WD

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CSE B

Assignment No. 2 Unit No. 3 Date :

1. Explain briefly about node.js process model?

Ans 1. Node.js processes user requests differently when compared to a traditional web server model Node.js runs in a single process and the application code runs in a single thread and thereby need less resources than other platforms

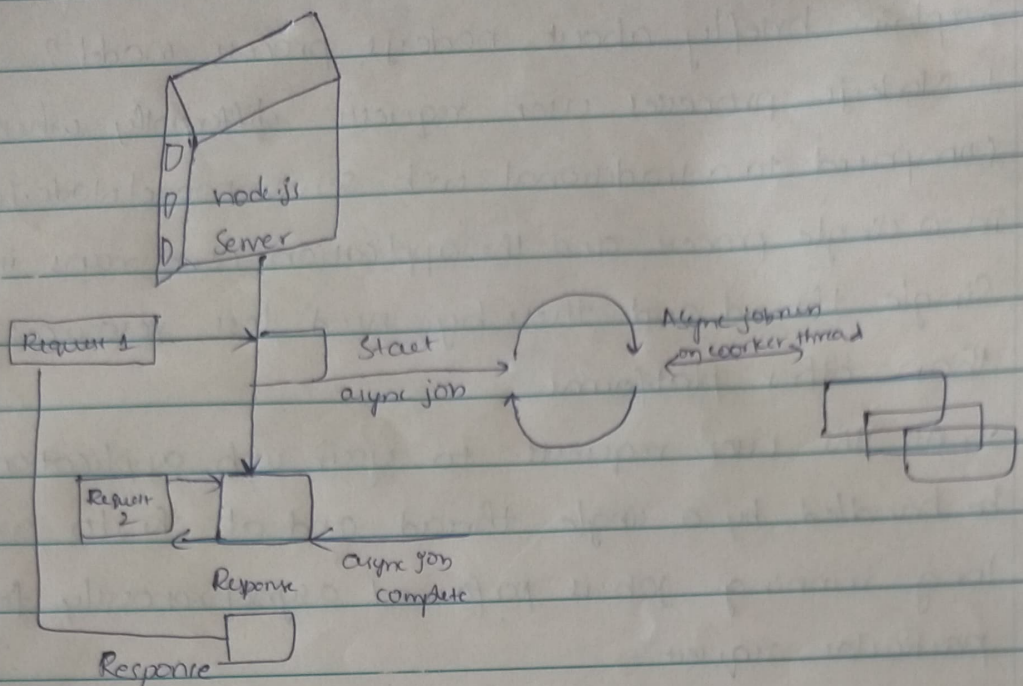
2. All the user requests to your web application will be handled by a single thread and all the i/o work or long running job is performed asynchronously for a particular request

3. So, the single thread doesn't have to wait for the request to complete and is free to handle the next request.

4. When asynchronous i/o work completes then it processes the request further and sends the response

5. An event loop is constantly watching for the events to be raised for an asynchronous job and executing callback function when the job completes.

6. Node.js process model increases the performance and scalability with a few caveats. Node.js is not fit for an application which performs cpu-intensive operations like image processing (or) other heavy computation work because it takes time to process a request and thereby blocks the single thread



2 Explain Node.js Modules briefly?

Ans Module in Node.js is a simple (or) complex functionality organised in single (or) multiple javascript files which can be reused throughout the Node.js application

Node.js includes three types of modules

1. core modules
2. local modules
3. Third party modules

1. Node.js core modules :-

Node.js is a light weight framework. The core modules includes bare minimum functionality of Node.js. These are modules are compiled into its binary distribution and load automatically when node.js process starts

The following table with some of the core modules

core module	Description
1. http	http module includes, classes metho

2. Url — url module includes methods for url resolution

3. query string — querystring module includes methods to deal with query string

Node.js local Module:

local modules are modules created locally in your Node.js application. These modules includes different functionalities of your application in seperate files and folders writing simple module

log.js

copy

```
var log = {
    info: function (info) {
        console.log('info:' + info);
    },
    warning: function (warning) {
        console.log('warning:' + warning);
    },
    error: function (error) {
        console.log('Error:' + error);
    }
};
module.exports = log
```

Export module in Node.js:-

The module exports is a special object which is included in every javascript file in the node.js application by default. The module is a variable that represents the current module and exports is an object.

3. Explain the process of creation of Node.js web server with example?

Ans To access web pages of any web application, you need web server. The web server will handle all the http requests for the web application

Create Node.js webserver:-

Node.js makes it easy to create a simple web server. The web server processes incoming requests asynchronously The following example is a simple Node.js webserver contained in server.js file

server.js

copy

```
var http = require('http')
var server = http.createServer(function(req,res){
});
server.listen(5000);
console.log('Node.js webserver at port 5000 is running...')
```

In the above example, we import the http module using require() function. The http module is a core module of Node.js, so no need to install it using Npm.

The next step is to call createServer() method of http and specify callback function with request and response parameter. Finally, call listen() method of server object which has returned from createServer() method with port number, to start listening to incoming request on port 5000. You can specify any unused port here.

Run the above web server by writing node server.js command in command prompt

4. Discuss about Node package manager (Npm)?

Ans *Node package Manager (Npm) is a command line tool that installs, updates or uninstall Node.js packages in your application.

* It is also an oline respiratory for open source Node.js packages

* The node community around world creates useful modules and publishes them as packages in the repository

* It has now become a popular package manner for other open source java script frame works like Angular.js, query Gulp Brower etc

official website: https://www.npmjs.com

Npm is included with Node.js installation. After you install Node.js verify Npm installation by writing the following command is terminal on command prompt

* If you have an older version of Npm then you can update it to the latest version using the following command

* TO access Npm help, write npm help in the command promt on terminal window

Npm performs the operation in two modules global and local. In the global mobe, Npm performs operations which effect all the Node.js applications on the computer whereas on the local mode, Npm performs operations for the particular local directory which effects an application in that directory only.