Node.js Examples – Basic Examples, Module Examples, Advanced Examples

Node.js Examples

Node.js Examples : We shall go through examples of basics, fs module, mysql module, http module, url module, parsing json, etc. with Node.js.

Following is the list of Node.js Examples we shall go through in this Node.js Tutorial :

Module/Topic	Examples
Basics	◦ Node.js Example – HelloWorld ◦ Node.js Example – Create a Module
File System	◦ Node.js Example – Create a File ◦ Node.js Example – Read a File ◦ Node.js Example – Write to a File ◦ Node.js Example – Delete a File
MySQL	◦ Node.js Example – Connect to MySQL Database ◦ Node.js Example – SELECT FROM Table ◦ Node.js Example – SELECT from Table with WHERE clause ◦ Node.js Example – ORDER entries BY a column ◦ Node.js Example – INSERT entries INTO Table ◦ Node.js Example – UPDATE Table Entries ◦ Node.js Example – DELETE Table Entries ◦ Node.js Example – Using Result Object
URL	◦ Node.js Example – Parse URL Parameters
JSON	◦ Node.js Example – Parse JSON File
HTTP	◦ Node.js Example – Create HTTP Web Server

Node.js Example : Simple Node.js Example

Following is a simple **Node.js Example** to print a message to console.

verifyNode.js

```
console.log("Hi there! This is Node.js!")
```

```
$ node verifyNode.js
Hi there! This is Node.js!
```

Node.js Example : Create a Module

Following is **Node.js Example** where we create a Calculator Node.js Module with functions add, subtract and multiply. And use the Calculator module in another Node.js file.

calculator.js

```
// Returns addition of two numbers
exports.add = function (a, b) {
   return a+b;
};

// Returns difference of two numbers
exports.subtract = function (a, b) {
   return a-b;
};

// Returns product of two numbers
exports.multiply = function (a, b) {
   return a*b;
};
```

moduleExample.js

```
var calculator = require('./calculator');
```

```
var calculator = require('./calculator');

var a=10, b=5;

console.log("Addition : "+calculator.add(a,b));
console.log("Subtraction : "+calculator.subtract(a,b));
console.log("Multiplication : "+calculator.multiply(a,b));
```

```
$ node
moduleExample.js
```

```
$ node moduleExample.js
Addition : 15
Subtraction : 5
Multiplication : 50
```

Node.js Example : Create a File

Following Node.js Example creates a file with data provided.

readFileExample.js

```
// include node fs
module
```

```
// include node fs module
var fs = require('fs');
var data ='Learn Node FS module';

// writeFile function with filename, content and callback function
fs.writeFile('newfile.txt', data, function (err) {
  if (err) throw err;
  console.log('File is created successfully.');
});
```

Run the program using node command in terminal or command prompt :

Terminal Output

```
$ node
createFileExample.js
```

```
$ node createFileExample.js
File is created successfully.
```

The file should be created next to your example node.js program with the content ‘Learn Node FS module’.

Node.js Example : Read a File

readFileExample.js

```
// include file system module
var fs = require('fs');

// read file sample.html
fs.readFile('sample.html',
    // callback function that is called when reading file is done
    function(err, data) {
        if (err) throw err;
        // data is a buffer containing file content
        console.log(data.toString('utf8'))
});
```

Run the program using node command in terminal or command prompt :

Terminal Output

```
$ node readFileExample.js
<html>
<body>
<h1>Header</h1>
<p>I have learnt to read a file in Node.js.</p>
</body>
</html>
```

Node.js Example : Delete a File

make sure there is a file named ‘sample.txt’ next to the node.js example program.

deleteFile.js

```
// include node fs module
```

```
// include node fs module
var fs = require('fs');

// delete file named 'sample.txt'
fs.unlink('sample.txt', function (err) {
    if (err) throw err;
    // if no error, file has been deleted successfully
    console.log('File deleted!');
});
```

Run the program using node command in terminal or command prompt :

Terminal Output

```
$ node deleteFile.js
File deleted!
```


```
$ node deleteFile.js
File deleted!
```


The file is successfully deleted.

Node.js Example : Write to a File

In this example, we shall write content, “Hello !” , to a text file sample.txt.

nodejs-write-to-file-example.js

```
// include file system module
```

```
// include file system module

var fs = require('fs');

var data = "Hello !"

// write data to file sample.html
fs.writeFile('sample.txt',data,
    // callback function that is called after writing file is done
    function(err) {
        if (err) throw err;
        // if no error
        console.log("Data is written to file successfully.")
});
```

When the above program is run in Terminal,

Program Output

```
arjun@arjun-
```

```
arjun@arjun-VPCEH26EN:~/workspace/nodejs$ node nodejs-write-to-file-example.js
Data is written to file successfully.
```

NodeJS Example – Connect to MySQL Database

connectToMySQL.js - Connect to MySQL database in Node.js

```
// include mysql module
```

```
// include mysql module
var mysql = require('mysql');

// create a connection variable with the details required
var con = mysql.createConnection({
  host: "localhost", // ip address of server running mysql
  user: "arjun", // user name to your mysql database
  password: "password" // corresponding password
});

// connect to the database.
con.connect(function(err) {
  if (err) throw err;
  console.log("Connected!");
});
```

```
$ node
```

```
$ node connectToMySQL.js
Connected!
```

NodeJS Example – SELECT FROM Table

selectFromTable.js Simple example to MySQL SELECT FROM query

```
// Node.js MySQL
```

```
// Node.js MySQL SELECT FROM query Example
// include mysql module
var mysql = require('mysql');

// create a connection variable with the required details
var con = mysql.createConnection({
  host: "localhost", // ip address of server running mysql
  user: "arjun", // user name to your mysql database
  password: "password", // corresponding password
  database: "studentsDB" // use the specified database
});

// make to connection to the database.
con.connect(function(err) {
  if (err) throw err;
  // if connection is successful
  con.query("SELECT * FROM students", function (err, result, fields) {
    // if any error while executing above query, throw error
    if (err) throw err;
    // if there is no error, you have the result
    console.log(result);
  });
});
```

```
$ node
selectFromTable.js
```

```
$ node selectFromTable.js
[ RowDataPacket { name: 'John', rollno: 1, marks: 74 },
  RowDataPacket { name: 'Arjun', rollno: 2, marks: 74 },
  RowDataPacket { name: 'Prasanth', rollno: 3, marks: 77 },
  RowDataPacket { name: 'Adarsh', rollno: 4, marks: 78 },
  RowDataPacket { name: 'Raja', rollno: 5, marks: 94 },
  RowDataPacket { name: 'Sai', rollno: 6, marks: 84 },
  RowDataPacket { name: 'Ross', rollno: 7, marks: 54 },
  RowDataPacket { name: 'Monica', rollno: 8, marks: 86 },
  RowDataPacket { name: 'Lee', rollno: 9, marks: 98 },
  RowDataPacket { name: 'Bruce', rollno: 10, marks: 92 },
  RowDataPacket { name: 'Sukumar', rollno: 11, marks: 99 } ]
```

NodeJS Example – SELECT from Table with WHERE clause

We shall apply a filter based on marks and fetch only those records with marks greater than 90.

selectFromWhere.js

```
// include mysql module
var mysql = require('mysql');

// create a connection variable with the required details
var con = mysql.createConnection({
  host: "localhost", // ip address of server running mysql
  user: "arjun", // user name to your mysql database
  password: "password", // corresponding password
  database: "studentsDB" // use the specified database
});

// make to connection to the database.
con.connect(function(err) {
  if (err) throw err;
  // if connection is successful
  con.query("SELECT * FROM students where marks>90", function (err, result, fields) {
    // if any error while executing above query, throw error
    if (err) throw err;
    // if there is no error, you have the result
    console.log(result);
  });
});
```

Open a terminal from the location of above .js file and run selectFromWhere.js Node.js MySQL example program.

```
arjun@arjun-VPCEH26EN:~/workspace/nodejs$ node selectFromWhere.js
[ RowDataPacket { name: 'Raja', rollno: 5, marks: 94 },
  RowDataPacket { name: 'Lee', rollno: 9, marks: 98 },
  RowDataPacket { name: 'Bruce Wane', rollno: 10, marks: 92 },
  RowDataPacket { name: 'Sukumar', rollno: 11, marks: 99 } ]
```

NodeJS Example – ORDER entries BY a column

An example to sort entries in ascending order w.r.t a column.

AscOrderExample.js

```
// include mysql module
```

```
// include mysql module
var mysql = require('mysql');

// create a connection variable with the required details
var con = mysql.createConnection({
  host: "localhost", // ip address of server running mysql
  user: "arjun", // user name to your mysql database
  password: "password", // corresponding password
  database: "studentsDB" // use the specified database
});

// make to connection to the database.
con.connect(function(err) {
  if (err) throw err;
  // if connection is successful
  con.query("SELECT * FROM students ORDER BY marks", function (err, result, fields) {
    // if any error while executing above query, throw error
    if (err) throw err;
    // if there is no error, you have the result
    console.log(result);
  });
});
```

Run the above Node.js MySQL ORDER BY example program.

```
arjun@arjun-
```

```
arjun@arjun-VPCEH26EN:~/workspace/nodejs$ node AscOrderExample.js
[ RowDataPacket { name: 'Ross', rollno: 7, marks: 54 },
  RowDataPacket { name: 'John', rollno: 1, marks: 74 },
  RowDataPacket { name: 'Arjun', rollno: 2, marks: 74 },
  RowDataPacket { name: 'Prasanth', rollno: 3, marks: 77 },
  RowDataPacket { name: 'Adarsh', rollno: 4, marks: 78 },
  RowDataPacket { name: 'Sai', rollno: 6, marks: 84 },
  RowDataPacket { name: 'Monica Gellar', rollno: 8, marks: 86 },
  RowDataPacket { name: 'Bruce Wane', rollno: 10, marks: 92 },
  RowDataPacket { name: 'Raja', rollno: 5, marks: 94 },
  RowDataPacket { name: 'Lee', rollno: 9, marks: 98 },
  RowDataPacket { name: 'Sukumar', rollno: 11, marks: 99 } ]
```

The records are sorted in ascending order with respect to marks column.

NodeJS Example – INSERT entries INTO Table

```
// include mysql module
var mysql = require('mysql');

// create a connection variable with the required details
var con = mysql.createConnection({
  host: "localhost", // ip address of server running mysql
  user: "arjun", // user name to your mysql database
  password: "password", // corresponding password
  database: "studentsDB" // use the specified database
});

// make to connection to the database.
con.connect(function(err) {
  if (err) throw err;
  // if connection is successful
  con.query("INSERT INTO students (name,rollno,marks) values ('Anisha',12,95)", function (err, result, fields) {
    // if any error while executing above query, throw error
    if (err) throw err;
    // if there is no error, you have the result
    console.log(result);
  });
});
```

Run above Node.js MySQL program in Terminal.

```
arjun@arjun-VPCEH26EN:~/workspace/nodejs$ node InsertIntoExample.js
OkPacket {
  fieldCount: 0,
  affectedRows: 1,
  insertId: 0,
  serverStatus: 2,
  warningCount: 0,
  message: '',
  protocol41: true,
  changedRows: 0 }
```

Node.js Example – UPDATE Table Entries

UpdateRecordsFiltered.js - Update records of MySQL Table

```
// include mysql module
var mysql = require('mysql');

// create a connection variable with the required details
var con = mysql.createConnection({
  host: "localhost", // ip address of server running mysql
  user: "arjun", // user name to your mysql database
  password: "password", // corresponding password
  database: "studentsDB" // use the specified database
});

// make to connection to the database.
con.connect(function(err) {
  if (err) throw err;
  // if connection is successful
  con.query("UPDATE students SET marks=84 WHERE marks=74", function (err, result, fields) {
    // if any error while executing above query, throw error
    if (err) throw err;
    // if there is no error, you have the result
    console.log(result);
  });
});
```

Run the above program in Terminal

Terminal Output

```
arjun@arjun-VPCEH26EN:~/workspace/nodejs$ node UpdateRecordsFiltered.js
OkPacket {
  fieldCount: 0,
  affectedRows: 3,
  insertId: 0,
  serverStatus: 34,
  warningCount: 0,
  message: '(Rows matched: 3  Changed: 3  Warnings: 0',
  protocol41: true,
  changedRows: 3 }
```

Node.js Example – DELETE Table Entries

Execute DELETE FROM query on specified table with filter applied on one or many properties of records in the

table.

deleteRecordsFiltered.js

```
// include mysql module
var mysql = require('mysql');

// create a connection variable with the required details
var con = mysql.createConnection({
  host: "localhost", // ip address of server running mysql
  user: "arjun", // user name to your mysql database
  password: "password", // corresponding password
  database: "studentsDB" // use the specified database
});

// make connection to the database.
con.connect(function(err) {
  if (err) throw err;
  // if connection is successful
  con.query("DELETE FROM students WHERE rollno>10", function (err, result, fields) {
    // if any error while executing above query, throw error
    if (err) throw err;
    // if there is no error, you have the result
    console.log(result);
  });
});
```

Run deleteRecordsFiltered.js - Terminal Output

```
arjun@arjun-VPCEH26EN:~/workspace/nodejs$ node deleteRecordsFiltered.js
OkPacket {
  fieldCount: 0,
  affectedRows: 6,
  insertId: 0,
  serverStatus: 34,
  warningCount: 0,
  message: '',
  protocol41: true,
  changedRows: 0 }
```

Node.js Example – Using Result Object

We can access the records in Result Set as an array and properties of a record using DOT (.) Operator.

selectUseResultObject.js - Access rows and column data of result set

```
// Node.js MySQL
Result Object
```

```
// Node.js MySQL Result Object Example
// include mysql module
var mysql = require('mysql');
// create a connection variable with the required details
var con = mysql.createConnection({
  host: "localhost", // ip address of server running mysql
  user: "arjun", // user name to your mysql database
  password: "password", // corresponding password
  database: "studentsDB" // use the specified database
});
// make to connection to the database.
con.connect(function(err) {
  if (err) throw err;
  // if connection is successful
  con.query("SELECT * FROM students", function (err, result, fields) {
    // if any error while executing above query, throw error
    if (err) throw err;
    // if there is no error, you have the result
    // iterate for all the rows in result
    Object.keys(result).forEach(function(key) {
      var row = result[key];
      console.log(row.name)
    });
  });
});
```

Run the above program using node in Terminal

Terminal Output

```
arjun@arjun-
VPCEH26EN:~/works
```

```
arjun@arjun-VPCEH26EN:~/workspace/nodejs$ node selectUseResultObject.js
John
Arjun
Prasanth
Adarsh
Raja
Sai
Ross
Monica
Lee
Bruce
Sukumar
```

Node.js Example – Parse URL Parameters

urlParsingExample.js - Node.js program to parse a URL into readable parts in Node.js

```
// include url module
var url = require('url');
var address = 'http://localhost:8080/index.php?type=page&action=update&id=5221';
var q = url.parse(address, true);

console.log(q.host); //returns 'localhost:8080'
console.log(q.pathname); //returns '/index.php'
console.log(q.search); //returns '?type=page&action=update&id=5221'

var qdata = q.query; // returns an object: { type: page, action: 'update',id='5221' }
console.log(qdata.type); //returns 'page'
console.log(qdata.action); //returns 'update'
console.log(qdata.id); //returns '5221'
```

Terminal Output

```
$ node urlParsingExample.js
localhost:8080
/index.php
?type=page&action=update&id=5221
page
update
5221
```

Node.js Example : Parse JSON File

Following example helps you to use JSON.parse() function and access the elements from JSON Object.

nodejs-parse-json.js

```
// json data
var jsonData = '{"persons":[{"name":"John","city":"New York"},{"name":"Phil","city":"Ohio"}]}';

// parse json
var jsonParsed = JSON.parse(jsonData);

// access elements
console.log(jsonParsed.persons[0].name);
```

Terminal Output for running nodejs-parse-json.js

```
arjun@arjun-VPCEH26EN:~/workspace/nodejs$ node nodejs-parse-json.js
John
```

Node.js Example : Create HTTP Web Server

Node.js Example – A HTTP Web Server that prepares a response with HTTP header and a message.

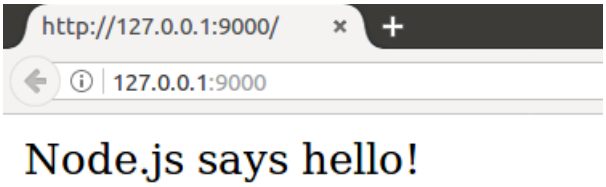
```
// include http module in the file
var http = require('http');

// create a server
http.createServer(function (req, res) {
    // http header
    // 200 - is the OK message
    // to respond with html content, 'Content-Type' should be 'text/html'
    res.writeHead(200, {'Content-Type': 'text/html'});
    res.write('Node.js says hello!'); //write a response to the client
    res.end(); //end the response
}).listen(9000); //the server object listens on port 9000
```

Run the Server

```
$ node
httpWebServer.js
```

```
$ node httpWebServer.js
```

Open a browser and hit the url, “http://127.0.0.1:9000/”, to trigger a request to our Web Server.



- Node.js Buffer - Length
- Node.js - Convert JSON to Buffer
- Node.js - Array to Buffer

Node.js HTTP

- Node.js - Create HTTP Web Server
- Node.js - Redirect URL

Node.js MySQL

- Node.js MySQL
- Node.js MySQL - Connect to MySQL Database
- Node.js MySQL - SELECT FROM
- Node.js MySQL - SELECT WHERE
- Node.js MySQL - ORDER BY
- Node.js MySQL - INSERT INTO
- Node.js MySQL - UPDATE
- Node.js MySQL - DELETE
- Node.js MySQL - Result Object

Node.js MongoDB

- Node.js MongoDB
- Node.js - Connect to MongoDB
- Node.js - Create Database in MongoDB
- Node.js - Drop Database in MongoDB
- Node.js - Create Collection in MongoDB
- Node.js - Delete Collection in MongoDB
- Node.js - Insert Documents to MongoDB Collection
- MongoError: failed to connect to server

Node.js Mongoose

- Node.js Mongoose Tutorial
- Node.js Mongoose - Installation
- Node.js Mongoose - Connect to MongoDB
- Node.js Mongoose - Define a Model
- Node.js Mongoose - Insert Single Document to MongoDB
- Node.js Mongoose - Insert Multiple Documents to MongoDB

Node.js URL