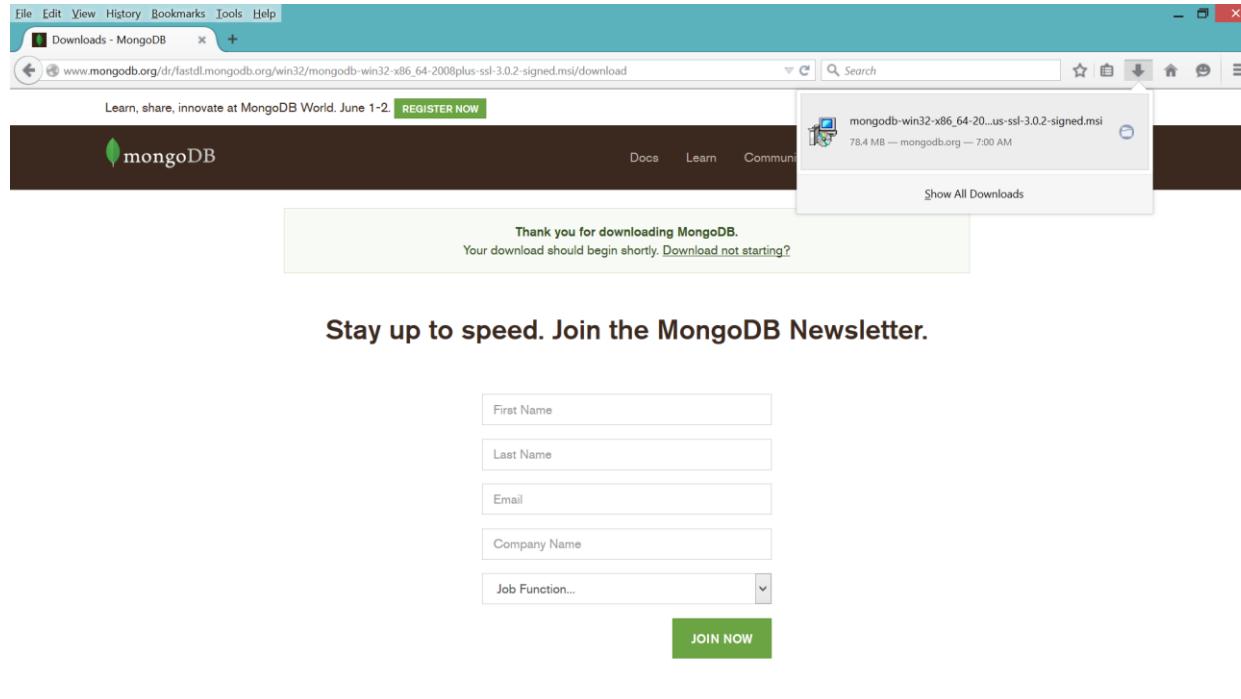
2. Mongo DB - Download

- Select the operating system as Windows and the version as ‘Windows Server 64 - bit 2008 R2 64 bit and later with SSL support x64’
- Click on the ‘Download (MSI)’ to begin the download



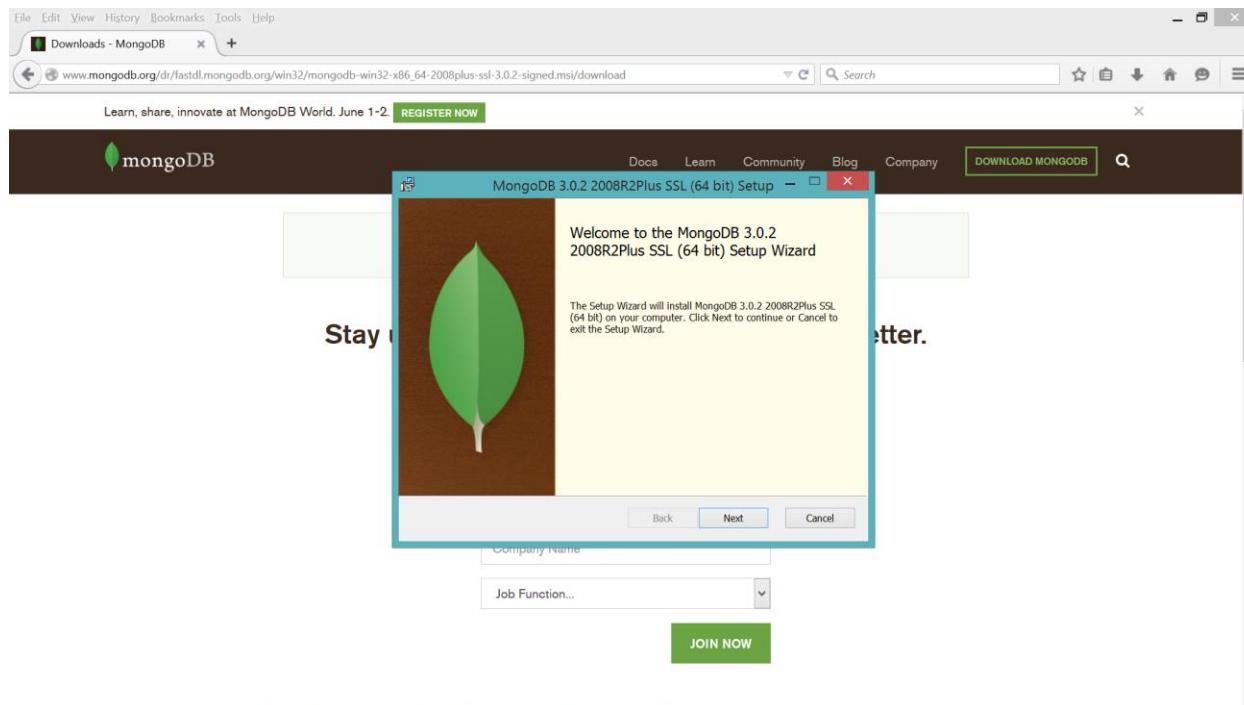
2. Mongo DB - Download

- Please note the location of the folder where MongoDB is being downloaded



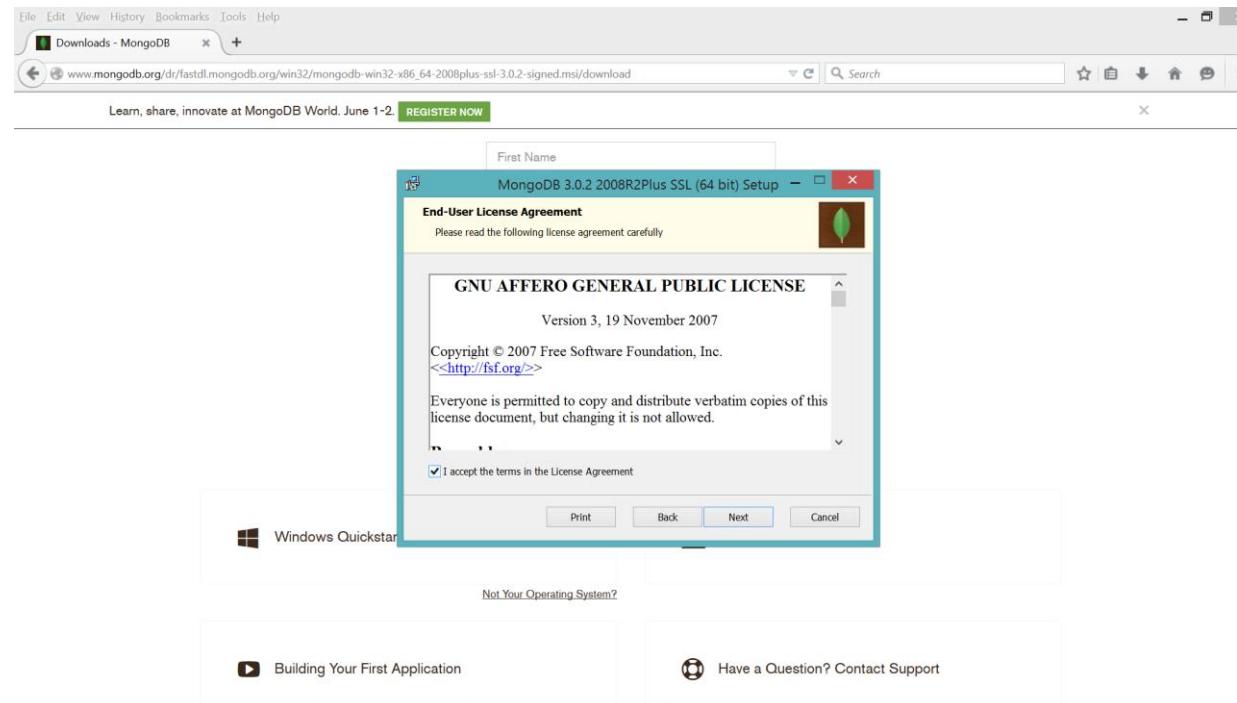
3. Mongo DB - Setup

- To start the installation, go to the folder where MongoDB has been downloaded and double click on the installation file
- This should open the MongoDB setup wizard as shown below
- Click on ‘Next’ to proceed with the installation



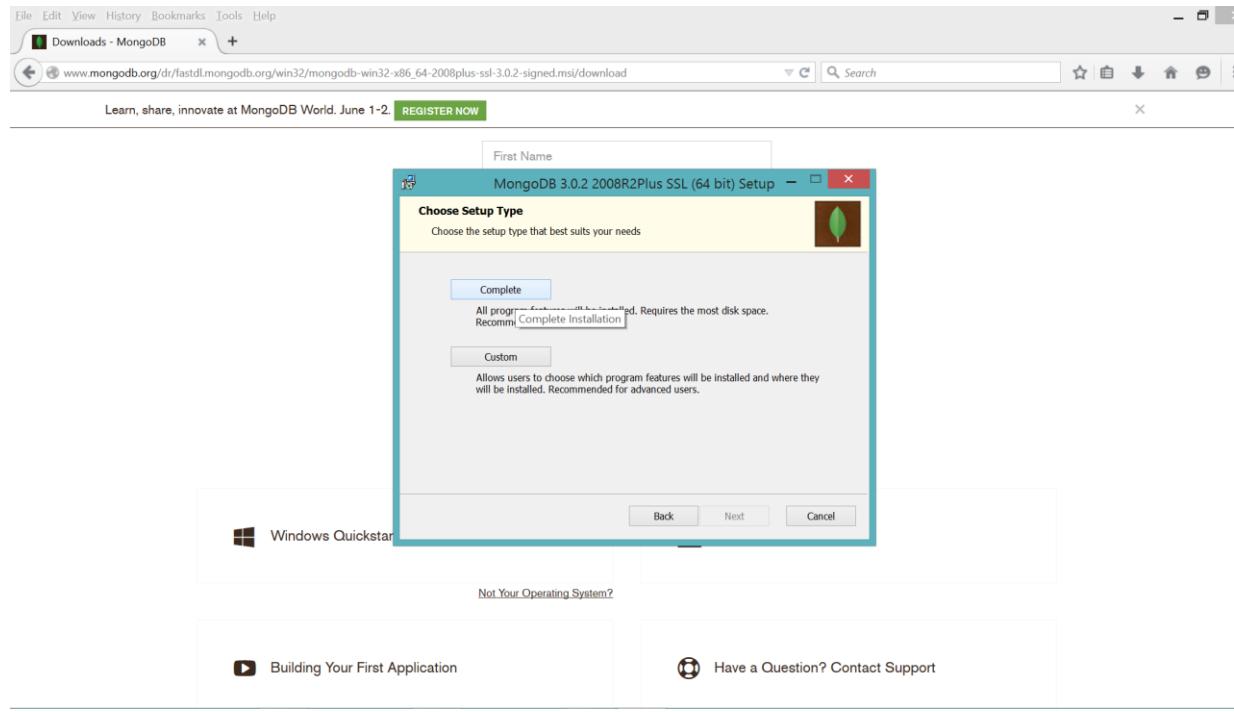
3. Mongo DB - Setup

- Accept the license agreement and proceed by clicking on ‘Next’



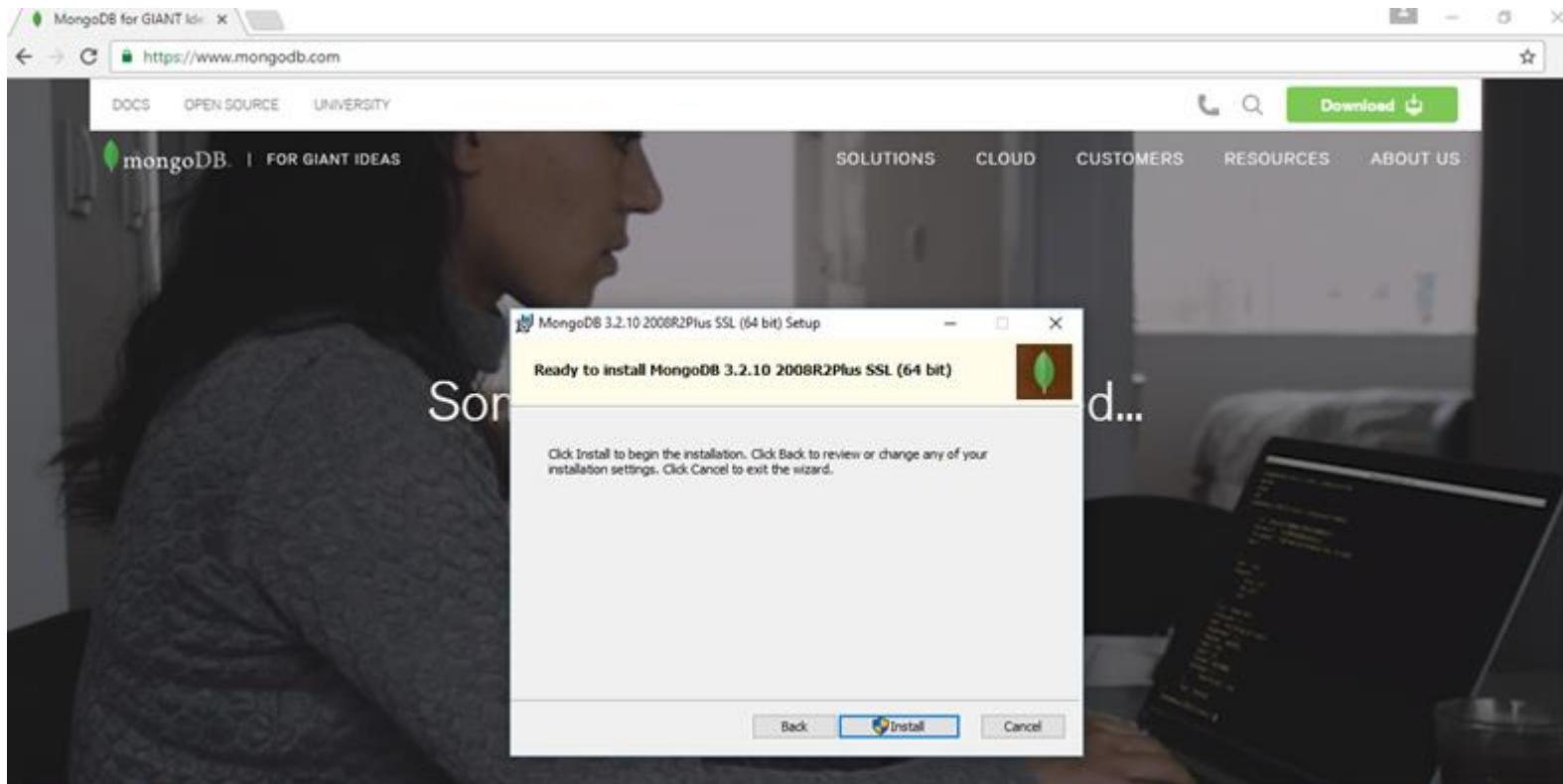
3. Mongo DB - Setup

- Select the setup type as ‘Complete’ and then click on ‘Next’
- Since we are at the beginners level with MongoDB, hence, it is recommended that you select the setup type as ‘Complete’



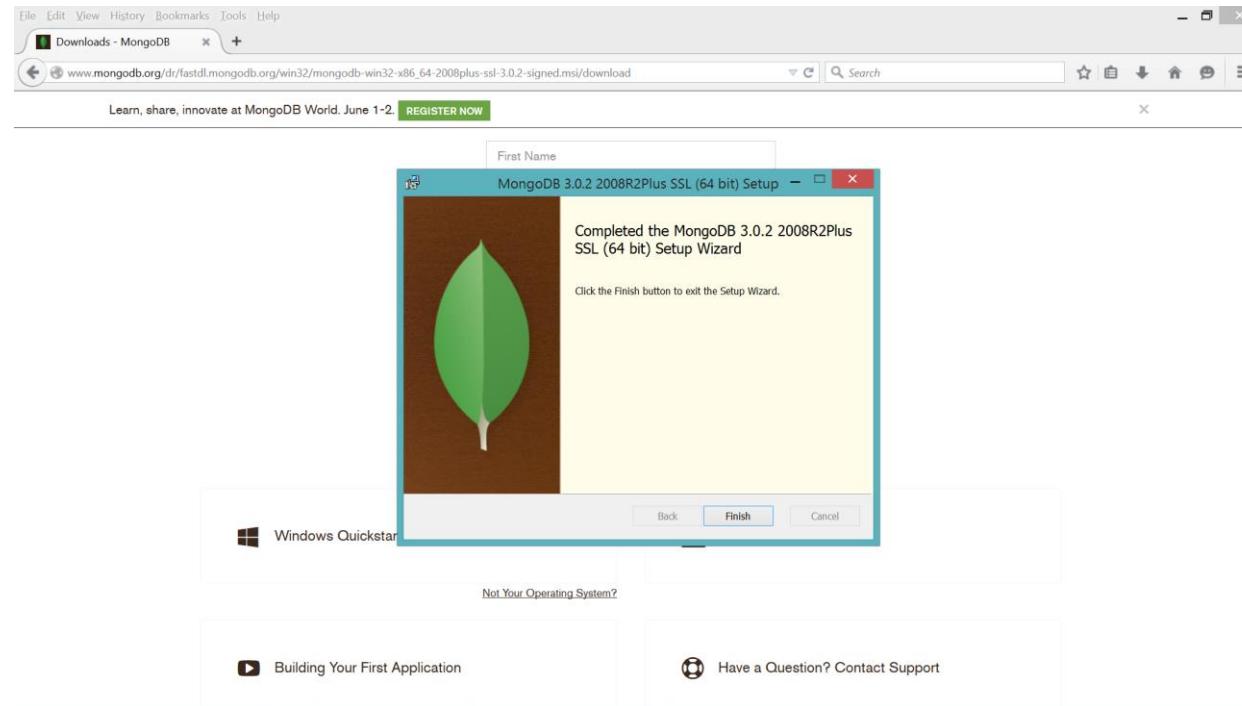
3. Mongo DB - Setup

- Click on install to install Mongo database



3. Mongo DB - Setup

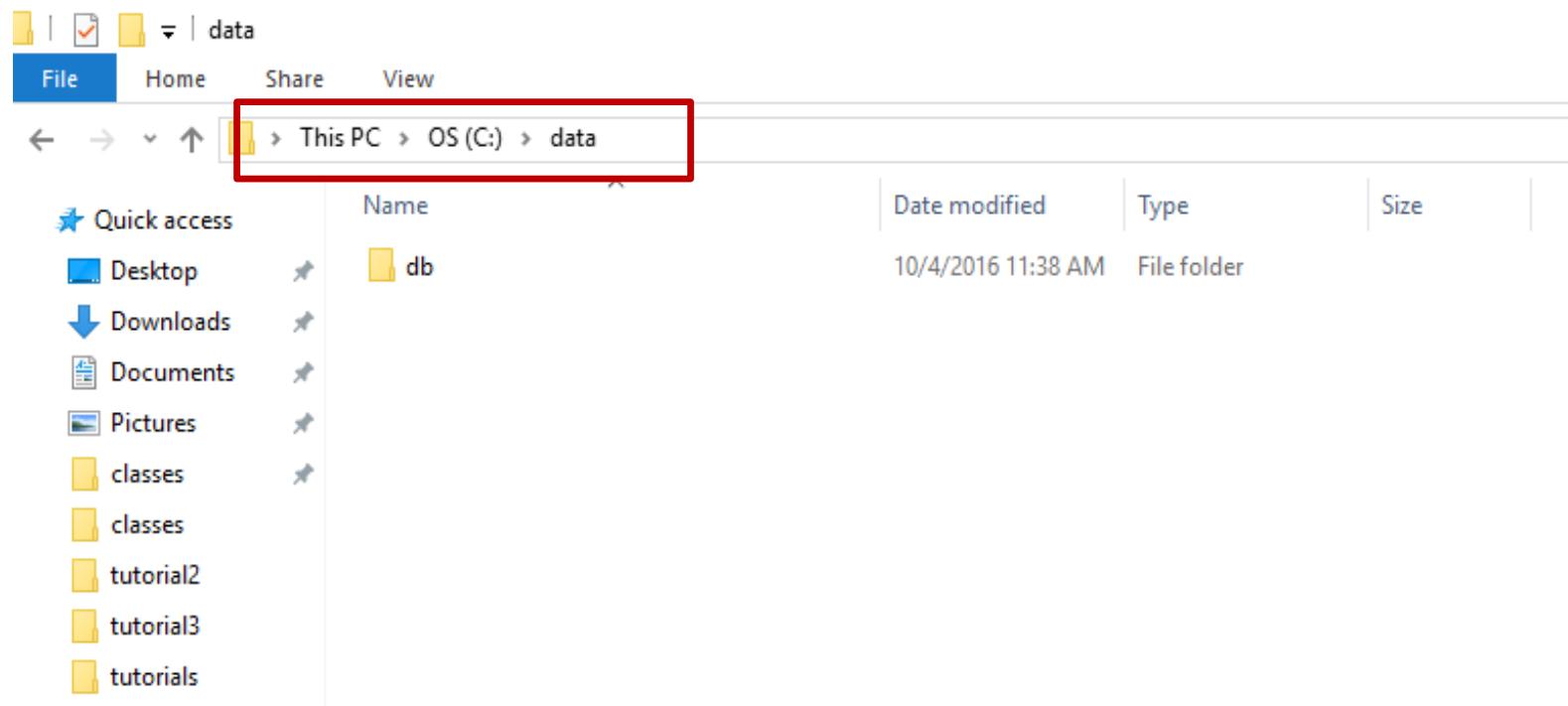
- Once the installation is complete, click on ‘Finish’ to complete the process



4. Mongo DB – Startup Instructions

Create a data and db folder inside C drive as c:\data\db

Make sure that you directly create data\db folder inside c drive only



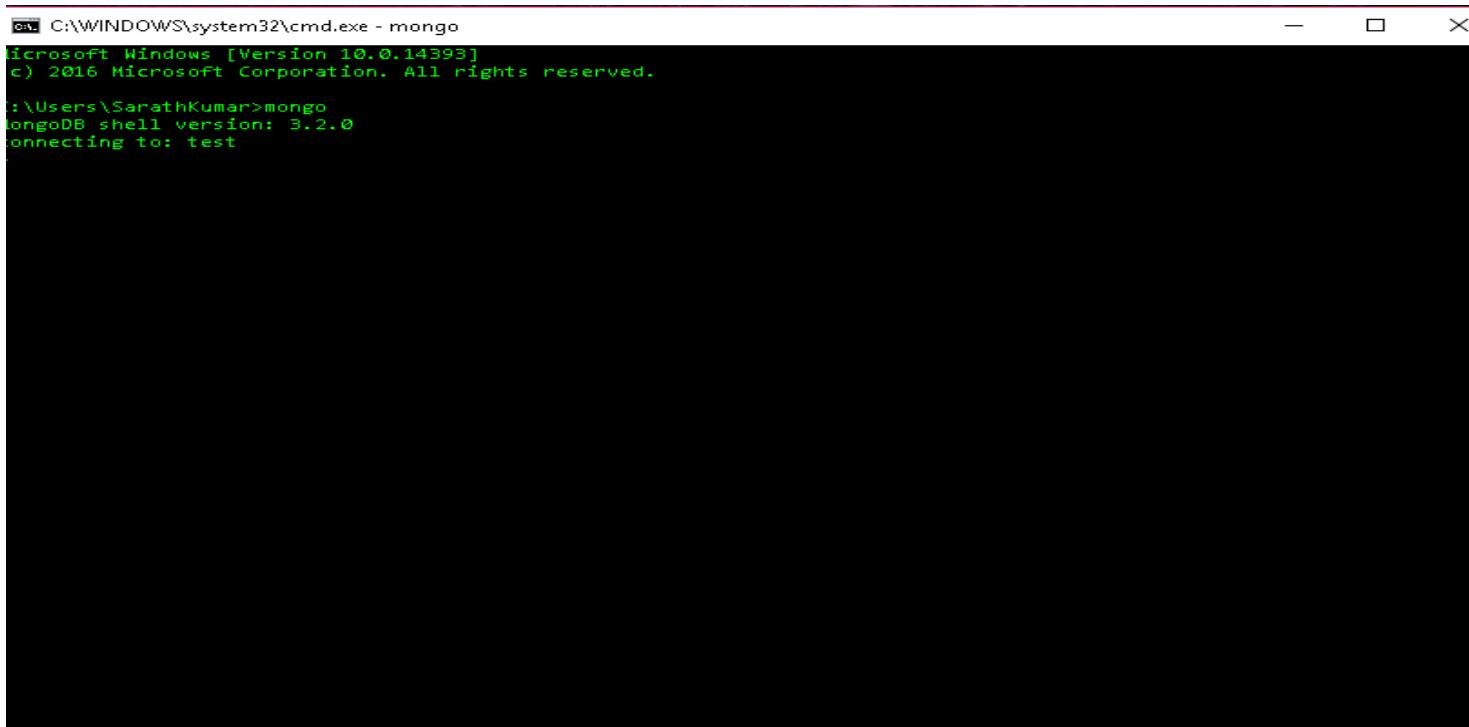
4. Mongo DB – Startup Instructions

- To start Mongo DB, open command prompt and enter the command ‘mongod’ .
- Mongo DB is usually installed under C:/Program Files/MongoDB
- To start Mongo DB server process , locate the “mongod.exe” stored in C:\Program Files\MongoDB\Server\3.2\bin and click it.

```
c:\Program Files\MongoDB\Server\3.0\bin>mongod
2015-05-01T23:23:44.350-0500 I JOURNAL [initandlisten] journal dir=c:\data\db\journal
2015-05-01T23:23:44.351-0500 I JOURNAL [initandlisten] recover : no journal files present, no recovery needed
2015-05-01T23:23:44.368-0500 I JOURNAL [durability] Durability thread started
2015-05-01T23:23:44.368-0500 I JOURNAL [journal writer] Journal writer thread started
2015-05-01T23:23:44.379-0500 I CONTROL [initandlisten] MongoDB starting : pid=7296 port=27017 dbpath=c:\data\db\ 64-bit
st=Lenovo-PC
2015-05-01T23:23:44.379-0500 I CONTROL [initandlisten] targetMinOS: Windows 7/Windows Server 2008 R2
2015-05-01T23:23:44.380-0500 I CONTROL [initandlisten] db version v3.0.1
2015-05-01T23:23:44.380-0500 I CONTROL [initandlisten] git version: 534b5a3f9d10f00cd27737fbcd951032248b5952
2015-05-01T23:23:44.380-0500 I CONTROL [initandlisten] OpenSSL version: OpenSSL 1.0.1j-fips 15 Oct 2014
2015-05-01T23:23:44.381-0500 I CONTROL [initandlisten] build info: windows sys.getwindowsversion(major=6, minor=1, bu
601, platform=2, service_pack='Service Pack 1') BOOST_LIB_VERSION=1_49
2015-05-01T23:23:44.381-0500 I CONTROL [initandlisten] allocator: system
2015-05-01T23:23:44.381-0500 I CONTROL [initandlisten] options: {}
2015-05-01T23:23:44.396-0500 I NETWORK [initandlisten] waiting for connections on port 27017
```

4. Mongo DB – Startup Instructions

- To start Mongo shell, open command prompt and enter the command ‘mongo’
- Mongo DB is usually installed under C:/Program Files/MongoDB
- To start Mongo shell, locate the “mongo.exe” stored in C:\Program Files\MongoDB\Server\3.2\bin and click it.



A screenshot of a Windows Command Prompt window titled 'cmd' located at 'C:\WINDOWS\system32\cmd.exe - mongo'. The window shows the following text output:

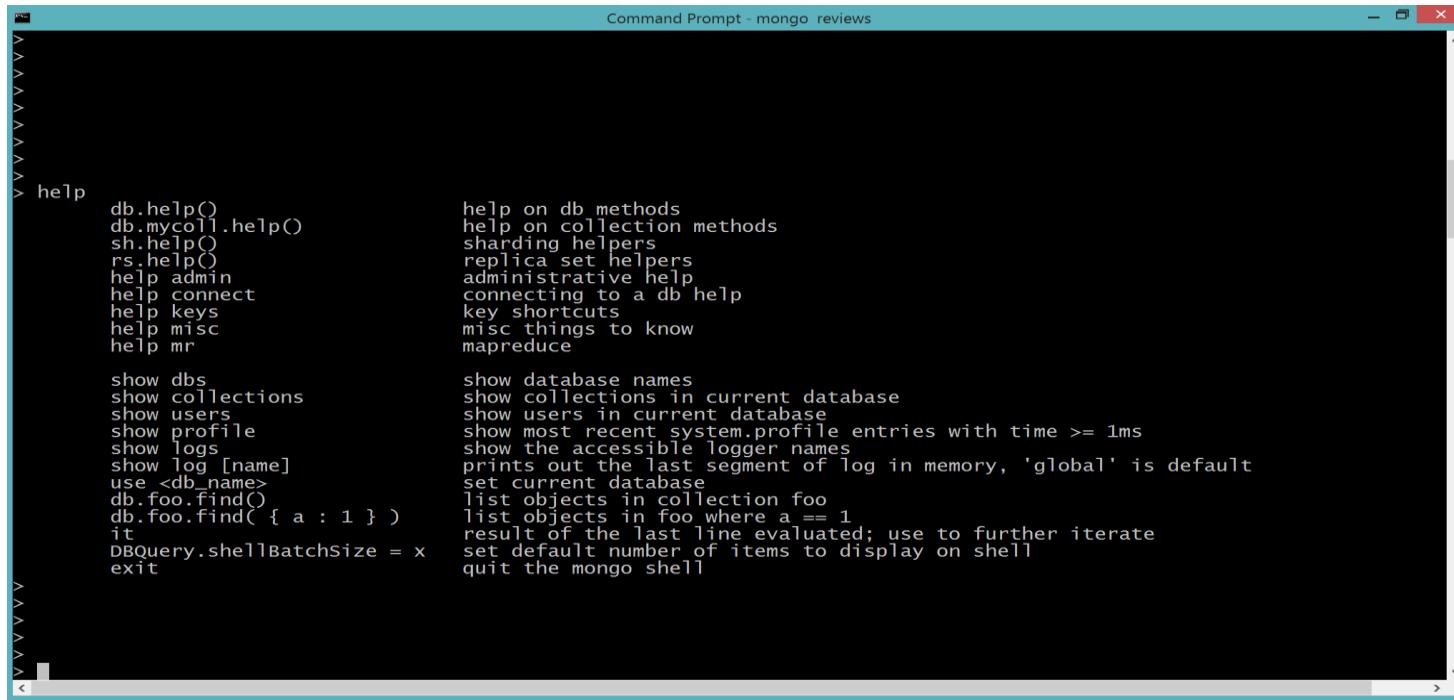
```
C:\WINDOWS\system32\cmd.exe - mongo
Microsoft Windows [Version 10.0.14393]
© 2016 Microsoft Corporation. All rights reserved.

::\Users\SarathKumar>mongo
MongoDB shell version: 3.2.0
Connecting to: test
```



4. Mongo DB – Help command & Documentation

- The ‘Help’ command is a very handy command and can be used to check various commands available with Mongo DB
- To learn more on MongoDB Commands , visit: <https://docs.mongodb.com/manual/reference/mongo-shell/>



```
Command Prompt - mongo reviews
>
>
>
>
>
>
> help
  db.help()
  db.mycoll.help()
  sh.help()
  rs.help()
  help admin
  help connect
  help keys
  help misc
  help mr

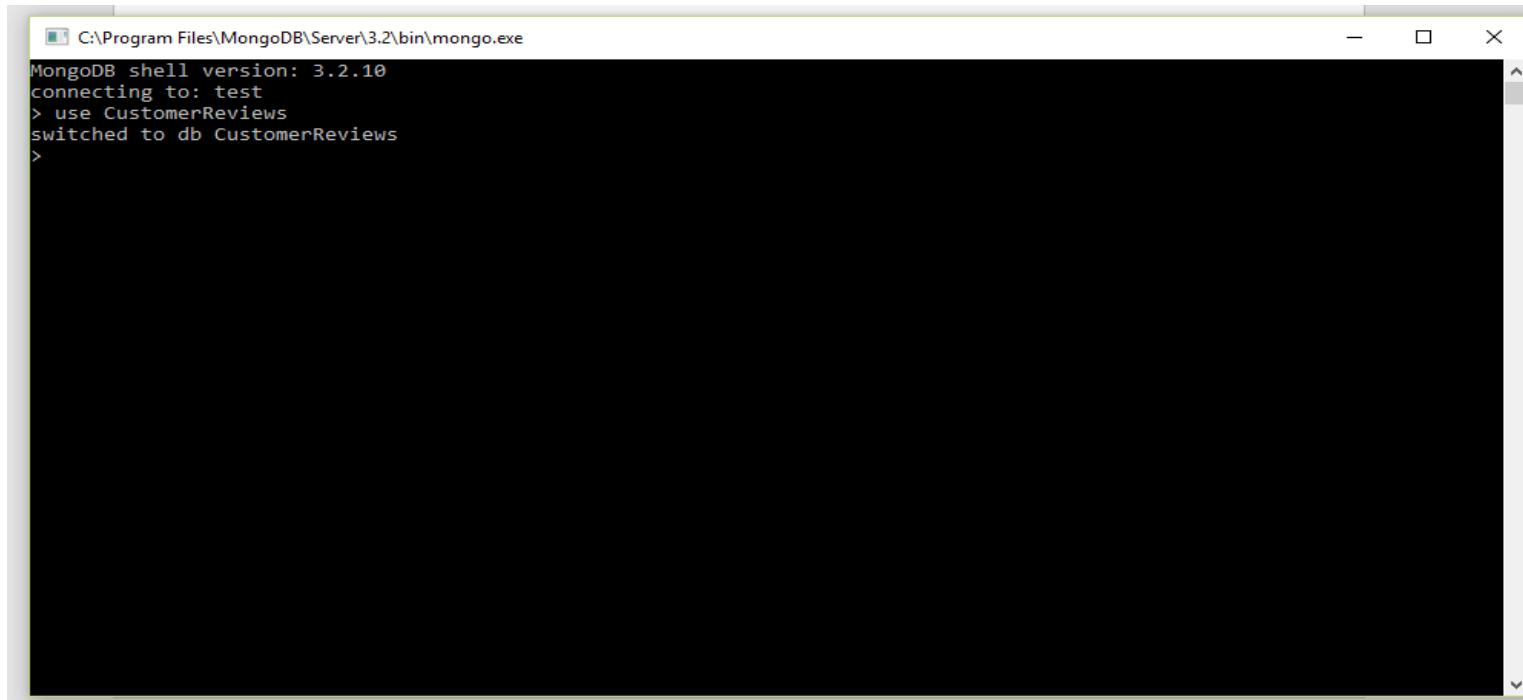
  show dbs
  show collections
  show users
  show profile
  show logs
  show log [name]
  use <db_name>
  db.foo.find()
  db.foo.find( { a : 1 } )
  it
  DBQuery.shellBatchSize = x
  exit

  help on db methods
  help on collection methods
  sharding helpers
  replica set helpers
  administrative help
  connecting to a db help
  key shortcuts
  misc things to know
  mapreduce

  show database names
  show collections in current database
  show users in current database
  show most recent system.profile entries with time >= 1ms
  show the accessible logger names
  prints out the last segment of log in memory, 'global' is default
  set current database
  list objects in collection foo
  list objects in foo where a == 1
  result of the last line evaluated; use to further iterate
  set default number of items to display on shell
  quit the mongo shell
```

4. Mongo DB – Use a database

- In order to use a database, you must select it first
- To select a database along with the startup, use the command ‘use databasename’
- Example, to select the ‘CustomerReviews’ database, the command is ‘use CustomerReviews’
- You can then check the db you are in by typing db command



The screenshot shows a terminal window titled 'C:\Program Files\MongoDB\Server\3.2\bin\mongo.exe'. The window displays the MongoDB shell version 3.2.10 and a connection to the 'test' database. A command is being typed: 'use CustomerReviews'. After the command is run, the message 'switched to db CustomerReviews' is displayed, indicating that the database has been successfully selected.

```
C:\Program Files\MongoDB\Server\3.2\bin\mongo.exe
MongoDB shell version: 3.2.10
connecting to: test
> use CustomerReviews
switched to db CustomerReviews
>
```



4. Mongo DB – Create Collections

- You can manually create collection or automatic by running your java program
- To create a collection manually type db.createCollection(collectionname)



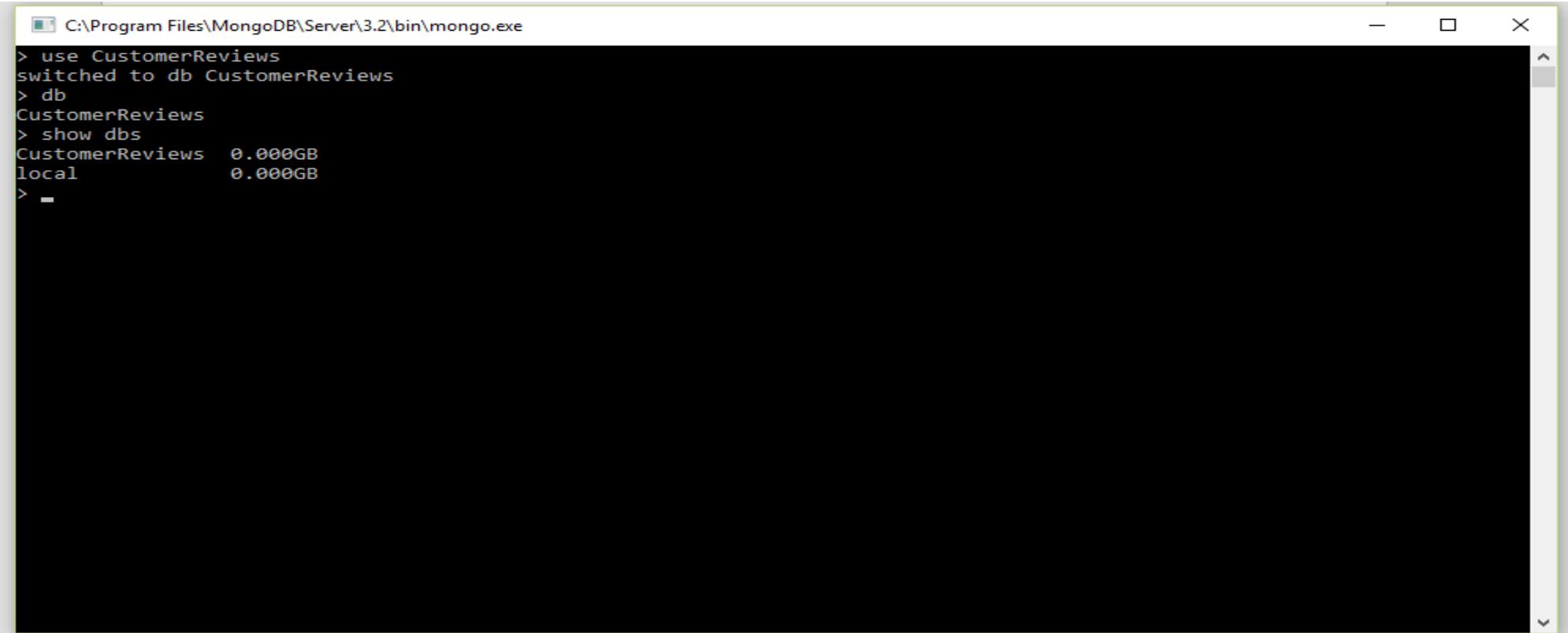
The screenshot shows a terminal window titled "C:\Program Files\MongoDB\Server\3.2\bin\mongo.exe". The window contains the following command and its response:

```
> db.createCollection("myReviews")
{ "ok" : 1 }
>
```



4. Mongo DB – Display list of available databases

- To check the databases that exist, use the command ‘show dbs’
- This will show the list of available databases



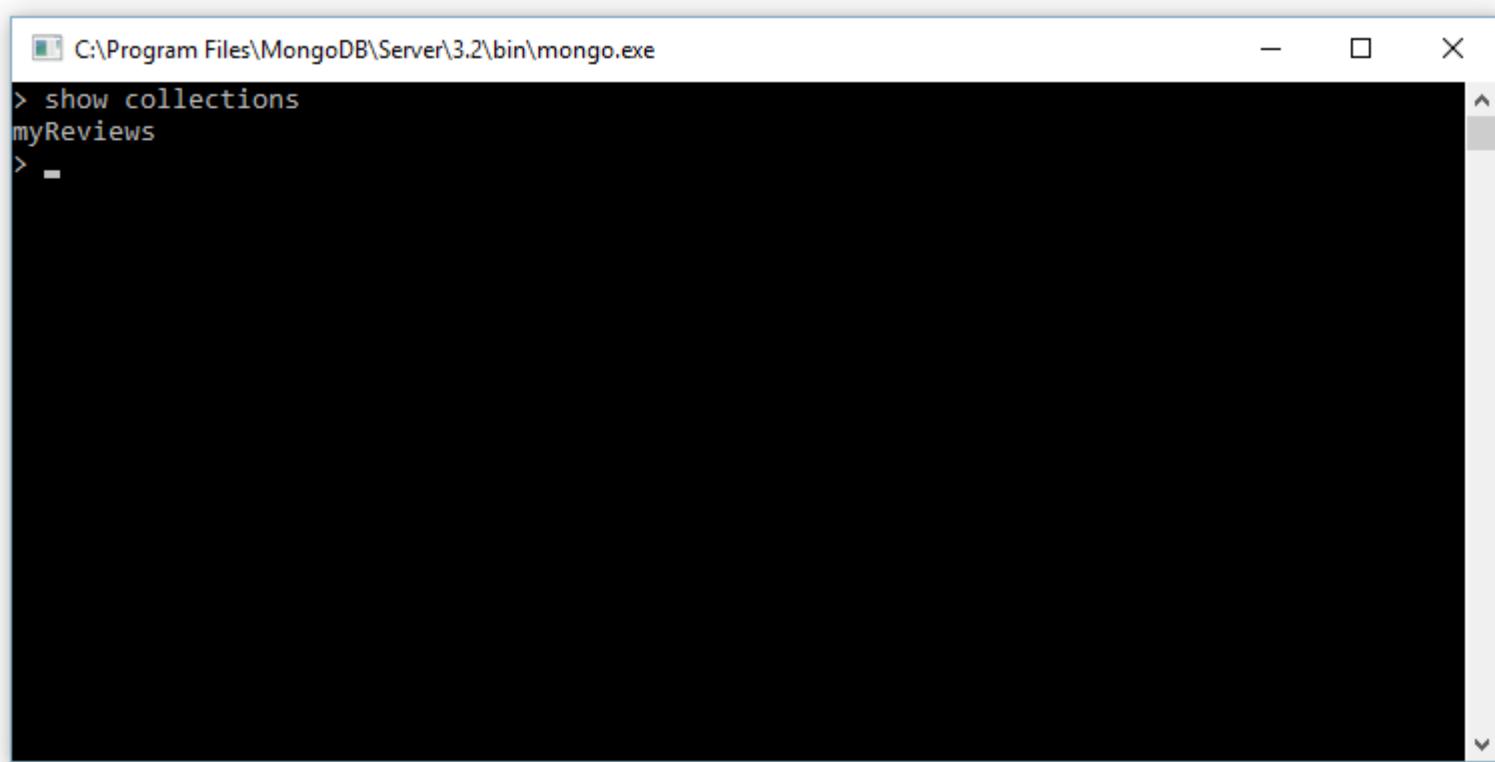
A screenshot of a terminal window titled "C:\Program Files\MongoDB\Server\3.2\bin\mongo.exe". The window contains the following text:

```
> use CustomerReviews
switched to db CustomerReviews
> db
CustomerReviews
> show dbs
CustomerReviews  0.000GB
local            0.000GB
> -
```



4. Mongo DB – Show collections

- Use the command ‘ show collections’ to view the list of available collections in the selected database



A screenshot of a terminal window titled "C:\Program Files\MongoDB\Server\3.2\bin\mongo.exe". The window contains the following text:

```
> show collections
myReviews
> -
```



4. Mongo DB – Query data

- In order to query data, use the command ‘db.COLLECTION_NAME.find()’
- The find() queries the data available in the selected collection.
- Example, to query the ‘myReviews’ collection we use the command ‘db.myReviews.find()’



The screenshot shows a terminal window titled 'C:\Program Files\MongoDB\Server\3.2\bin\mongo.exe'. The window contains the following MongoDB shell session:

```
>
>
> db.myReviews.find()
{ "_id" : ObjectId("57f3e06441e5be1e543b3e0d"), "title" : "myReviews", "use
rName" : "customer1", "productName" : "xbox360", "productType" : "consoles"
, "productMaker" : "microsoft", "reviewRating" : "5", "reviewDate" : "2016-
09-13", "reviewText" : " Amazing Game to Play" }
> -
```



5. Compile and run

- You need to include all the JAR files before you compile your Java program which imports external libraries (Such as Servlets, MongoDB in this tutorial)
- To download MongoDB Connector jar go to http://mongodb.github.io/mongo-java-driver/?_ga=1.142913397.1760375742.1470875192
- To see the documentation for Java MongoDB Driver go to <https://docs.mongodb.com/ecosystem/drivers/java/>
- To include these external JAR files, make the changes to the ‘CLASSPATH’ variable in your ‘env-setup-for-tomcat_backup.bat’ file
- Locate and copy the location of the JAR files on your computer and edit the ‘CLASSPATH’ variable accordingly
- **NOTE:** Make sure you have the necessary JAR files on your computer



5. Compile and run

- Go to <https://docs.mongodb.com/ecosystem/drivers/java/> to see documentation for Java MongoDB Driver .

The screenshot shows a browser window displaying the MongoDB Documentation website at <https://docs.mongodb.com/ecosystem/drivers/java/>. The page title is "Java MongoDB Driver". The left sidebar has a "MongoDB Ecosystem" heading and a "MongoDB Drivers" section with links for C Driver, C++ Driver, C# and .NET Driver, Java Driver (which is highlighted), Node.js Driver, Perl Driver, PHP Driver, Python Driver, Ruby Driver, Scala Driver, Community Supported Drivers, Driver Syntax Table, and Driver Compatibility. The main content area has a "MongoDB Drivers > Java MongoDB Driver" breadcrumb and a "Java MongoDB Driver" title. Below it is a "On this page" section with links to Driver Features, Download/Upgrade, Java Driver Compatibility, Third Party Frameworks and Libraries, and Additional Resources. A note on the right says "Does your database tell you when to scale?" with an illustration of a database cylinder with a warning sign. At the bottom, it says "Starting with the 3.0 release, the official MongoDB Java Driver provides both synchronous and asynchronous interaction with MongoDB. For the official MongoDB Java Driver reference, see:" followed by links to MongoDB Java Driver Documentation and MongoDB Java Driver API Documentation.

5. Compile and run

- Go to http://mongodb.github.io/mongo-java-driver/?_ga=1.142913397.1760375742.1470875192 to Download jar File.
- Select mongo-java-driver and version 3.2.2 and click Download Button.

The screenshot shows the MongoDB Java Driver Quick Start page. At the top, there's a navigation bar with a back arrow, forward arrow, and a refresh icon. The URL in the address bar is mongodb.github.io/mongo-java-driver/?_ga=1.77379222.2050575374.1473376750. Below the address bar, the MongoDB logo is displayed. The main content area has a dark header with the text "Quick Start". The text below the header reads: "The recommended way to get started using one of the drivers in your project is with a dependency management system. Select the driver, version and dependency management system below and the snippet can be copied and pasted into your build." Another text block below says: "Alternatively, head over to our documentation to learn more about getting started with Java and MongoDB." At the bottom of the page, there's a "DOWNLOAD" button in a dark box, followed by dropdown menus for "mongo-java-driver" (set to "3.2.2") and "Maven". To the right of these controls is a code snippet in XML:

```
<dependencies>
  <dependency>
    <groupId>org.mongodb</groupId>
    <artifactId>mongo-java-driver</artifactId>
    <version>3.2.2</version>
  </dependency>
</dependencies>
```

A purple arrow points from the text "Click on the download button for downloading Mongo java Driver" to the "DOWNLOAD" button.

Click on the download button for downloading Mongo java Driver

5. Compile and run

- Download mongo-java-driver-3.2.2.jar

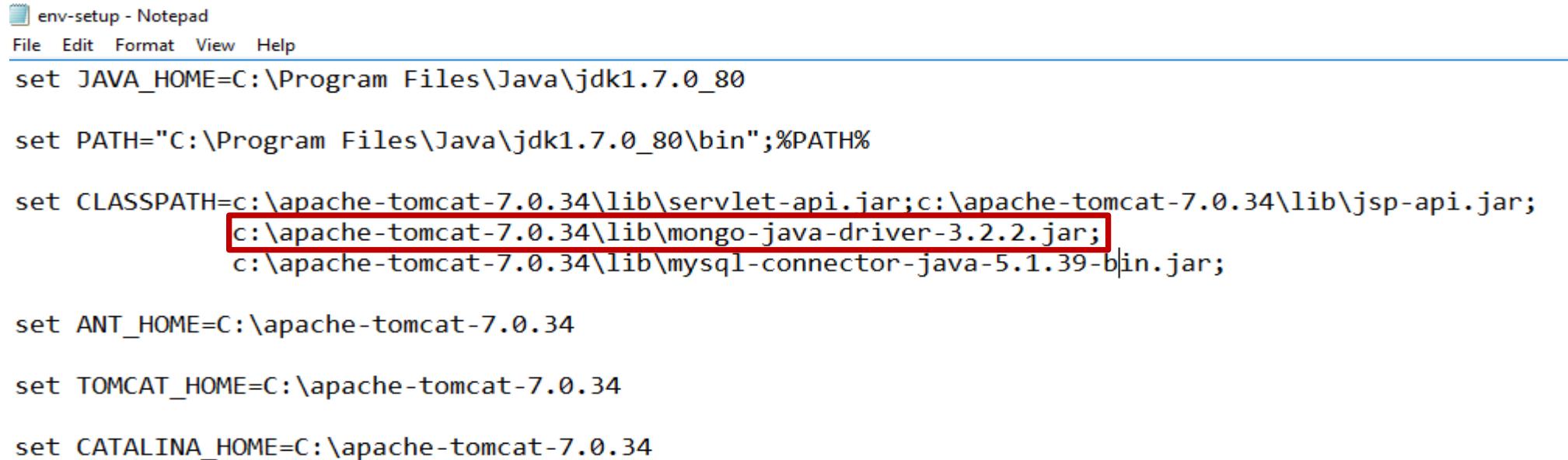
Parent Directory			
mongo-java-driver-3.2.2-javadoc.jar	Mon Feb 15 16:20:34 UTC 2016	2558850	
mongo-java-driver-3.2.2-javadoc.jar.asc	Mon Feb 15 16:20:35 UTC 2016	475	
mongo-java-driver-3.2.2-javadoc.jar.asc.md5	Mon Feb 15 16:20:35 UTC 2016	32	
mongo-java-driver-3.2.2-javadoc.jar.asc.sha1	Mon Feb 15 16:20:35 UTC 2016	40	
mongo-java-driver-3.2.2-javadoc.jar.md5	Mon Feb 15 16:20:34 UTC 2016	32	
mongo-java-driver-3.2.2-javadoc.jar.sha1	Mon Feb 15 16:20:34 UTC 2016	40	
mongo-java-driver-3.2.2-sources.jar	Mon Feb 15 16:20:35 UTC 2016	1046583	
mongo-java-driver-3.2.2-sources.jar.asc	Mon Feb 15 16:20:34 UTC 2016	475	
mongo-java-driver-3.2.2-sources.jar.asc.md5	Mon Feb 15 16:20:34 UTC 2016	32	
mongo-java-driver-3.2.2-sources.jar.asc.sha1	Mon Feb 15 16:20:34 UTC 2016	40	
mongo-java-driver-3.2.2-sources.jar.md5	Mon Feb 15 16:20:35 UTC 2016	32	
mongo-java-driver-3.2.2-sources.jar.sha1	Mon Feb 15 16:20:35 UTC 2016	40	
mongo-java-driver-3.2.2.jar	Mon Feb 15 16:20:32 UTC 2016	1484724	
mongo-java-driver-3.2.2.jar.asc	Mon Feb 15 16:20:35 UTC 2016	475	
mongo-java-driver-3.2.2.jar.asc.md5	Mon Feb 15 16:20:35 UTC 2016	32	

Click on the link for
downloading Mongo java
Driver



5. Compile and run

- Here is the snapshot of my ‘env-setup-for-tomcat_backup.bat’
- The location of the JAR files highlighted will differ based on where they are present on your computer
- Please make sure you do the changes accordingly



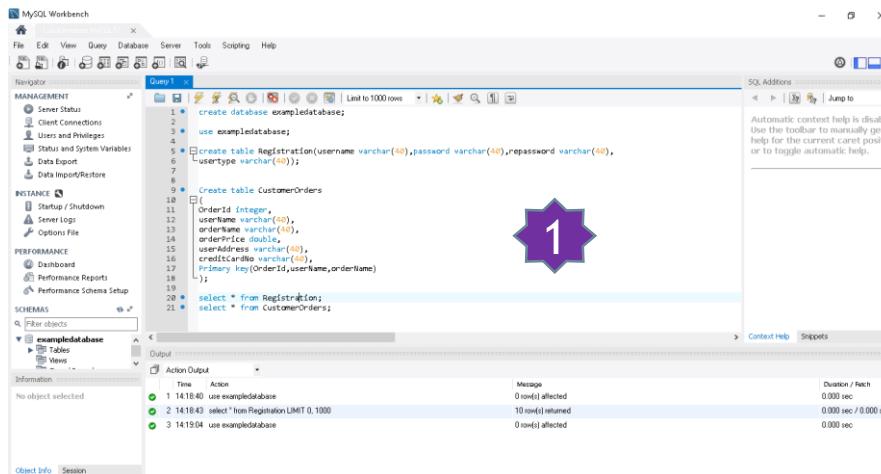
The screenshot shows a Notepad window with the title 'env-setup - Notepad'. The menu bar includes File, Edit, Format, View, and Help. The content of the file is a batch script for setting environment variables:

```
set JAVA_HOME=C:\Program Files\Java\jdk1.7.0_80
set PATH="C:\Program Files\Java\jdk1.7.0_80\bin";%PATH%
set CLASSPATH=c:\apache-tomcat-7.0.34\lib\servlet-api.jar;c:\apache-tomcat-7.0.34\lib\jsp-api.jar;
      c:\apache-tomcat-7.0.34\lib\mongo-java-driver-3.2.2.jar;
      c:\apache-tomcat-7.0.34\lib\mysql-connector-java-5.1.39-bin.jar;
set ANT_HOME=C:\apache-tomcat-7.0.34
set TOMCAT_HOME=C:\apache-tomcat-7.0.34
set CATALINA_HOME=C:\apache-tomcat-7.0.34
```

The lines for setting CLASSPATH are highlighted with a red rectangular box, specifically the ones containing 'c:\apache-tomcat-7.0.34\lib\mongo-java-driver-3.2.2.jar;' and 'c:\apache-tomcat-7.0.34\lib\mysql-connector-java-5.1.39-bin.jar;'. The rest of the script is standard Windows batch syntax for setting system environment variables.

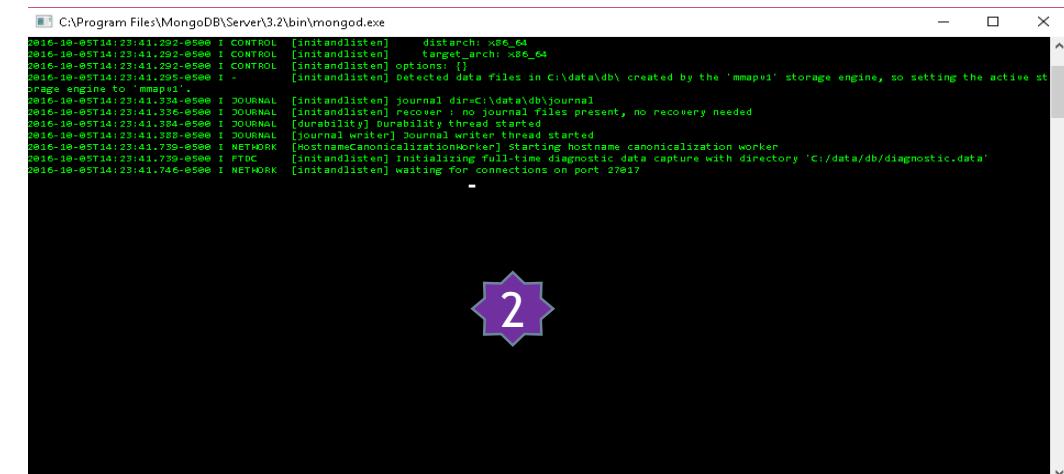
Things to Remember Before Running your Application in localhost:

- Check MySQL Server is up and Running or else start the MySQL Server .
- Check MongoDB Server is up and Running or else start the MongoDB Server .
- Check Apache Tomcat is up and Running or else start the Apache Tomcat .



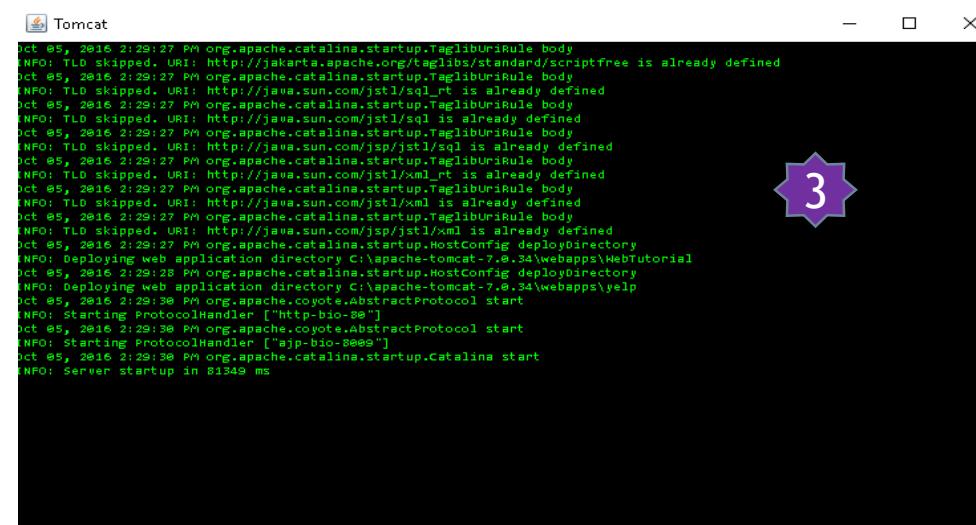
MySQL Workbench interface showing the creation of a database and tables. A purple starburst labeled '1' highlights the SQL editor area where the following code is shown:

```
1 create database exampledatabase;
2 use exampledatabase;
3 create table Registration(username varchar(40),password varchar(40),repassword varchar(40),
4 userutype varchar(20));
5 create table CustomerOrders
6     OrderId integer,
7     username varchar(40),
8     ordername varchar(40),
9     orderdetails varchar(40),
10    userAddress varchar(40),
11    creditCardNo varchar(40),
12    Primary key(OrderId,username,ordername)
13 );
14 select * from Registration;
15 select * from CustomerOrders;
```



MongoDB command line interface showing the startup logs for mongod.exe. A purple starburst labeled '2' highlights the log output area:

```
2016-10-05T14:23:41.295+0500 I CONTROL [initandlisten] distarch: x86_64
2016-10-05T14:23:41.295+0500 I CONTROL [initandlisten] targetArch: x86_64
2016-10-05T14:23:41.295+0500 I CONTROL [initandlisten] options: {}
2016-10-05T14:23:41.295+0500 I [initandlisten] Detected data files in C:\data\db\ created by the 'mmapv1' storage engine, so setting the active st
orage engine to 'mmapv1'.
2016-10-05T14:23:41.394+0500 I JOURNAL [initandlisten] Journal didn't have any journal files present, no recovery needed
2016-10-05T14:23:41.394+0500 I JOURNAL [initandlisten] journal files are now present, starting recovery
2016-10-05T14:23:41.394+0500 I JOURNAL [durability] Durability thread started
2016-10-05T14:23:41.739+0500 I JOURNAL [journal writer] Journal writer thread started
2016-10-05T14:23:41.739+0500 I NETWORK [HostnameCanonicalizationWorker] Starting hostname canonicalization worker
2016-10-05T14:23:41.746+0500 I FTDC [initandlisten] Initializing full-time diagnostic data capture with directory 'C:/data/db/diagnostic.data'
2016-10-05T14:23:41.746+0500 I NETWORK [initandlisten] waiting for connections on port 27017
```



Apache Tomcat terminal window showing the startup logs. A purple starburst labeled '3' highlights the log output area:

```
Oct 05, 2016 2:29:27 PM org.apache.catalina.startup.TaglibUriRule body
INFO: TLD skipped. URI: http://jakarta.apache.org/taglibs/standard/scriptfree is already defined
Oct 05, 2016 2:29:27 PM org.apache.catalina.startup.TaglibUriRule body
INFO: TLD skipped. URI: http://java.sun.com/jstl/sql_rt is already defined
Oct 05, 2016 2:29:27 PM org.apache.catalina.startup.TaglibUriRule body
INFO: TLD skipped. URI: http://java.sun.com/jstl/sql is already defined
Oct 05, 2016 2:29:27 PM org.apache.catalina.startup.TaglibUriRule body
INFO: TLD skipped. URI: http://java.sun.com/jsp/jstl/sql is already defined
Oct 05, 2016 2:29:27 PM org.apache.catalina.startup.TaglibUriRule body
INFO: TLD skipped. URI: http://java.sun.com/jstl/xml_rt is already defined
Oct 05, 2016 2:29:27 PM org.apache.catalina.startup.TaglibUriRule body
INFO: TLD skipped. URI: http://java.sun.com/jstl/xml is already defined
Oct 05, 2016 2:29:27 PM org.apache.catalina.startup.HostConfig deployDirectory
INFO: Deploying web application directory C:\Apache-Tomcat-7.0.34\webapps\HelloTutorial
Oct 05, 2016 2:29:28 PM org.apache.catalina.startup.HostConfig deployDirectory
INFO: Deploying web application directory C:\Apache-Tomcat-7.0.34\webapps\HelloTutorial
Oct 05, 2016 2:29:30 PM org.apache.coyote.AbstractProtocol start
INFO: Starting ProtocolHandler ["http-bio-80"]
Oct 05, 2016 2:29:30 PM org.apache.coyote.AbstractProtocol start
INFO: Starting ProtocolHandler ["ajp-bio-8009"]
Oct 05, 2016 2:29:30 PM org.apache.catalina.startup.Catalina start
INFO: Server startup in 81349 ms
```

6. Example – Write Review:

To write a review for the product, click on ‘Write Review’ button on the products page

The screenshot shows the Game Speed website interface. At the top, there is a navigation bar with links for Home, Consoles, Games, Tablets, Trending, View Order, Login, and Cart(0). On the left, there are three yellow sidebar boxes: 'Consoles' (listing Microsoft, Sony, and Nintendo), 'Games' (listing Electronic Arts, Activision, and Take-Two Interactive), and 'Tablets'. The main content area features two product cards. The first card is for the 'Microsoft Consoles' category, specifically the 'Xbox One' model, which is priced at \$399.99. It includes an image of the console and controller, a 'Buy Now' button, a 'WriteReview' button (which is highlighted with a red box), and a 'ViewReview' button. The second card is for the 'xbox360' model, also priced at \$399.99, featuring an image of the console and controller, a 'Buy Now' button, a 'WriteReview' button (also highlighted with a red box), and a 'ViewReview' button.



6. Example – Write Review:

On clicking the WriteReview Button from products page user will be directed to WriteReview webpage where he can give review for product.

Click the SubmitReview button to store the review in Mongo database

The screenshot shows the Game Speed website interface. At the top, there is a navigation bar with links for Home, Consoles, Games, Tablets, Trending, ViewOrder, Hello,Qwerty, Account, Logout, and Cart(0). On the left side, there are three yellow sidebar boxes: 'Consoles' (listing Microsoft, Sony, Nintendo), 'Games' (listing Electronic Arts, Activision, Take-Two Interactive), and 'Tablets'. The main content area is titled 'Review' and contains a form with the following fields:
Product Name: xbox360
Product Type: consoles
Product Maker: microsoft
Review Rating: 2 (dropdown menu)
Review Date: 12/20/2017
Review Text: Nice game to play
A blue 'SubmitReview' button is located at the bottom right of the form.

6. Example – Write Review:

On clicking the SubmitReview button user will get response that reviews for product is stored in database

The screenshot shows the Game Speed website interface. At the top, there is a navigation bar with links for Home, Consoles, Games, Tablets, Trending, ViewOrder, Hello, Qwerty, Account, Logout, and Cart(0). On the left side, there are three yellow sidebar boxes: 'Consoles' (listing Microsoft, Sony, and Nintendo), 'Games' (listing Electronic Arts, Activision, and Take-Two Interactive), and 'Tablets'. In the center, there is a white box titled 'Review' containing the text 'Review for xbox360 Stored'. The overall background is dark blue.

6. Example – Write Review:

Submitting one more Review for product

The screenshot shows the Game Speed website interface. The header features a green game controller icon, the text "Game Speed" in large yellow letters, and "World's Largest Online Games Center" in smaller text. The navigation menu includes links for Home, Consoles, Games, Tablets, Trending, ViewOrder, Hello,Qwerty, Account, Logout, and Cart(0). On the left, there are three yellow sidebar boxes: "Consoles" listing Microsoft, Sony, and Nintendo; "Games" listing Electronic Arts, Activision, and Take-Two Interactive; and "Tablets". The main content area is titled "Review" and contains a form for submitting a review for a product named "xbox360". The form fields include Product Name (xbox360), Product Type (consoles), Product Maker (microsoft), Review Rating (set to 5), Review Date (12/20/2017), and a large text area for Review Text containing the text "Amazing game to play". A "SubmitReview" button is at the bottom of the form.

Search Product:
search here..

Home Consoles Games Tablets Trending ViewOrder Hello,Qwerty Account Logout Cart(0)

Consoles

- Microsoft
- Sony
- Nintendo

Games

- Electronic Arts
- Activision
- Take-Two Interactive

Tablets

Review

Product Name: xbox360

Product Type: consoles

Product Maker: microsoft

Review Rating: 5

Review Date: 12/20/2017

Review Text:
Amazing game to play

SubmitReview

6. Example – Write Review:

On clicking the SubmitReview button user will get response that reviews for product is stored in database

The screenshot shows the Game Speed website interface. At the top, there is a navigation bar with links for Home, Consoles, Games, Tablets, Trending, ViewOrder, Hello, Qwerty, Account, Logout, and Cart(0). On the left side, there are three yellow sidebar boxes: 'Consoles' (listing Microsoft, Sony, and Nintendo), 'Games' (listing Electronic Arts, Activision, and Take-Two Interactive), and 'Tablets'. In the center, there is a white box titled 'Review' containing the text 'Review for xbox360 Stored'. The overall background is dark blue.

6. Example – View Review:

You can view the review submitted by clicking on **ViewReview** button on products page

The screenshot shows the Game Speed website interface. At the top, there is a logo of a green video game controller and the text "Game Speed" followed by "World's Largest Online Games Center". Below the header, there is a navigation bar with links for Home, Consoles, Games, Tablets, and Trending. On the right side of the header, there is a search bar labeled "Search Product:" with the placeholder "search here..", and links for View Order, Login, and Cart(0). The main content area has a sidebar on the left with categories: Consoles (Microsoft, Sony, Nintendo), Games (Electronic Arts, Activision, Take-Two Interactive), and Tablets. The main content area displays "Microsoft Consoles" with two products shown: "Xbox One" (\$399.99) and "xbox360" (\$399.99). Each product card includes a "Buy Now" button, a "WriteReview" button, and a "ViewReview" button. A red rectangular box highlights the "ViewReview" button for the "xbox360" product.

6. Example – View Review:

All the reviews for the product will be retrieved from mongo db and displayed in web page

The screenshot shows a web application interface for a game store. On the left, there's a sidebar with categories: Consoles, Games, Tablets, and Accessories. The Consoles section lists Microsoft, Sony, and Nintendo. The Games section lists Electronic Arts, Activision, and Take-Two Interactive. The Tablets section lists Apple, Microsoft, and Samsung. The Accessories section lists Microsoft Accessories, Sony Accessories, and Nintendo Accessories. The main content area is titled "Review" and displays a table of reviews for a product named "xbox360". There are six rows of review data, each with columns for Product Name, user Name, Review Rating, Review Date, and Review Text. A purple arrow points from the text "Both the reviews are showed in web page" to the bottom of the review table.

Product Name	user Name	Review Rating	Review Date	Review Text
xbox360	test	1	2017-10-09	
xbox360	test	5	2017-10-10	rftgyhujiok
xbox360	test	3	2017-10-18	fgvghnjklop
xbox360	manager1	1	2017-10-19	very bad
xbox360	qwerty	2	2017-12-20	Nice game to play
xbox360	qwerty	5	2017-12-20	Amazing game to play
xbox360	qwerty			

Both the reviews are showed in web page

6. Example – View Review:

Check in the mongo shell if the myReviews collection is created inside example database and data for two reviews is stored in it



The screenshot shows a Windows command-line interface window titled "C:\Program Files\MongoDB\Server\3.2\bin\mongo.exe". Inside the window, the MongoDB shell is running. The user has entered the command "db.myReviews.find()" and received the following output:

```
> db.myReviews.find()
{ "_id" : ObjectId("57f4495441e5be0344609c42"), "title" : "myReviews", "use
rName" : "customer1", "productName" : "xbox360", "productType" : "consoles"
, "productMaker" : "microsoft", "reviewRating" : "2", "reviewDate" : "2016-
10-04", "reviewText" : " Nice Game to Play" }
{ "_id" : ObjectId("57f4498341e5be0344609c45"), "title" : "myReviews", "use
rName" : "customer1", "productName" : "xbox360", "productType" : "consoles"
, "productMaker" : "microsoft", "reviewRating" : "5", "reviewDate" : "2016-
09-13", "reviewText" : " Amazing Game to Play" }
>
```

6. Example - Server Not Running For Registration:

Trying to Register when server is not up and running

The screenshot shows the Game Speed website's registration page. At the top, there is a navigation bar with links for Home, Consoles, Games, Tablets, Trending, View Order, Login, and Cart(0). Below the navigation bar is a search bar labeled "Search Product: search here...". The main content area is titled "Login" and contains fields for Username (with "qwerty" entered), Password (redacted), and User Type (set to "Customer"). A red arrow points from the text "MySQL Server is not up and Running!" to the password field. Below the login form is a link "New User? Register here!". At the bottom of the page, a footer note states "Prices and offers are subject to change. © 2016 GameSpeed. All rights reserved."

If mySQL server not running gives an error message

6. Example - Server Not Running For Orders:

Trying to Place order when server is not up and running

The screenshot shows a web application for "Game Speed" with a dark blue header and a white content area.

Header:

- Logo: A green video game controller icon.
- Page Title: **Game Speed**
- Slogan: *World's Largest Online Games Center*
- User Authentication: Hello, Qwerty (dropdown menu)
- Search Bar: Search Product: search here..
- Navigation Links: Home, Consoles, Games, Tablets, Trending, ViewOrder, Account, Logout, Cart(1)

Left Sidebar (Consoles Category):

- Section: Consoles
- Items: Microsoft, Sony, Nintendo

Left Sidebar (Games Category):

- Section: Games
- Items: Electronic Arts, Activision, Take-Two Interactive

Tablets Category:

- Section: Tablets

Order Form (Right Side):

Order Summary:

Customer Name:	qwerty
Product Purchased:	Xbox One
Product Price:	399.99
Total Order Cost	399.99

Input Fields:

- Credit/accountNo: 12354657
- Customer Address: chicago

Buttons:

- Submit

A circular watermark is visible in the bottom right corner of the screenshot.

6. Example - Server Not Running For Orders:

Trying to Place order when server is not up and running

The screenshot shows a dark blue-themed website for "Game Speed". The header features a green game controller icon, the text "Game Speed", and "World's Largest Online Games Center". The navigation bar includes links for Home, Consoles, Games, Tablets, Trending, ViewOrder, a search bar, Hello, Qwerty, Account, Logout, and Cart(1). On the left, there are three yellow sidebar boxes: "Consoles" listing Microsoft, Sony, and Nintendo; "Games" listing Electronic Arts, Activision, and Take-Two Interactive; and "Tablets". The main content area has a white box titled "Order" containing the text "My Sql server is not up and running". A purple arrow points from a callout bubble on the right towards this error message.

If MySql server not running gives an error message



6. Example – Write Review when MongoDB Server not running:

Trying to submit review for Product

The screenshot shows a web application interface for "Game Speed". The header features a green game controller icon, the text "Game Speed", and "World's Largest Online Games Center". It includes a search bar labeled "Search Product: search here..", and navigation links for Home, Consoles, Games, Tablets, Trending, ViewOrder, Hello,Qwerty, Account, Logout, and Cart(0).

The main content area has three yellow sidebar boxes: "Consoles" (listing Microsoft, Sony, Nintendo), "Games" (listing Electronic Arts, Activision, Take-Two Interactive), and "Tablets". The central "Review" form is displayed, containing the following data:

Product Name:	xbox360
Product Type:	consoles
Product Maker:	microsoft

Review Rating: 5 ▾

Review Date: 12/20/2017

Review Text:
Amazing game to play

SubmitReview

6. Example – Write Review when MongoDB Server not running:

Trying to submit review for Product

The screenshot shows a website with a dark blue header and a white content area. In the top left, there's a green game controller icon and the text "Game Speed" in yellow, with "World's Largest Online Games Center" below it. The top navigation bar includes links for Home, Consoles, Games, Tablets, Trending, ViewOrder, a search bar labeled "Search Product: search here..", Hello,Qwerty, Account, Logout, and Cart(1). On the left, there are three yellow sidebar boxes: "Consoles" listing Microsoft, Sony, and Nintendo; "Games" listing Electronic Arts, Activision, and Take-Two Interactive; and "Tablets". The main content area has a "Review" section containing the message "Mongo Db is not up and running". A purple arrow points from a callout box on the right to this error message.

If MongoDB server
not running gives an
error message



6. Example – View Review when MongoDB Server not running:

Trying to view review for Product

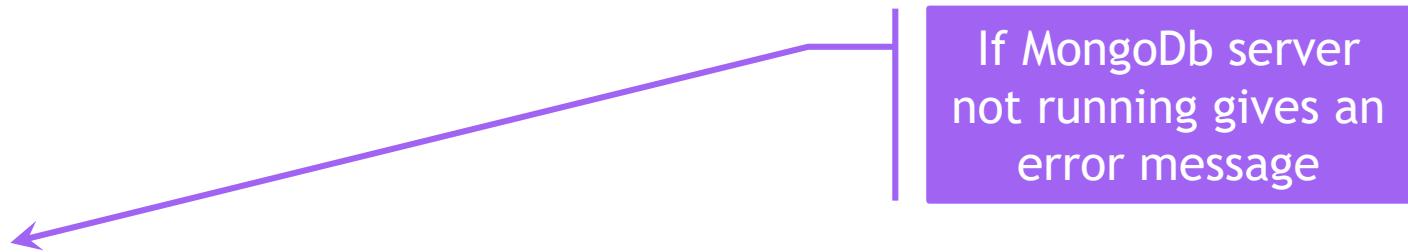
The screenshot shows the Game Speed website interface. The header features a green game controller icon, the text "Game Speed", and the subtitle "World's Largest Online Games Center". It includes a search bar labeled "Search Product: search here..", and navigation links for Home, Consoles, Games, Tablets, Trending, View Order, Login, and Cart(0).

The main content area displays a sidebar with categories: Consoles (Microsoft, Sony, Nintendo), Games (Electronic Arts, Activision, Take-Two Interactive), and Tablets. The main content area is titled "Microsoft Consoles" and shows two products: "Xbox One" (\$399.99) and "xbox360" (\$399.99). Each product card includes "Buy Now", "WriteReview", and "ViewReview" buttons. The "ViewReview" button for the Xbox 360 product is highlighted with a red rectangle.



6. Example – View Review when MongoDb Server not running:

Trying to view review for Product



6. Example – Write Review when MongoDB Server not running:

Trying to submit review for Product

The screenshot shows a website with a dark blue header and a white content area. In the top left, there's a green game controller icon and the text "Game Speed" in yellow, with "World's Largest Online Games Center" below it. The top navigation bar includes links for Home, Consoles, Games, Tablets, Trending, ViewOrder, a search bar labeled "Search Product: search here..", Hello,Qwerty, Account, Logout, and Cart(1). On the left, there are three yellow sidebar boxes: "Consoles" listing Microsoft, Sony, and Nintendo; "Games" listing Electronic Arts, Activision, and Take-Two Interactive; and "Tablets". The main content area has a "Review" section containing the message "Mongo Db is not up and running". A purple arrow points from a callout box on the right to this error message.

If MongoDB server
not running gives an
error message



7. Code Snippet

Walkthrough to get connect to
Database from Servlet



MongoDBDataStoreUtilities class to connect Database from Servlet

```
public class MongoDBDataStoreUtilities
{
    static DBCollection myReviews;
    public static void getConnection()
    {
        MongoClient mongo;
        mongo = new MongoClient("localhost", 27017);

        DB db = mongo.getDB("CustomerReviews");
        myReviews= db.getCollection("myReviews");
    }
}
```

Connecting to
CustomerReviews
database

Getting Reviews data
to DbCollection object



Walkthrough for Storing Reviews Code Snippet



Walkthrough for Storing reviews

```
public void storeReview(String productname, String producttype, String reviewrating, String reviewdate, String reviewtext)
{
    HashMap<String, ArrayList<Review>> reviews= new HashMap<String, ArrayList<Review>>();
    try
    {reviews=MongoDBDataStoreUtilities.selectReview();}
    catch(Exception e)
    { }
    if(!reviews.containsKey(productname)){
        ArrayList<Review> arr = new ArrayList<Review>();
        reviews.put(productname, arr);
    }
    ArrayList<Review> listReview = reviews.get(productname);
    Review review = new Review(productname,username(),producttype,reviewrating,reviewdate,reviewtext);
    listReview.add(review);
    try
    {
        MongoDBDataStoreUtilities.insertReview(productname,username(),producttype,reviewrating,reviewdate,reviewtext);
    }
    catch(Exception e)
    { }
}
```

Calling utility function to select data from database and storing reviews in hashmap

Calling utility function to inserting reviews in database



Utility Function for Selecting Review Data into Hashmap

```
public static HashMap<String, ArrayList<Review>> selectReview()
{
    getConnection();
    HashMap<String, ArrayList<Review>> reviewHashmap=new HashMap<String, ArrayList<Review>>();
    DBCursor cursor = myReviews.find();
    while (cursor.hasNext())
    {
        BasicDBObject obj = (BasicDBObject) cursor.next();
        if(! reviewHashmap.containsKey(obj.getString("productName")))
        {
            ArrayList<Review> arr = new ArrayList<Review>();
            reviewHashmap.put(obj.getString("productName"), arr);
        }
        ArrayList<Review> listReview = reviewHashmap.get(obj.getString("productName"));
        Review review =new
        Review(obj.getString("productName"),obj.getString("userNmae"),obj.getString("productType"),obj.getStr
        ing("reviewRating"),obj.getString("reviewDate"),obj.getString("reviewText"));
        listReview.add(review);
    }
    return reviewHashmap;
}
```

DBCursor used to store table data obtained from database in servlet

Iterate through Cursor and Store each review into class object

Utility Function for Writing Reviews into Mongo database

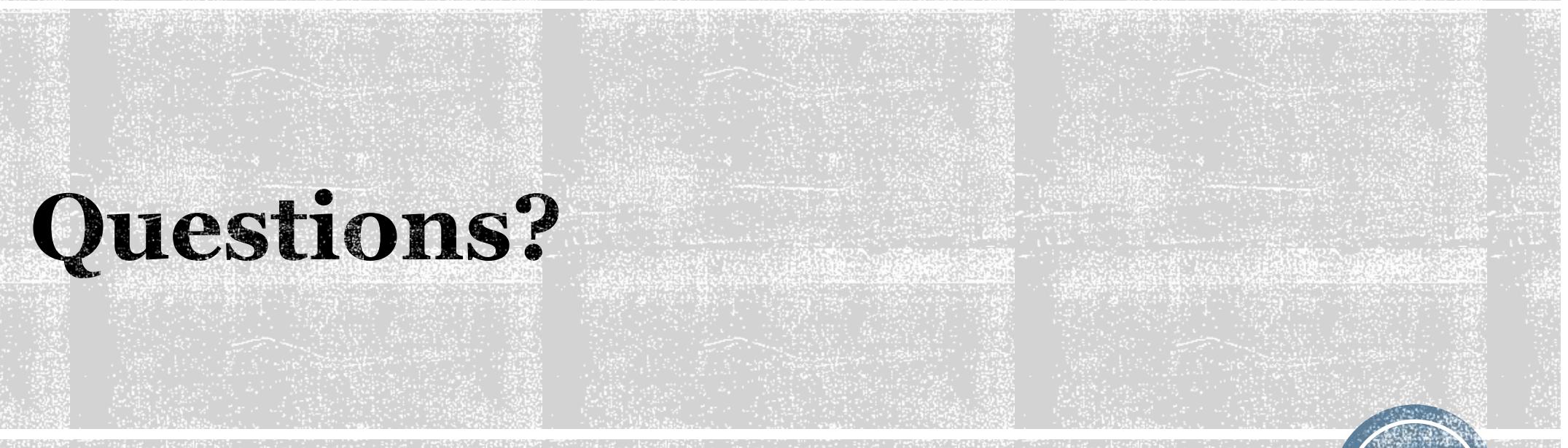
```
public static void insertReview(String productname, String username, String  
producttype, String reviewrating, String reviewdate, String reviewtext)  
{  
    getConnection();  
    BasicDBObject doc = new BasicDBObject("title", "myReviews").  
        append("userName", username).  
        append("productName", productname).  
        append("productType", producttype).  
        append("reviewRating", reviewrating).  
        append("reviewDate", reviewdate).  
        append("reviewText", reviewtext);  
    myReviews.insert(doc);  
}
```

Creating a
BasicObject to insert
data into database

Specifying each
column to insert
value

DbCollection.insert()
Will insert data into
database





Questions?

