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Batch : MERN 1

Experiment No. : 3

Title: Implementation of MongoDB, Node.js and Express.js.

Problem statement: Consider the basic concepts of Node.js Express.js and MongoDB, which are useful in the creation of an application. Consider the Company as database and create collection as employee. So make use of Node.js and MongoDB to perform following CRUD operations

- 1) Connecting to the Database (show using code and create collection in same database).
- 2) Create a Document.(make use of Insert one and insert())
- 3) Retrieving all Documents.(Create your own document using code only)
- 4) Find documents with Query Filter and regular expression.(Use as per the document you have created)
- 5) Update the Document using different options available.
- 6) Delete the document and drop collection as well

ANS)

- 1) Connecting to the Database (show using code and create collection in same database).

Code:

```
var MongoClient=require('mongodb').MongoClient;
var url='mongodb://localhost:27017/';
MongoClient.connect(url,(err,db)=>{
  if(err)
  {
    console.log(err);
    throw err;
  }
  else
  {
    console.log("Connection Established!!")
    var dbase=db.db('Company');
    dbase.createCollection('Employee',(err,res)=>{
      if(err)
      {
        console.log(err);
      }
      else
      {

```

```

        console.log("Collection created!!!");
        console.log(dbase.databaseName);
    }
    db.close();
})
}
})

```

Output:

Database Name	Storage Size
Company	4.0KB
MERN	300.0KB

Collection Name ^	Documents
Employee	0

```

PS D:\KJSCE\SEM 5\MERN LAB 1\1
Connection Established!!
Collection created!!!
Company
undefined

```

2) Create a Document.(make use of Insert one and insert())

Insert One:

Code:

```

var MongoClient=require('mongodb').MongoClient;
var url='mongodb://localhost:27017/';
MongoClient.connect(url,(err,db)=>{
    if(err)
    {
        console.log(err);
        throw err;
    }
    else
    {

```

```

    console.log("Connection Established!!")
    var obj={name: "Keish", age: "23", address:"Ghatkopar"};
    var dbase=db.db('Company');
    dbase.collection('Employee').insertOne(obj,(err,res)=>{
        if(err)
        {
            console.log(err);
        }
        else
        {
            console.log("Collection inserted using insertone!!!");
            db.close();
        }
    })
}
})

```

Output:

```

PS D:\KJSCE\Sem 5\MERN LAB 1\14 MERN Course Tuesday 12 October> node .\2insert.js
Connection Established!!
Collection inserted using insertone!!!

```

The screenshot shows the MongoDB Compass interface for the 'Company.Employee' collection. The 'Documents' tab is selected, showing a single document with the following fields: `_id` (ObjectId), `name` (Keish), `age` (23), and `address` (Ghatkopar). The interface includes a filter bar, an 'ADD DATA' button, and view options (list, JSON, grid).

Insert:

Code:

```

var MongoClient=require('mongodb').MongoClient;
var url='mongodb://localhost:27017/';
MongoClient.connect(url,(err,db)=>{
    if(err)
    {
        console.log(err);
        throw err;
    }
    else

```

```

{
  console.log("Connection Established!!")
  var obj=[{name: "Triven", age: "31", address:"Vidyavihar"},{name:
"Robert", age: "18", address:"US"},{name: "Kannady", age: "21",
address:"Paris"}];
  var dbase=db.db('Company');
  dbase.collection('Employee').insert(obj,(err,res)=>{
    if(err)
    {
      console.log(err);
    }
    else
    {
      console.log("Collection inserted using insert!!!");
      db.close();
    }
  })
}
})

```

Output:

```

PS D:\KJSCE\Sem 5\MERN LAB 1\14 MERN Course Tuesday 12 October> node .\2insert.js
Connection Established!!
(node:12408) [MONGODB DRIVER] Warning: collection.insert is deprecated. Use insertOne, insertMany or bulkWrite instead.
(Use `node --trace-warnings ...` to show where the warning was created)
Collection inserted using insert!!!

```

Company.Employee DOCUMENTS 0

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER { field: 'value' }

ADD DATA **VIEW**

<pre> _id: ObjectId("6165474da2234c8f4320c3b9") name: "Keish" age: "23" address: "Ghatkopar" </pre>
<pre> _id: ObjectId("616547bda8b5f18ab8e55078") name: "Triven" age: "31" address: "Vidyavihar" </pre>
<pre> _id: ObjectId("616547bda8b5f18ab8e55079") name: "Robert" age: "18" address: "US" </pre>
<pre> _id: ObjectId("616547bda8b5f18ab8e5507a") name: "Kannady" age: "21" address: "Paris" </pre>

3) Retrieving all Documents.(Retrieve your own document using code only)

Code:

```
var MongoClient=require('mongodb').MongoClient;
var url="mongodb://localhost:27017/"
MongoClient.connect(url,(err,db)=>{
  if(err)
  {
    throw err;
  }
  else
  {
    console.log("Connection Established!!");
    var dbase=db.db('Company');
    dbase.collection('Employee').find({}).toArray((err,result)=>{
      if(err)
      {
        throw err;
      }
      else
      {
        console.log("The documents in the collection are : ");
        console.log(result);
        db.close();
      }
    })
  }
})
})
```

Output:

```
PS D:\KJSCE\Sem 5\MERN LAB 1\14 MERN Course Tuesday 12 October> node .\3retrieve.js
Connection Established!!
The documents in the collection are :
[
  {
    _id: new ObjectId("6165474da2234c8f4320c3b9"),
    name: 'Keish',
    age: '23',
    address: 'Ghatkopar'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e55078"),
    name: 'Triven',
    age: '31',
    address: 'Vidyavihar'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e55079"),
    name: 'Robert',
    age: '18',
    address: 'US'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e5507a"),
    name: 'Kannady',
    age: '21',
    address: 'Paris'
  }
]
```

4) Find documents with Query Filter and regular expression.(Use as per the document you have created)

Code:

```
var MongoClient=require('mongodb').MongoClient;
var url="mongodb://localhost:27017/"
MongoClient.connect(url,(err,db)=>{
  if(err)
  {
    throw err;
  }
  else
  {
    console.log("Connection Established!!");
    var dbase=db.db('Company');
    var query={age: /^2/};
    dbase.collection('Employee').find(query).toArray((err,result)=>{
      if(err)
      {
        throw err;
      }
      else
      {
        console.log("The documents in the collection matching regex
are : ");
        console.log(result);
        db.close();
      }
    })
  }
})
})
```

Output:

```
PS D:\KJSCE\Sem 5\MERN LAB 1\14 MERN Course Tuesday 12 October> node .\4quereg.js
Connection Established!!
The documents in the collection matching regex are :
[
  {
    _id: new ObjectId("6165474da2234c8f4320c3b9"),
    name: 'Keish',
    age: '23',
    address: 'Ghatkopar'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e5507a"),
    name: 'Kannady',
    age: '21',
    address: 'Paris'
  }
]
```

5) Update the Document using different options available.

UpdateOne:

Code:

```
var MongoClient=require('mongodb').MongoClient;
var url='mongodb://localhost:27017/';
MongoClient.connect(url,(err,db)=>{
  if(err)
  {
    console.log(err);
    throw err;
  }
  else
  {
    console.log("Connection Established!!")
    var dbase=db.db('Company');
    dbase.collection('Employee').updateOne({
      "name": "Keish"
    },
    {
      $set:
      {
        "name": "Krish"
      }
    });
    console.log("Document updated!!!")
    dbase.collection('Employee').find({}).toArray((err,result)=>{
      if(err)
      {
        throw err;
      }
      else
      {
        console.log("The documents in the collection are : ");
        console.log(result);
        db.close();
      }
    })
  }
})
})
```

Output:

```
PS D:\KJSCE\Sem 5\MERN LAB 1\14 MERN Course Tuesday 12 October> node .\update.js
Connection Established!!
Document updated!!!
The documents in the collection are :
[
  {
    _id: new ObjectId("6165474da2234c8f4320c3b9"),
    name: 'Krish',
    age: '23',
    address: 'Ghatkopar'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e55078"),
    name: 'Triven',
    age: '31',
    address: 'Vidyavihar'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e55079"),
    name: 'Robert',
    age: '18',
    address: 'US'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e5507a"),
    name: 'Kannady',
    age: '21',
    address: 'Paris'
  }
]
```

UpdateMany:

Code:

```
var MongoClient=require('mongodb').MongoClient;
var url='mongodb://localhost:27017/';
MongoClient.connect(url,(err,db)=>{
  if(err)
  {
    console.log(err);
    throw err;
  }
  else
  {
    console.log("Connection Established!!")
    var dbase=db.db('Company');
    dbase.collection('Employee').updateMany({
      age: /^2/
    },
    {
```



```

        $set:
        {
            "address": "Somaiya"
        }
    });
    console.log("Document updated!!!")
    dbase.collection('Employee').find({}).toArray((err,result)=>{
        if(err)
        {
            throw err;
        }
        else
        {
            console.log("The documents in the collection are : ");
            console.log(result);
            db.close();
        }
    })
}
})

```

Output:

```

PS D:\KJSCE\Sem 5\MERN LAB 1\14 MERN Course Tuesday 12 October> node .\5update.js
Connection Established!!
Document updated!!!
The documents in the collection are :
[
  {
    _id: new ObjectId("6165474da2234c8f4320c3b9"),
    name: 'Krish',
    age: '23',
    address: 'Somaiya'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e55078"),
    name: 'Triven',
    age: '31',
    address: 'Vidyavihar'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e55079"),
    name: 'Robert',
    age: '18',
    address: 'US'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e5507a"),
    name: 'Kannady',
    age: '21',
    address: 'Somaiya'
  }
]

```

6) Delete the document and drop collection as well

Delete document:

Code:

```
var MongoClient=require('mongodb').MongoClient;
var url='mongodb://localhost:27017/';
MongoClient.connect(url,(err,db)=>{
  if(err)
  {
    console.log(err);
    throw err;
  }
  else
  {
    console.log("Connection Established!!");
    var query={name: "Krish"};
    var dbase=db.db('Company');
    dbase.collection('Employee').deleteOne(query,(err,result)=>{
      if(err)
      {
        console.log(err);
      }
      else
      {
        console.log("Document removed!!!");
      }
    })
    dbase.collection('Employee').find({}).toArray((err,result)=>{
      if(err)
      {
        throw err;
      }
      else
      {
        console.log("The documents in the collection are : ");
        console.log(result);
        db.close();
      }
    })
  }
})
})
```

Output:

```
PS D:\KJSCE\Sem 5\MERN LAB 1\14 MERN Course Tuesday 12 October> node .\6delete.js
Connection Established!!
Document removed!!!
The documents in the collection are :
[
  {
    _id: new ObjectId("616547bda8b5f18ab8e55078"),
    name: 'Triven',
    age: '31',
    address: 'Vidyavihar'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e55079"),
    name: 'Robert',
    age: '18',
    address: 'US'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e5507a"),
    name: 'Kannady',
    age: '21',
    address: 'Somaiya'
  }
]
```

DeleteMany:

Code:

```
var MongoClient=require('mongodb').MongoClient;
var url='mongodb://localhost:27017/';
MongoClient.connect(url,(err,db)=>{
  if(err)
  {
    console.log(err);
    throw err;
  }
  else
  {
    console.log("Connection Established!!");
    var query={age: /^2/};
    var dbase=db.db('Company');
    dbase.collection('Employee').deleteMany(query,(err,result)=>{
      if(err)
      {
        console.log(err);
      }
      else
      {
        console.log("Document removed!!!");
      }
    });
  }
});
```

```

    }
  })
  dbase.collection('Employee').find({}).toArray((err,result)=>{
    if(err)
    {
      throw err;
    }
    else
    {
      console.log("The documents in the collection are : ");
      console.log(result);
      db.close();
    }
  })
}
})

```

Output:

```

PS D:\KJSCE\Sem 5\MERN LAB 1\14 MERN Course Tuesday 12 October> node .\6delete.js
Connection Established!!
Document removed!!!
The documents in the collection are :
[
  {
    _id: new ObjectId("616547bda8b5f18ab8e55078"),
    name: 'Triven',
    age: '31',
    address: 'Vidyavihar'
  },
  {
    _id: new ObjectId("616547bda8b5f18ab8e55079"),
    name: 'Robert',
    age: '18',
    address: 'US'
  }
]

```

Drop collection:

Code:

```

var MongoClient=require('mongodb').MongoClient;
var url="mongodb://localhost:27017/"
MongoClient.connect(url,(err,db)=>{
  if(err)
  {
    throw err;
  }
  else
  {
    console.log("Connection Established!!");
  }
}
)

```

```

var dbase=db.db('Company');
dbase.collection('Employee').drop((err,result)=>{
  if(err)
  {
    throw err;
  }
  else
  {
    console.log("Collection removed!!");
    db.close();
  }
})
}
})

```

Output:

```

PS D:\KJSCE\Sem 5\MERN LAB 1\14 MERN Course Tuesday 12 October> node .\6delete.js
Connection Established!!
Collection removed!!

```

Collections						
CREATE COLLECTION						
Collection Name ^	Documents	Avg. Document Size	Total Document Size	Num. Indexes	Total Index Size	Properties