Exercise - Create an application to establish a connection with the MySQL database and perform basic database operations on it

Implementation:
Program:

db1.js : Create Database using Node.js

```
// Import the MySQL module
var mysql = require('mysql');

// Establish a connection to the MySQL server
var con = mysql.createConnection({
   // Specify the host address of the MySQL server
   host: 'localhost',
   // Provide the username for accessing the MySQL server
   user: 'root',
   // Enter the password for the specified user
   password: '',
});

// Connect to the MySQL server using the established connection object
con.connect(function(err) {
   if (err) {
      // Handle any errors that occur during connection
      throw err;
   }

   console.log('Connected to MySQL database');

   // Define the SQL query to create a new database named 'employee1'
   var sql1 = 'CREATE DATABASE empDB1';

   // Execute the SQL query using the connection object
   con.query(sql1, function(err, result) {
      if (err) {
         // Handle any errors that occur during query execution
         throw err;
      }
      console.log('Database created successfully');
   });
});
```

Output:

```
Database undefined created successfully
PS G:\MCA-Web-main\MCA-Web-main\NodeJsOperationsOnSql> node db1.js
Connected to MySQL database
Database created successfully
```

db2.js : Create Table using Node.js

```
// Import the MySQL module
var mysql = require('mysql');

// Establish a connection to the MySQL server, specifying the database 'empDB1'
var con = mysql.createConnection({
   // Specify the host address of the MySQL server
   host: 'localhost',
   // Provide the username for accessing the MySQL server
   user: 'root',
   // Enter the password for the specified user
   password: '',
   // Specify the database to connect to
   database: 'empDB1'
});

// Connect to the MySQL server using the established connection object
con.connect(function(err) {
   if (err) {
      // Handle any errors that occur during connection
      throw err;
   }

   console.log('Connected to MySQL database');

   // Define the SQL query to create a new table named 'empinfo'
   var sql1 = 'CREATE TABLE empinfo(id int(10), fname varchar(20), lname
varchar(20), address varchar(50), salary int(20))';

   // Execute the SQL query using the connection object
   con.query(sql1, function(err, result) {
      if (err) {
         // Handle any errors that occur during query execution
         throw err;
      }

      console.log('Table created successfully');
   });
});
```

Output:

```
PS G:\MCA-Web-main\MCA-Web-main\NodeJsOperationsOnSql> node db2.js
Connected to MySQL database
Table created successfully
```

multiRecord.js : Insert Multiple records into Table

```
// Import the MySQL module
var mysql = require('mysql');

// Establish a connection to the MySQL server, specifying the database 'empDB1'
var con = mysql.createConnection({
   host: 'localhost',
   user: 'root',
   password: '',
   database: 'empDB1'
});

// Connect to the MySQL server using the established connection object
con.connect(function(err) {
   if (err) {
      // Handle any errors that occur during connection
      throw err;
   }

   console.log('Connected to MySQL database');

   // Prepare the SQL query to insert multiple records into the 'empinfo' table
   var sql = 'INSERT INTO empinfo (id, fname, lname, address, salary) VALUES ?';

   // Define the array of records to be inserted
   var records = [
      [1, 'John', 'Doe', '123 Main Street', 50000],
      [2, 'Jane', 'Smith', '456 Elm Street', 60000],
      [3, 'Peter', 'Jones', '789 Oak Street', 70000]
   ];

   // Execute the SQL query using the connection object and the array of records
   con.query(sql, [records], function(err, result) {
      if (err) {
         // Handle any errors that occur during query execution
         throw err;
      }
         // To check how many records affected by the operation
      console.log('Number of records inserted:', result.affectedRows);
   });
});
```

Output:

```
PS G:\MCA-Web-main\MCA-Web-main\NodeJsOperationsOnSql> node multiRecord.js
Connected to MySQL database
Number of records inserted: 3
```

Db.js : Select or Fetch the Records from the Table

```
// Import the MySQL module
var mysql = require('mysql');

// Establish a connection to the MySQL server, specifying the database 'empDB1'
var con = mysql.createConnection({
   host: 'localhost',
   user: 'root',
   password: '',
   database: 'empDB1'
});

// Connect to the MySQL server using the established connection object
con.connect(function(err) {
   if (err) {
      // Handle any errors that occur during connection
      throw err;
   }

   console.log('Connected to MySQL database');

   // Define the SQL query to select all records from the 'empinfo' table
   var sql1 = 'SELECT * FROM empinfo';

   // Execute the SQL query using the connection object
   con.query(sql1, function(err, result) {
      if (err) {
         // Handle any errors that occur during query execution
         throw err;
      }

      console.log('Employee Data:');
      console.table(result);
   });
});
```

Output:

```
PS G:\MCA-Web-main\MCA-Web-main\NodeJsOperationsOnSql> node db.js
Connected to MySQL database
Employee Data:
```

(index)	id	fname	lname	address	salary
0	1	'John'	'Doe'	'123 Main Street'	50000
1	2	'Jane'	'Smith'	'456 Elm Street'	60000
2	3	'Peter'	'Jones'	'789 Oak Street'	70000

Db5.js : Update record in the Table

```
// Import the MySQL module
var mysql = require('mysql');

// Establish a connection to the MySQL server, specifying the database 'employee1'
var con = mysql.createConnection({
    host: 'localhost',
    user: 'root',
    password: '',
    database: 'empDB1'
});

// Connect to the MySQL server using the established connection object
con.connect(function(err) {
    if (err) {
        // Handle any errors that occur during connection
        throw err;
    }

    console.log('Connected to MySQL database');

    // Define the SQL query to update the address of an employee
    var sql1 = "UPDATE empinfo SET address = 'Talere' WHERE address = '123 Main
Street'";

    // Execute the SQL query using the connection object
    con.query(sql1, function (err, result) {
        if (err) {
            // Handle any errors that occur during query execution
            throw err;
        }

        console.log(result.affectedRows + " record(s) updated");
    });
});
```

Output:

```
PS G:\MCA-Web-main\MCA-Web-main\NodeJsOperationsOnSql> node db5.js
Connected to MySQL database
1 record(s) updated
```

Db6.js : Sort the record in the Table

```
// Import the MySQL module
var mysql = require('mysql');

// Establish a connection to the MySQL server, specifying the database 'employee1'
var con = mysql.createConnection({
  host: 'localhost',
  user: 'root',
  password: '',
  database: 'empDB1'
});

// Connect to the MySQL server using the established connection object
con.connect(function (err) {
  if (err) throw err;

  // Define the SQL query to select all records from the 'empinfo' table and order them
by 'fname'
  var sql1 = "SELECT * FROM empinfo ORDER BY fname";

  // Execute the SQL query using the connection object
  con.query(sql1, function (err, result) {
    if (err) throw err;

    console.log('Employee Data sorted by first name:');
    console.table(result);
  });
});
```

Output:

```
PS G:\MCA-Web-main\MCA-Web-main\NodeJsOperationsOnSql> node db6.js
Employee Data sorted by first name:
```

(index)	id	fname	lname	address	salary
0	2	'Jane'	'Smith'	'456 Elm Street'	60000
1	1	'John'	'Doe'	'Talere'	50000
2	3	'Peter'	'Jones'	'789 Oak Street'	70000

Db4.js : Delete the Table or We can say drop the Table

```
// Import the MySQL module
var mysql = require('mysql');

// Establish a connection to the MySQL server, specifying the database 'employee1'
var con = mysql.createConnection({
  host: 'localhost',
  user: 'root',
  password: '',
  database: 'empDB1'
});

// Connect to the MySQL server using the established connection object
con.connect(function (err) {
  if (err) throw err;

  console.log('Connected to MySQL database');

  // Define the SQL query to drop the 'empinfo' table
  var sql1 = 'DROP TABLE empinfo';

  // Execute the SQL query using the connection object
  con.query(sql1, function (err, result) {
    if (err) throw err;

    console.log('Table empinfo deleted successfully...');
  });
});
```

Output:

```
PS G:\MCA-Web-main\MCA-Web-main\NodeJsOperationsOnSql> node db4.js
Connected to MySQL database
Table empinfo deleted successfully...
```