Next Generation Technologies

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Practical No:1 – MongoDB Basics

A) Write a MongoDB query to create and drop database.

> show databases // checks currents databases.

```
C:\windows\system32\cmd.exe - mongo
> show databases
MKSDB   0.000GB
admin   0.000GB
config  0.000GB
local   0.000GB
```

> use mks // Using database mks

```
> use mks
switched to db mks
> db.createCollection("user")
{ "ok" : 1 }
```

> db.createCollection("user") //Creating Empty Collection

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

> show databases //Database is Created

```
> show databases
MKSDB   0.000GB
admin   0.000GB
config  0.000GB
local   0.000GB
mks     0.000GB
```

> db.dropDatabase() //Drop Database

```
> db.dropDatabase()
{ "dropped" : "mks", "ok" : 1 }
> show databases
MKSDB   0.000GB
admin   0.000GB
config  0.000GB
local   0.000GB
>
```

B) Write a MongoDB query to create, display and drop a collection

> use sy

```
C:\windows\system32\cmd.exe - mongo
> use sy
switched to db sy
```

> db.user.insert({"name": "ABC", "rollno":10})

```
> db.user.insert({"name":"ABC","rollno":10})
WriteResult({ "nInserted" : 1 })
```

> show collections

```
> show collections
user
```

> db.user.find()

```
> db.user.find()
{ "_id" : ObjectId("634ed24c6029d04034893a38"), "name" : "ABC", "rollno" : 10 }
```

> db.user.drop()

```
> db.user.drop()
true
```

> show collections

```
> show collections
>
```

C) Write a MongoDB query to insert, query, update and delete a document

✓ ***Different Methods of inserting Documents***

i. Insert Document

> use mks

> db.products.insert({ item: "card", qty: 15 })

Command Prompt - mongo

```
> use mks
switched to db mks
> db.products.insert( { item: "card", qty: 15 } )
WriteResult({ "nInserted" : 1 })
> db.products.find()
{ "_id" : ObjectId("634fe9f4b3bd865a20c2d731"), "item" : "card", "qty" : 15 }
>
```

ii. Insert Multiple Documents

db.products.insert([
{ _id: 11, item: "pencil", qty: 50, type: "no.2" },
{ item: "pen", qty: 20 },
{ item: "eraser", qty: 25 }
])

Command Prompt - mongo

```
> db.products.insert(
...     [
...       { _id: 11, item: "pencil", qty: 50, type: "no.2" },
...       { item: "pen", qty: 20 },
...       { item: "eraser", qty: 25 }
...     ]
... )
BulkWriteResult({
        "writeErrors" : [ ],
        "writeConcernErrors" : [ ],
        "nInserted" : 3,
        "nUpserted" : 0,
        "nMatched" : 0,
        "nModified" : 0,
        "nRemoved" : 0,
        "upserted" : [ ]
})
>
```

iii. Insert a single document into a collection using db.col.insertOne()

Command Prompt - mongo

```
> db.products.insertOne( { _id: 10, item: "box", qty: 20 } )
{ "acknowledged" : true, "insertedId" : 10 }
>
```

✓ ***Updating Document Queries :***

i. Updating Document using $set

Fetching Record with ***_id:10 and Updating status from "A" to "Pending"***

> db.inventory.find({"_id":10})
> db.inventory.update({ _id: 10 },{$set: {status: "Pending" }})
> db.inventory.find({"_id":10}) ***// Checking After Update***

Command Prompt - mongo

```
> db.inventory.find({"_id":10})
{ "_id" : 10, "item" : "sketch pad", "qty" : 95, "status" : "A" }
> db.inventory.update({ _id: 10 },{$set: {status: "Pending" }})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.inventory.find({"_id":10})
{ "_id" : 10, "item" : "sketch pad", "qty" : 95, "status" : "Pending" }
>
```

ii. Updating Document with overwriting.

Overwriting the Exiting Document.
> db.product.find()
> db.products.update({"item" : "pen"},{"item" : "pen", "qty" : 400, "COD":"Yes"})
> db.product.find()

```
> db.products.find()
{ "_id" : 101, "item" : "pencil", "qty" : 2 }
{ "_id" : 102, "item" : "pen", "qty" : 4 }
{ "_id" : 103, "item" : "eraser", "qty" : 5 }
{ "_id" : 104, "item" : "refill", "qty" : 6 }
> db.products.update({"item" : "pen"},{"item" : "pen", "qty" : 400, "COD":"Yes"})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.products.find()
{ "_id" : 101, "item" : "pencil", "qty" : 2 }
{ "_id" : 102, "item" : "pen", "qty" : 400, "COD" : "Yes" }
{ "_id" : 103, "item" : "eraser", "qty" : 5 }
{ "_id" : 104, "item" : "refill", "qty" : 6 }
>
```

- ✓ **Deleting Document**
- ✓ *Removing Document By Key: Value Pair Reference*

  > db.products.find()

  > db.products.remove({"item":"pen"})

  > db.products.find()

Command Prompt - mongo

```
> db.products.find()
{ "_id" : 101, "item" : "pencil", "qty" : 2 }
{ "_id" : 102, "item" : "pen", "qty" : 400, "COD" : "Yes" }
{ "_id" : 103, "item" : "eraser", "qty" : 5 }
{ "_id" : 104, "item" : "refill", "qty" : 6 }
> db.products.remove({"item":"pen"})
WriteResult({ "nRemoved" : 1 })
> db.products.find()
{ "_id" : 101, "item" : "pencil", "qty" : 2 }
{ "_id" : 103, "item" : "eraser", "qty" : 5 }
{ "_id" : 104, "item" : "refill", "qty" : 6 }
>
```

- ✓ *Remove All Documents that Match a Condition*

Command Prompt - mongo

```
> db.products.find()
{ "_id" : 101, "item" : "pencil", "qty" : 2 }
{ "_id" : 103, "item" : "eraser", "qty" : 5 }
{ "_id" : 104, "item" : "refill", "qty" : 6 }
> db.products.remove( { qty: { $gt: 2 } } )
WriteResult({ "nRemoved" : 2 })
> db.products.find()
{ "_id" : 101, "item" : "pencil", "qty" : 2 }
```

Practical No:2 – Simple Queries with MongoDB

We shall use WHERE clause in this examples. $WHERE

> db.products.find()

> db.products.find({ $where: function() {return (this.item=="pencil")}});

Command Prompt - mongo

```
> db.products.find()
{ "_id" : 101, "item" : "pencil", "qty" : 2 }
{ "_id" : 10, "item" : "large box", "qty" : 20 }
{ "_id" : 11, "item" : "small box", "qty" : 55 }
{ "_id" : 12, "item" : "medium box", "qty" : 30 }
> db.products.find( { $where: function() {return (this.item=="pencil")}});
{ "_id" : 101, "item" : "pencil", "qty" : 2 }
>
```

Practical No:3 – Implementing Aggregation

A) Write a MongoDB query to use sum, avg, min and max expression

- ✓ **Sum**

> db.school.find()
>db.school.aggregate([{$group:{_id:"$Gender", Total:{$sum:1}}}])

Command Prompt - mongo

```
> db.school.find()
{ "_id" : 101, "Name" : "Stud 1", "Roll" : 1, "Gender" : "Male", "Age" : 15 }
{ "_id" : 102, "Name" : "Stud 2", "Roll" : 2, "Gender" : "Male", "Age" : 20 }
{ "_id" : 103, "Name" : "Stud 3", "Roll" : 3, "Gender" : "Female", "Age" : 12 }
{ "_id" : 104, "Name" : "Stud 4", "Roll" : 4, "Gender" : "Female", "Age" : 21 }
{ "_id" : 105, "Name" : "Stud 5", "Roll" : 5, "Gender" : "Female", "Age" : 15 }
{ "_id" : 106, "Name" : "Stud 6", "Roll" : 6, "Gender" : "Male", "Age" : 16 }
{ "_id" : 107, "Name" : "Stud 7", "Roll" : 7, "Gender" : "Female", "Age" : 17 }
> db.school.aggregate([{$group:{_id:"$Gender", Total:{$sum:1}}}])
{ "_id" : "Female", "Total" : 4 }
{ "_id" : "Male", "Total" : 3 }
>
```

- ✓ **Min & Max**

> db.school.find()
>db.school.aggregate([{$group:{_id:"$Gender", MaxAge:{$max:"$Age"}}}])

Command Prompt - mongo

```
> db.school.find()
{ "_id" : 101, "Name" : "Stud 1", "Roll" : 1, "Gender" : "Male", "Age" : 15 }
{ "_id" : 102, "Name" : "Stud 2", "Roll" : 2, "Gender" : "Male", "Age" : 20 }
{ "_id" : 103, "Name" : "Stud 3", "Roll" : 3, "Gender" : "Female", "Age" : 12 }
{ "_id" : 104, "Name" : "Stud 4", "Roll" : 4, "Gender" : "Female", "Age" : 21 }
{ "_id" : 105, "Name" : "Stud 5", "Roll" : 5, "Gender" : "Female", "Age" : 15 }
{ "_id" : 106, "Name" : "Stud 6", "Roll" : 6, "Gender" : "Male", "Age" : 16 }
{ "_id" : 107, "Name" : "Stud 7", "Roll" : 7, "Gender" : "Female", "Age" : 17 }
> db.school.aggregate([{$group:{_id:"$Gender", MaxAge:{$max:"$Age"}}}])
{ "_id" : "Female", "MaxAge" : 21 }
{ "_id" : "Male", "MaxAge" : 20 }
>
```

> db.school.aggregate([{$group:{_id:"$Gender", MinAge:{$min:"$Age"}}}])

```
> db.school.aggregate([{$group:{_id:"$Gender", MinAge:{$min:"$Age"}}}])
{ "_id" : "Female", "MinAge" : 12 }
{ "_id" : "Male", "MinAge" : 15 }
>
```

> db.school.aggregate([{$group:{_id:"$Gender", AvgAge:{$avg:"$Age"}}}])

```
> db.school.aggregate([{$group:{_id:"$Gender", AvgAge:{$avg:"$Age"}}}])
{ "_id" : "Female", "AvgAge" : 16.25 }
{ "_id" : "Male", "AvgAge" : 17 }
>
```

B) Write a mongodb query to use Push and AddToSet Expressions.

$push: The $push operator appends a specified value to an array.

> db.score.find()

> db.score.update({Name:"User1"},{$push:{"Scroes":80}})

> db.score.find()

Command Prompt - mongo

```
> db.score.find()
{ "_id" : 1, "Name" : "User1", "Scroes" : [ 10 ] }
> db.score.update({Name:"User1"},{$push:{"Scroes":80}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.score.find()
{ "_id" : 1, "Name" : "User1", "Scroes" : [ 10, 80 ] }
>
```

$addToSet: The operator adds the value to an array unless the value is already present.

> db.score.update({Name:"User1"},{$addToSet:{"Macth":5}})

```
{ "_id" : 1, "Name" : "User1", "Scroes" : [ 10, 80 ] }
> db.score.update({Name:"User1"},{$addToSet:{"Macth":5}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.score.find()
{ "_id" : 1, "Name" : "User1", "Scroes" : [ 10, 80 ], "Macth" : [ 5 ] }
>
```

C) Write a mongodb query to use $first and $last expression.

> db.school.find()
> db.school.aggregate({$group:{_id: null,first: { $first: "$$ROOT" },last: { $last: "$$ROOT" }}});

Select Command Prompt - mongo

```
> db.school.find()
{ "_id" : 101, "Name" : "Stud 1", "Roll" : 1, "Gender" : "Male", "Age" : 15 }
{ "_id" : 102, "Name" : "Stud 2", "Roll" : 2, "Gender" : "Male", "Age" : 20 }
{ "_id" : 103, "Name" : "Stud 3", "Roll" : 3, "Gender" : "Female", "Age" : 12 }
{ "_id" : 104, "Name" : "Stud 4", "Roll" : 4, "Gender" : "Female", "Age" : 21 }
{ "_id" : 105, "Name" : "Stud 5", "Roll" : 5, "Gender" : "Female", "Age" : 15 }
{ "_id" : 106, "Name" : "Stud 6", "Roll" : 6, "Gender" : "Male", "Age" : 16 }
{ "_id" : 107, "Name" : "Stud 7", "Roll" : 7, "Gender" : "Female", "Age" : 17 }
> db.school.aggregate({$group:
... {_id: null,
... first: { $first: "$$ROOT" },
... last: { $last: "$$ROOT" }
... }})
{ "_id" : null, "first" : { "_id" : 101, "Name" : "Stud 1", "Roll" : 1, "Gender" : "Male", "Age" : 15 }, "last" :
{ "_id" : 107, "Name" : "Stud 7", "Roll" : 7, "Gender" : "Female", "Age" : 17 } }
>
```

Practical No:4 – Java and MongoDB

Aim: Connecting Java with MongoDB and inserting, retrieving, updating and deleting.

* Insert: package

```
insert.java.mongo;
import com.mongodb.MongoClient;
import com.mongodb.MongoCredential;
import com.mongodb.client.MongoCollection;
import com.mongodb.client.MongoDatabase;
import org.bson.Document;
import com.mongodb.client.FindIterable;
import java.util.Iterator;
public class InsertJavaMongo {

public static void main(String[] args) {
   MongoClient mongo=new MongoClient("localhost",27017);
   MongoCredential credential;

credential=MongoCredential.createCredential("MKS","MakeDB","passwod".toCha
rArray());
        System.out.println("Credentials::"+credential);
        MongoDatabase database=mongo.getDatabase("MakeDB");
        System.out.println("Connected to database successfully");
        database.createCollection("mycol");
        System.out.println("Collection created");

MongoCollection<Document>collection=database.getCollection("mycol");
        System.out.println("Collection selected");
        Document document=new Document("title","Mongodb").append ("id",1)
 .append("Discription","database").append("Created by", "MKS");
        collection.insertOne(document);
        System.out.println("Document inserted");
       show(collection);
     }
     static void show(MongoCollection<Document>collection)
    {
    FindIterable<Document> iterDoc= collection.find();
    int i=1;
    Iterator it=iterDoc.iterator();
    while(it.hasNext()){
    System.out.println(it.next());
    i++;
    }
    }
    }
```

Otput:

```
Collection created
Collection selected
Document inserted
Document{{_id=634af93538d5623c5a85305b, title=Mongodb, id=1, Discription=database, Created by=MKS}}
BUILD SUCCESSFUL (total time: 4 seconds)
```

* Update:

```
package update.java.mongo;
import com.mongodb.MongoClient;
import com.mongodb.MongoCredential;
import com.mongodb.client.MongoCollection;
import com.mongodb.client.MongoDatabase;
import org.bson.Document;
import com.mongodb.client.FindIterable;
import java.util.Iterator;
import com.mongodb.client.model.Filters;
import com.mongodb.client.model.Updates;

public class UpdateJavaMongo {

public static void main(String[] args) {
 MongoClient mongo=new MongoClient("localhost",27017);
 MongoCredential credential;

credential=MongoCredential.createCredential("MKS","MakeDB","passwod".toCha
rArray());
        System.out.println("Credentials::"+credential);
        MongoDatabase database=mongo.getDatabase("MakeDB");
        System.out.println("Connected to database successfully");

MongoCollection<Document>collection=database.getCollection("mycol");
        System.out.println("Collection selected");
        collection.updateOne(Filters.eq("id","1"),Updates.set("id",2));
       System.out.println("Updated Successfully");
     }
     static void show(MongoCollection<Document>collection)
    {
    FindIterable<Document> iterDoc= collection.find();
    int i=1;
    Iterator it=iterDoc.iterator();
    while(it.hasNext()){
    System.out.println(it.next());
    i++;
} }}
```

Output:

```
Updated Successfully
BUILD SUCCESSFUL (total time: 5 seconds)
```

```
> db.mycol.find().pretty()
{
        "_id" : ObjectId("634af93538d5623c5a85305b"),
        "title" : "Mongodb",
        "id" : 2,
        "Discription" : "database",
        "Created by" : "MKS"
}
>
```

* Delete

```
package delete.java.mongo;
import com.mongodb.MongoClient;
import com.mongodb.MongoCredential;
import com.mongodb.client.MongoCollection;
import com.mongodb.client.MongoDatabase;
import org.bson.Document;
import com.mongodb.client.FindIterable;
import java.util.Iterator;
import com.mongodb.client.model.Filters;
import com.mongodb.client.model.Updates;
public class DeleteJavaMongo {

public static void main(String[] args) {
    MongoClient mongo=new MongoClient("localhost",27017);
    MongoCredential credential;

credential=MongoCredential.createCredential("MKS","MakeDB","password".toCh
arArray());
     System.out.println("Credentials::"+credential);
     MongoDatabase database=mongo.getDatabase("MakeDB");
     System.out.println("Connected to database successfully");
     MongoCollection<Document>collection=database.getCollection("mycol");
     System.out.println("Collection selected");
     collection.deleteOne(Filters.eq("id",2));
     System.out.println("Document deleted");
     show(collection);

      }
       static void show(MongoCollection<Document>collection)
    {
    FindIterable<Document> iterDoc= collection.find();
    int i=1;
    Iterator it=iterDoc.iterator();
    while(it.hasNext()){
    System.out.println(it.next());
    i++;
    }
    }
}
```

Output:

```
Credentials::MongoCredential{mechanism=null, userName='MKS', source='MakeDB'
Connected to database successfully
Collection selected
Document deleted
BUILD SUCCESSFUL (total time: 4 seconds)
```

* Delete

```
package retrieve.java.mongo;
import com.mongodb.MongoClient;
import com.mongodb.MongoCredential;
import com.mongodb.client.MongoCollection;
import com.mongodb.client.MongoDatabase;
import org.bson.Document;
import com.mongodb.client.FindIterable;
import java.util.Iterator;

public class RetrieveJavaMongo {
  public static void main(String[] args) {
    MongoClient mongo=new MongoClient("localhost",27017);
    MongoCredential credential;

credential=MongoCredential.createCredential("MKS","MakeDB","password".t
oCharArray());
     System.out.println("Credentials::"+credential);
     MongoDatabase database=mongo.getDatabase("MakeDB");
     System.out.println("Connected to database successfully");

MongoCollection<Document>collection=database.getCollection("mycol");
     System.out.println("Collection selected");
     show(collection);
    }
     static void show(MongoCollection<Document>collection)
    {
    FindIterable<Document> iterDoc= collection.find();
    int i=1;
    Iterator it=iterDoc.iterator();
    while(it.hasNext()){
    System.out.println(it.next());
    i++;
}}}
```

Output:

```
INFO: Opened connection [connectionId{localValue:1, serverValue:47}] to localhost:27017
Oct 16, 2022 1:26:54 PM com.mongodb.diagnostics.logging.JULLogger log
INFO: Monitor thread successfully connected to server with description ServerDescription{a
Oct 16, 2022 1:26:54 PM com.mongodb.diagnostics.logging.JULLogger log
INFO: Opened connection [connectionId{localValue:2, serverValue:48}] to localhost:27017
Document{{_id=634bb9302e53e5c705167ca7, id=2.0, Name=EFG, Phone=0987654332}}
BUILD SUCCESSFUL (total time: 4 seconds)
```

Practical No:5 – Python and MongoDB

Aim: Connecting Python with MongoDB and inserting, retrieving, updating and deleting.

- **Insert:**

```
import pymongo
myclient=pymongo.MongoClient("mongodb://localhost:27017/")
mydb=myclient["mks"]
mycol=mydb["col1"]
x=mycol.insert_one(={"name":"ABC","address":"Mumbai"})
print(x.inserted_id)
for x in mycol.find():
   print(x)
```

Output:

```
==================== RESTART: C:\Users\Admin\Desktop\test.py ===================
63505fa04ba811e79be88f1c
{'_id': ObjectId('63505fa04ba811e79be88f1c'), 'name': 'ABC', 'address': 'Mumbai'}
>>>
```

- **Retrieve**

```
import pymongo
myclient=pymongo.MongoClient("mongodb://localhost:27017/")
mydb=myclient["test"]
mycol=mydb["school"]
for x in mycol.find():
      print(x)
```

Output:

```
==================== RESTART: C:\Users\Admin\Desktop\test.py ===============
{'_id': 101, 'Name': 'Stud 1', 'Roll': 1, 'Gender': 'Male', 'Age': 15}
{'_id': 102, 'Name': 'Stud 2', 'Roll': 2, 'Gender': 'Male', 'Age': 20}
{'_id': 103, 'Name': 'Stud 3', 'Roll': 3, 'Gender': 'Female', 'Age': 12}
{'_id': 104, 'Name': 'Stud 4', 'Roll': 4, 'Gender': 'Female', 'Age': 21}
```

- **Delete**

```
import pymongo
myclient=pymongo.MongoClient("mongodb://localhost:27017/")
mydb=myclient["test"]
mycol=mydb["school"]
mycol.delete_one({"Name":"Stud 3"})
print("Deleted Stud 3")
for x in mycol.find():
   print(x)
```

Output:

```
==================== RESTART: C:\Users\Admin\Desktop\test.py ============
Deleted Stud 3
{'_id': 101, 'Name': 'Stud 1', 'Roll': 1, 'Gender': 'Male', 'Age': 15}
{'_id': 102, 'Name': 'Stud 2', 'Roll': 2, 'Gender': 'Male', 'Age': 20}
{'_id': 104, 'Name': 'Stud 4', 'Roll': 4, 'Gender': 'Female', 'Age': 21}
```

- **Update**

```
import pymongo
myclient=pymongo.MongoClient("mongodb://localhost:27017/")
mydb=myclient["test"]
mycol=mydb["school"]
mycol.update_one({"Name":"Stud 1"},{"$set":{"Age":"18"}})
print("Updated Stud 1 Age")
for x in mycol.find():
   print(x)
```

Output:

```
==================== RESTART: C:\Users\Admin\Desktop\test.py =============
Updated Stud 1 Age
{'_id': 101, 'Name': 'Stud 1', 'Roll': 1, 'Gender': 'Male', 'Age': '18'}
{'_id': 102, 'Name': 'Stud 2', 'Roll': 2, 'Gender': 'Male', 'Age': 20}
{'_id': 104, 'Name': 'Stud 4', 'Roll': 4, 'Gender': 'Female', 'Age': 21}
```

Practical No:6 – Programs on Basic jQuery

A.i) jQuery Basic

Index.html >

```
<html>
<body>
<h2>Create Object from JSON String</h2>
<h3 id="demo"></h3>
<script>
var txt ='{"name":"XYZ","age":"17","City":"MUM"}'
var obj=JSON.parse(txt)
document.getElementById("demo").innerHTML="Name " + obj.name +
", Age " + obj.age;
</script>
</body>
</html>
```

Output:

A.ii) jQuery Events

Index.html >

```
<html>
<head>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
   $("p").click(function(){  //For Double Click Event Write .dblclick
    $(this).hide();
      });
      });
</script>
</head>
<body>
<p>This text will disapper if you click on it.</p>
<p>Click to make this text disapper!</p>
</body>
</html>
```

Output:

Before Click:

After Click:

B) jQuery Selectors jQuery Hide and Show effects

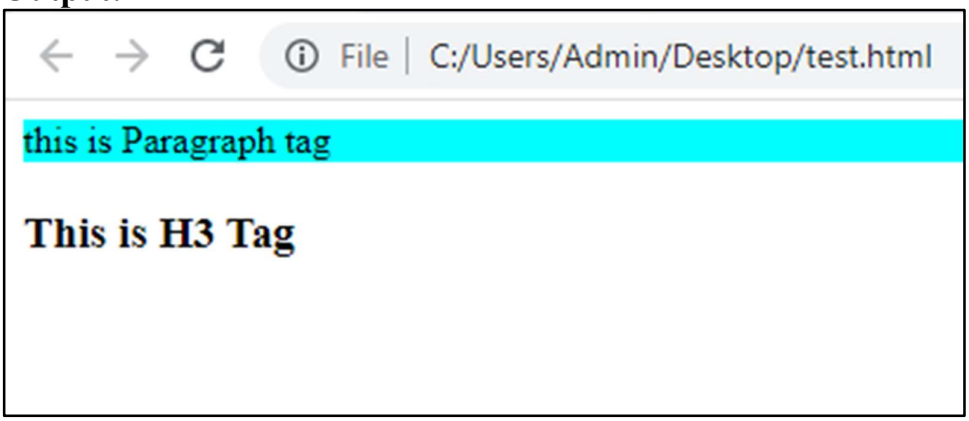
*** Tag Selector : →**

Note: We Will Select Paragraph Tag and will we give Background Color Using jQuery

Index.html >

```
<html>
<head>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
   $("p").css("background-color","Aqua");
      });
</script>
</head>
<body>
<p>this is Paragraph tag</p>
<h3>This is H3 Tag</h3>
</body>
</html>
```

Output:



* jQuery Hide Paragraph : →

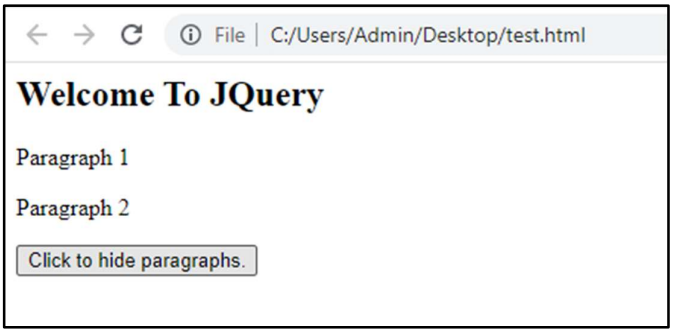
Note: We Will Hide Paragraph Tag on Button Click Event.

Index.html >

```
<html>
<head>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
$("button").click(function(){
$("p").hide();
});
});
</script>
</head>
<body>
<h2>Welcome To JQuery</h2>
<p>Paragraph 1</p>
<p>Paragraph 2</p>
<button>Click to hide paragraphs.</button>
</body>
</html>
```

Output:

Before Button Click:



After Button Click:

C) jQuery fading effects, jQuery Sliding effects

i) SlideUp

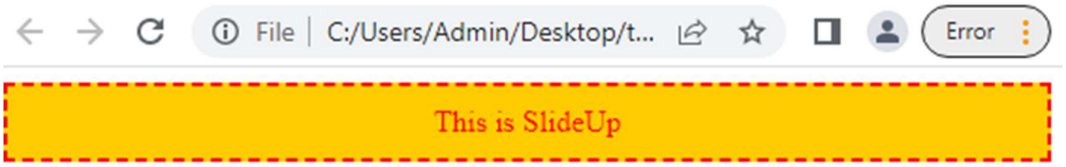
Index.html >

```
<html>
<head>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
 $("#flip").click(function(){
 $("#panel").slideUp("slow");
 });});
</script>
<style>
#panel,#flip{
padding :10px; text-align:center;
background-color : #ffcc00; border: dashed;
border-width: 2px; color: red; }
#panel{
padding:50px; color: black; }
</style>
</head>
<body>
<div id="flip">This is SlideUp</div>
<div id="panel"><h2>This is Content !!</h2></div>
</body>
</html>
```

Output:

Before Click:

After Click:



ii) SlideDown

Index.html >

```
<html>
<head>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
 $("#panel").click(function(){
 $("#flip").slideDown("slow");
 });});
</script>
<style>
#panel,#flip{
padding :10px; text-align:center;
background-color : #ffcc00; border: dashed;
border-width: 2px; color: red; }
#panel{
padding:50px; color: black; }
</style>
</head>
<body>
<div id="flip">This is SlideDown</div>
<div id="panel"><h2>This is Content !!</h2></div>
</body>
</html>
```

Output:

Before Click:

After Click:

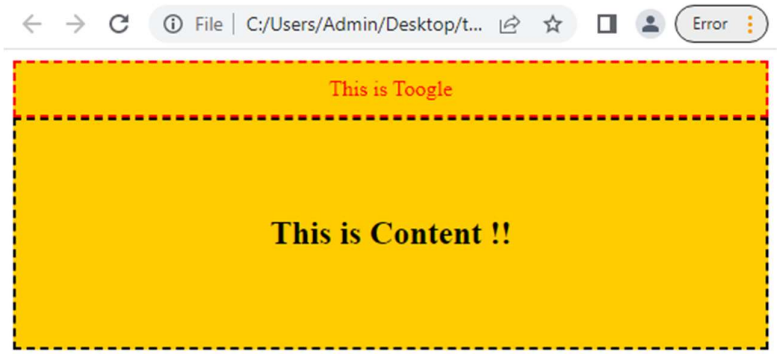
iii) SlideToggle

Index.html >

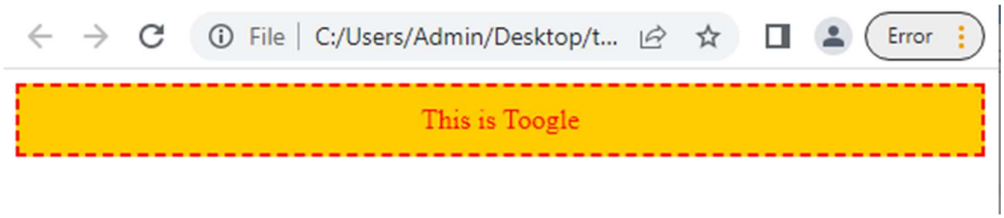
```
<html>
<head>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
 $("#flip").click(function(){
 $("#panel").slideToggle("slow"); // Toggle Contains Both SideUp & Down
 });});
</script>
<style>
#panel,#flip{
padding :10px; text-align:center;
background-color : #ffcc00; border: dashed;
border-width: 2px; color: red; }
#panel{
padding:50px; color: black; }
</style>
</head>
<body>
<div id="flip">This is Toogle</div>
<div id="panel"><h2>This is Content !!</h2></div>
</body>
</html>
```

Output:

Before Click:



After Click:



Practical No:7 – jQuery Advanced

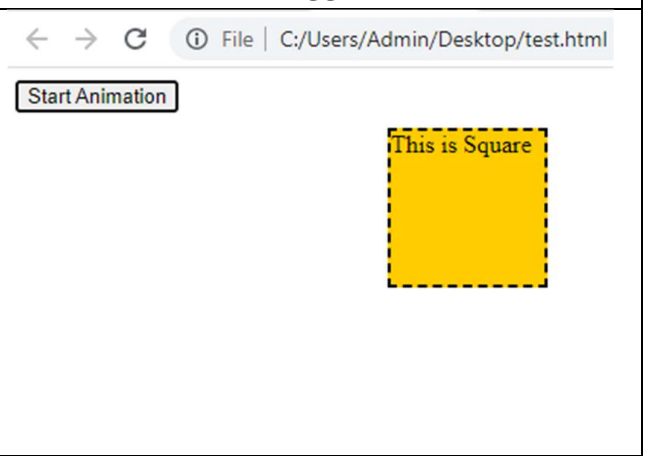
A) jQuery Animation effects, jQuery Chaining

* Animation effects

Code:

```
<html>
<head>
   <style>
      div {
         margin-top: 10px;
         background:#ffcc00; border: dashed;
         border-width: 2px;
         height:100px; width:100px;
         position:absolute;
      }
   </style>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
   $("button").click(function(){
    $("div").animate({left:'300px'});
      });
 });
      </script>
</head>
<body>
<button>Start Animation</button>
<div>This is Square </div>
</body>
</html>
```

Output:

Before	After
	

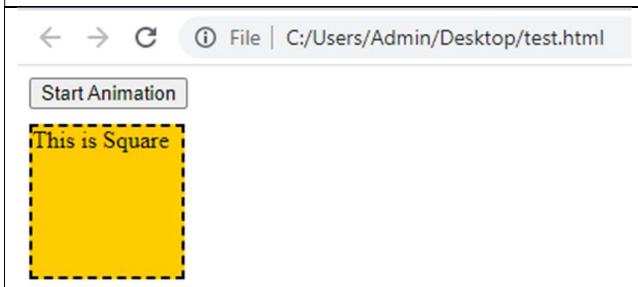
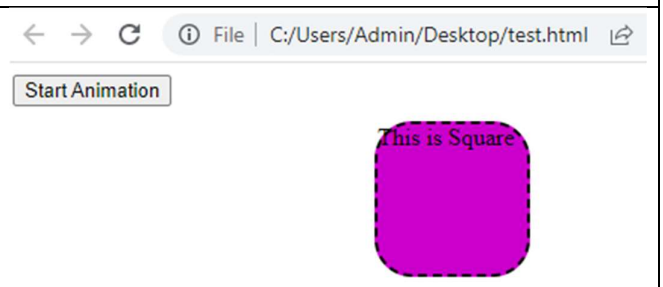
* Chaining effects

The technique called chaining, that allows us to run multiple jQuery commands, one after other, on the same elements.

Code:

```
<html>
<head>
   <style>
      div {
         margin-top: 10px;
         background-color:#ffcc00; border: dashed;
         border-width: 2px;
         height:100px; width:100px;
         position:absolute;
      }
   </style>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
   $("button").click(function(){
    $("div").animate({left:'250px'},4000,"linear")
    .css("background-color","#cc00cc")
    .css("border-radius","25px");
      });
 });
      </script>
</head>
<body>
<button>Start Animation</button>
<div>This is Square</div>
</body>
</html>
```

Output:

Before	After
	

B) jQuery Callback, jQuery Get

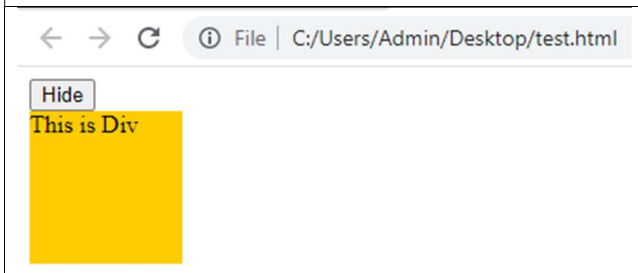
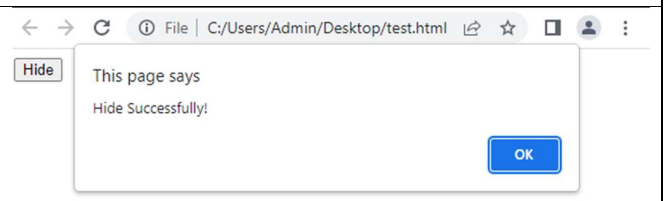
* Call Back:

A callback function is executed after the current effect is finished: Syntax: $(selector).hide(speed,callback);

Code:

```
<html>
<head>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
$("button").click(function(){
$("div").hide("slow",function(){
alert("Hide Successfully!"); });
});});
</script>
</head>
<body>
<button>Click to Hide</button>
<div style="background-color: #ffcc00; height: 100px; width: 100px">This
is Div</div>
</body>
</html>
```

Output:

Before	After
	

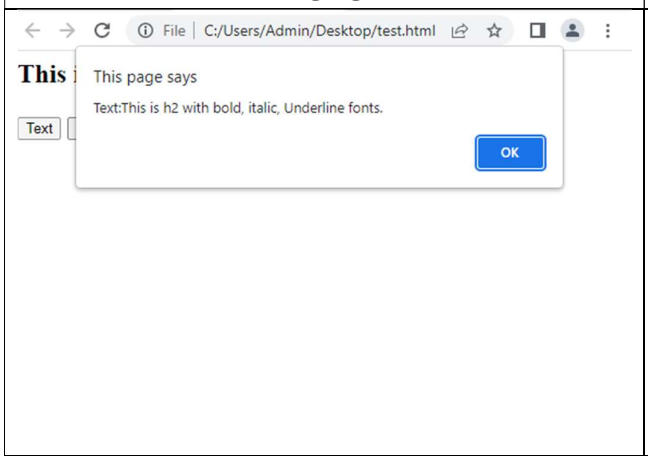
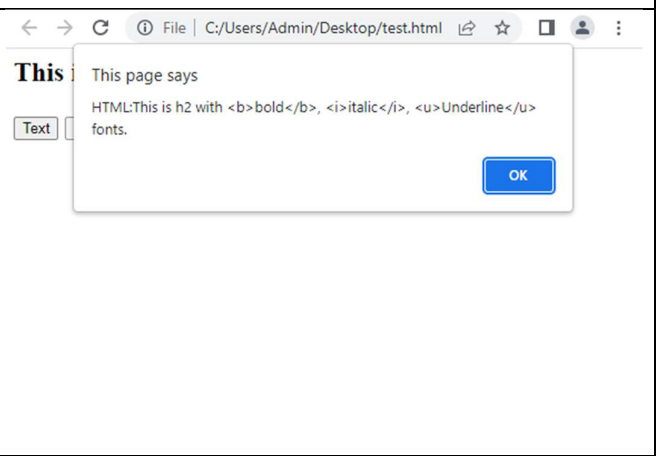
* Get Content:

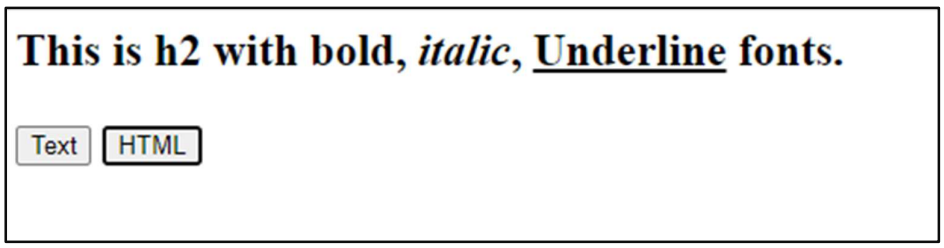
Demonstrate to get content with the jQuery text() and html() methods:

Code:

```
<html>
<head>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
   $("#b1").click(function(){
     alert("Text:"+$("#hi").text());
        });
 $("#b2").click(function(){
     alert("HTML:"+$("#hi").html());
        });
   });
      </script>
</head>
<body>
<h2 id="hi">This is h2 with <b>bold</b>, <i>italic</i>,
<u>Underline</u> fonts.<h2>
<button id="b1">Text</button>
<button id="b2">HTML</button>
</body>
</html>
```

Output:

Text	HTML
	



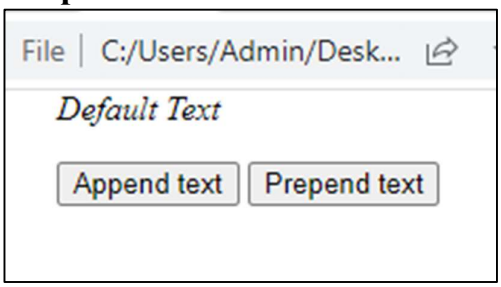
C) jQuery Insert Content, jQuery Remove Elements and Attribute

* Inserting Content Using Append & Prepend

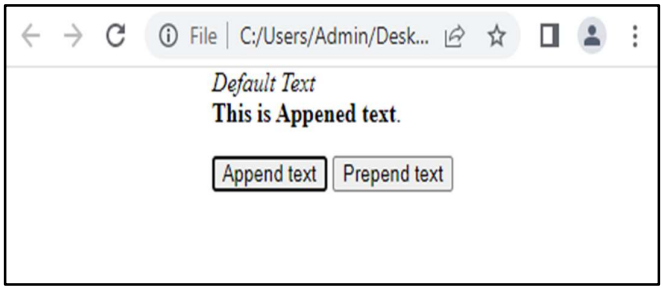
Code:

```
<html>
<head>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
   $("#b1").click(function(){
    $("p").append("<b> <br> This is Appened text</b>.");
      });
   $("#b2").click(function(){
    $("p").prepend("<b>This is Prepended text</b><br>");
      });
 });
      </script>
</head>
<body>
<p> <i>Default Text</i></p>
<button id="b1">Append text</button>
<button id="b2">Prepend text</button>
</body>
</html>
```

Output:



After Append Text



After Prepend Text

* Remove Element

Code:

```
<html>
<head>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
   $("#b1").click(function(){
    $("p").remove();
   });
 });
      </script>
</head>
<body>
<p> <i>Default Text</i></p>
<button id="b1">Remove P Tag</button>
</body>
</html>
```

Before click:

After Click:

* Empty() Element

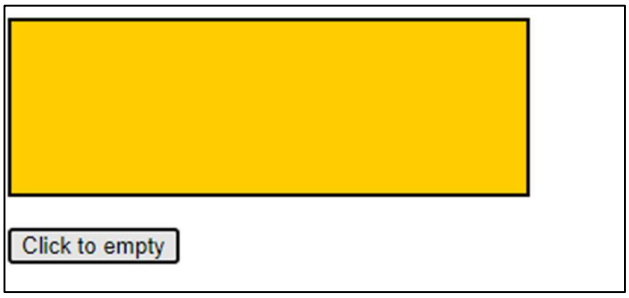
Code:

```
<html>
<head>
   <style>
     div{
      height:200px; width:300px;
      border:2px solid black; background-color:#ffcc00;
   }
   </style>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">
</script>
<script>
$(document).ready(function(){
   $("button").click(function(){
   $("#d1").empty();
      });
 });
      </script>
</head>
<body>
<div id="d1">
<h3 align="center">Some Content </h3>
</div>
<br>
<button>Click to empty</button>
</body>
</html>
```

Output:

Before click:

After Click:



Practical No:8 – JSON

A) Creating JSON

Code:

```
import json
x={
    "name":"xyz",
    "age":18,
    "city":"MH"
    }
y=json.dumps(x)
print(y)
```

Output:

```
==================== RESTART: C:\Users\Admin\Desktop\test.py ===================
{"name": "xyz", "age": 18, "city": "MH"}
>>>
```

B) Parsing JSON

Code:

```
import json
x='{"name":"xyz","age":18,"city":"MH"}'
y=json.loads(x)
print("Name:", y["name"], "Age: ",y["age"])
```

Output:

```
==================== RESTART: C:\Users\Admin\Desktop\test.py ===================
Name: xyz Age:  18
>>>
```

C) Persisting JSON

First Create a Json File & Write some Document:

```
{
      "Name":"Test",
      "Class":"TY",
      "Sem":5
}
```

Now, Open Command Prompt and Go to "C:\Program Files\MongoDB\Server\4.0\bin" and Type Command:

`mongoimport --db <Db_Name> --collection <collection_name> --file "json_file_path"` **& Hit Enter**

Document Will be Inserted From Json File to MongoDB.

Output:

```
C:\Program Files\MongoDB\Server\4.0\bin>mongoimport --db jsontest --collection jsondata
--file C:\Users\Admin\Desktop\file.json
2022-10-20T04:19:50.251+0530    connected to: localhost
2022-10-20T04:19:50.619+0530    imported 1 document
```

```
> use jsontest
switched to db jsontest
> show collections
jsondata
> db.jsondata.find()
{ "_id" : ObjectId("63507f0e7d4bb02f72493985"), "Name" : "Test", "Class" : "TY", "Sem" : 5 }
>
```

Practical No:9 – Create a JSON file and import it to MongoDB

Steps:

1. **Open Cmd**
2. **Type cd C:\Program Files\MongoDB\Server\4.0\bin**
3. **Run command to export data into json file**
   Command:

```
mongoexport --db <Db_Name> --collection <collection_name>
--out "Any_File_Name_With_Path" --jsonArray –pretty
```

4. **All the Data will be exported into Json File.**

Output:

```
C:\Program Files\MongoDB\Server\4.0\bin>mongoexport --db test --collection school
--out C:\Users\Admin\Desktop\exported_Data.json --jsonArray --pretty
2022-10-20T04:28:34.832+0530    connected to: localhost
2022-10-20T04:28:34.895+0530    exported 6 records
```

Json File:

test.html | file.json | exported_Data.json

```
[{
    "_id": 101,
    "Name": "Stud 1",
    "Roll": 1,
    "Gender": "Male",
    "Age": "18"
},
{
    "_id": 102,
    "Name": "Stud 2",
    "Roll": 2,
    "Gender": "Male",
    "Age": 20
},
{
    "_id": 104,
    "Name": "Stud 4",
    "Roll": 4,
    "Gender": "Female",
    "Age": 21
},
{
    "_id": 105,
    "Name": "Stud 5",
    "Roll": 5,
    "Gender": "Female",
    "Age": 15
},
{
    "_id": 106,
    "Name": "Stud 6",
    "Roll": 6,
    "Gender": "Male",
    "Age": 16
}
```