**SRI BALAJI UNIVERSITY, PUNE**

**SCHOOLOF COMPUTER STUDIES**

**Class: SYBCA Sem VI**

**Subject Name: Computer Laboratory of**

**Server Side Scripting using Node JS**

**Laboratory Subject Code: BCA606**

**Credit: 3**

**Server Side Scripting using Node JS Assignments**

| **Assignment No.** | **Assignment Name** |
| --- | --- |
| Assignment No- 1 | Downloads, Installation and setting up Environment for node.js |
| Assignment No- 2 | Understanding REPL Terminal |
| Assignment No- 3 | Implementing Node JS Core Modules |
| Assignment No- 4 | Implementing Node JS Local Modules |
| Assignment No- 5 | Implementing Node Js Third Party Modules |
| Assignment No- 6 | Understanding Node Package Manager |
| Assignment No- 7 | Understanding Buffer Data Operations |
| Assignment No- 8 | Illustrate Event Driven Applications |
| Assignment No- 9 | Understanding File System in Node Js |
| Assignment No- 10 | Image file handling using Node Js |
| Assignment No- 11 | Implementing Node JS with Web Server Applications Part 1 |
| Assignment No- 12 | Implementing Node JS with Web Server Applications Part 1I |
| Assignment No- 13 | Implementing Node JS with Database Programming Part I |
| Assignment No- 14 | Implementing Node JS with Database Programming Part II |
| Assignment No- 15 | Combining Node JS with Mongo DB |

**1. Assignment on Downloads, Installation and setting up Environment for node.js** 1. Download and Install Node.js from official website from https://nodejs.org

2. Download and install Editor visual studio code for node js from https://code.visualstudio.com/docs/nodejs/nodejs-tutorial

**Signature of the instructor:-------------------- Date:----------- Assignment Evaluation**

0: Not Done [ ] 1: Incomplete [ ] 2: Late Complete [ ]

3: Needs Improvement [ ] 4: Complete [ ] 5 : well done [ ]

**2] Assignment on Understanding REPL Terminal**

1. Write a Node JS program on to display different data type values. 2. Write a Node JS program to on REPL Terminal to display factorial of number.

3. Write a Node JS program to create JS script file to display multiplication of two number using function and display result on REPL Terminal.

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**Assignment Evaluation**

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3: Needs Improvement [ ] 4: Complete [ ] 5 : well done [ ]

**3] Assignment on Implementing Node JS Core Modules**

1. Write Node JS program to display Hostname and Platform details of current system on console. (Use OS module)

2. Write a Node JS program to create a JS script file that will convert the output "Hello World!" into upper-case letters and display result on Terminal.(use upper-case module)

3. Write a Node JS program to create a JS script file that displays output "SBUP-SCS" in color blue on Terminal. (use colors module)

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**4] Assignment on Implementing Node JS Local Modules**

1. Create a Node.js Application that uses user defined Module to return the Factorial of a of given number.

2. Create a Node.js Application that uses user defined module circle.js which exports functions area() and circumference() and display details on console.

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**5] Assignment on Implementing Node Js Third Party Modules**

1. Add third party module i. e. lodash

2. Calculate max, mean, round, time, etc. using third party module lodash

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**6] Assignment on Understanding Node Package Manager**

**1.** Run Version and other NPM commands

2. Create package.json in your project folder.

**3.** Display Package. Json file with default details (-y)

4. Configure json file set author name and license.

5. Display only author name from json file.

**6.** Create Nodejs Module and Publish Over to npm.

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**7] Assignment on Understanding Buffer Data Operations in Node Js.**

1. Create a Node.js Application that performs following operations on buffer data a. concat b.compare c. Copy

2. Create a Node.js Application that display alphabets a to z using buffer

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**8] Assignment on Illustrate Event Driven Applications.**

1. Create Node.js application to demonstrate various Node.js Events. 2. Write a node js program to print table of 10 and 11 using event emitter.

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**9] Assignment on Understanding File System in Node Js.**

1. Usng File Handling demonstrate all basic file operations (Create, write, append, read, delete)

2. Write node js program to Copy the contents of one file to another

3. Create a Node.js Application to check whether given name is directory or file, if it file, truncate the content after 7 bytes.

4. A create node.js application to count occurance of given word in a file & display count on console

5. A Create a Node.js application to search particular word in fille and display result on console.

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**10] Assignment on Image file handling using Node Js**

1. Create a Node.js Application to download jpg image from the Server. 2. A.Create a Node.js file that writes HTML form with an upload Image file.

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**11] Assignment on Implementing Node JS with Web Server Applications Part 1**

1. Write a node js program to create a web server and print below given pattern on web Browser.

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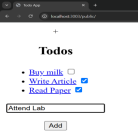
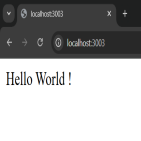
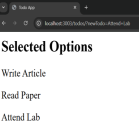
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**2.** Write a node js program to create a web server and print Fibonacci series on web Browser.

3. Create a Node.js Application that opens the requested file and returns the content to the client if anything goes wrong throw 404 error.

**12] Assignment on Implementing Node JS with Web Server Applications Part II**

1. Write a node js program to create a web application for ToDo list of daily work .Select work list and enter additional task. Display selected daily work to do list on separate webpage. 

2. Write a node js program to create a web application for accepting feedback form and display submitted details using express framework.

3. Write a node js program to create a web application to create a route (/data) that returns a JSON object containing a message and the current date using express framework. 4. Write a node js program to create a web application to create a route that accepts a dynamic parameter, such as /greet/:name, and returns a personalized greeting using express framework.

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**13]Implementing Node JS with Database Programming Part I**

1. Write a node js program to create a web application perform show , insert, delete ,update operation on table student using mysql with express js .

2. Write a node js program to create a web application for accepting Employee details like employee id ,name ,role, city country on web page and perform insert operation into table employee using mysql with express js .

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**14]Implementing Node JS with Database Programming Part II**

1. Write a node js program to perform basic CRUD (Create, Read, Update, Delete) operations on User Schema of name, email with MongoDB using Node.js..

∙ Implement a **Create** operation in Node.js to insert a new document into a MongoDB collection.

∙ Implement a **Read** operation to fetch all documents and fetch a document by its ID? ∙ Create a **Update** functionality to modify an existing document .

∙ Implement a **Delete** operation to remove a document.

2. Write a node js program to create web application to create following relational schema

∙ Create two MongoDB collections: Authors and Books.

∙ Use embedded documents for a "Books" collection that is inside the "Authors" document (One-to-Many).

∙ Create another approach using references where "Books" will have a reference to the "Author" (Many-to-One).

∙ Implement a Node.js API that allows creating authors and books .

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**15] Combining Node JS with Mongo DB**

Build a Mobile Shop Management System using MongoDB and Express.js that allows adding, viewing, updating, and deleting mobile phones in the inventory. Implement CRUD operations with an API to manage mobile data.

1. Add new mobiles to the inventory.

2. Fetch all mobiles and individual mobile details.

3. Update and delete mobile data.

∙ **Create Route**: Implement POST /api/mobiles/add to add new mobile data to the database.

∙ **Read Route**: Implement GET /api/mobiles to fetch all mobile entries. ∙ **Read Single Route**: Implement GET /api/mobiles/:id to fetch a specific mobile by ID. ∙ **Update Route**: Implement PUT /api/mobiles/:id to update mobile data by ID. ∙ **Delete Route**: Implement DELETE /api/mobiles/:id to delete a mobile by ID.

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