WEB TECHNOLOGIES

Express JS

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Acknowledgement
The slides are created from various internet resources with valuable contributions from multiple professors

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- Express is a **web application framework** for Node.

- Its is **server side or back end framework** not comparable to client side frame works like React, Angular but can be used in combination to build full stack applications.

- Express is **fast**, **unopinionated** and **minimalist** web framework for Node.js

- Web frameworks aim to automate the overhead associated with common activities performed in web development. For example, many web frameworks provide libraries for database access, templating frameworks, and session management, and they often promote code reuse

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Why Express

- In pure node JS, we have to write everything on own.
- Every logic, parsing routes, passing URLs and creating routing actions, rendering everything has to be written by ourselves. That is error prone.
- We should focus on business logic not repetitive tasks.

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- What to know first ?
  - JS fundamentals (Objects, Arrays, Conditions etc)
  - Basic Node.js and NPM
  - HTTP status Codes
  - JSON

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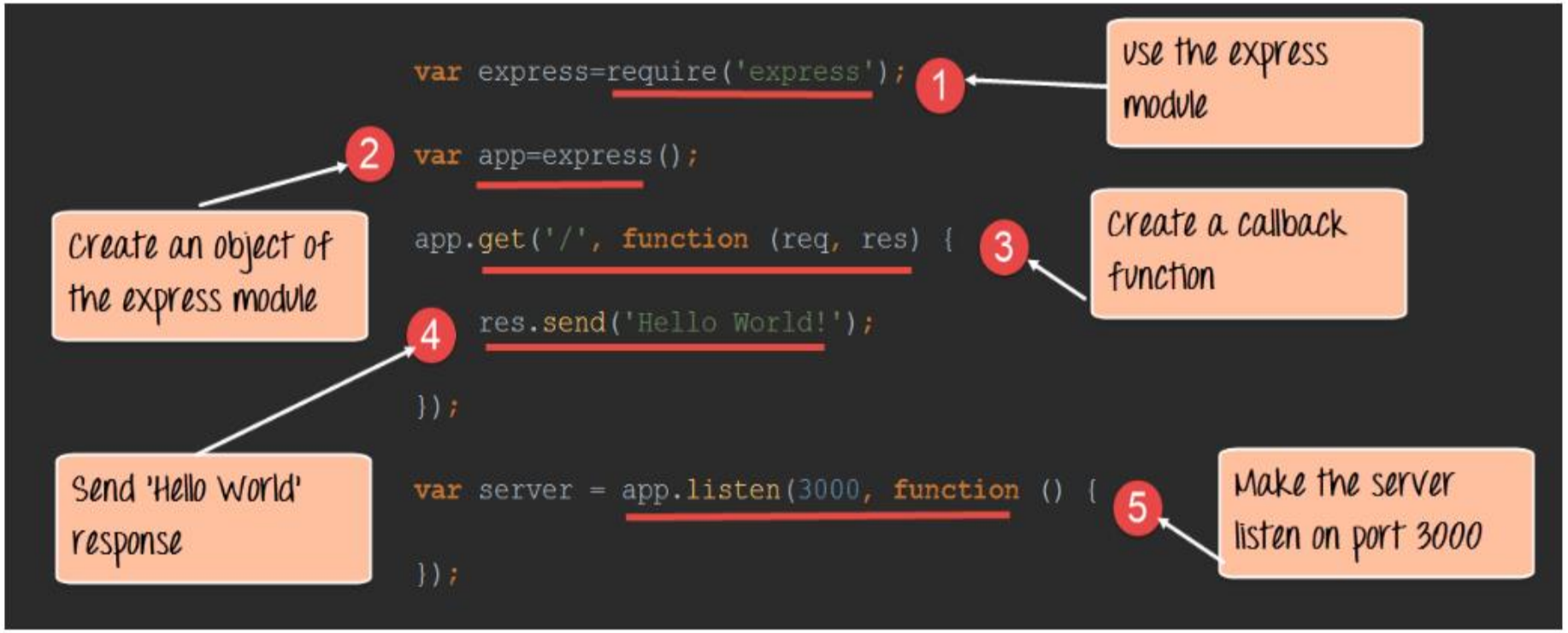
Basic Server Syntax



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Basic Route Handling

- Handling requests/route is **simple**
- **app.get(), app.post(), app.put(), app.delete() etc.**
- Access to params, querystring, url parts etc
- **Express has routers** so we can store routes in separate files and export
- We can parse incoming data with **Body Parser.**

```
app.get('/', function(req, res) {
  // Fetch from database
  // Load pages
  // Return JSON
  // Full access to request & response
});
```

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- Prerequisite:
  - **Node.js** installed on the system.
- visit website for installation of node.js http://nodejs.org/en

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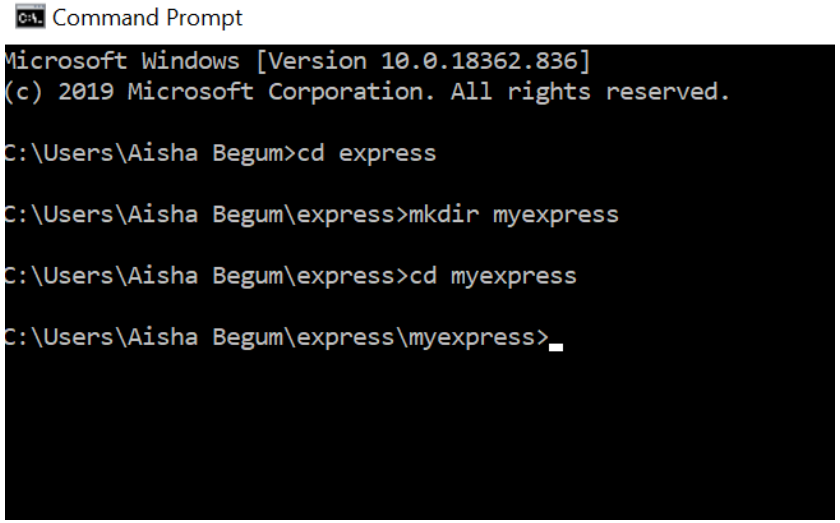
- Assuming you've already installed **Node.js**.

- Create a directory to hold your application, and make that as your working directory.



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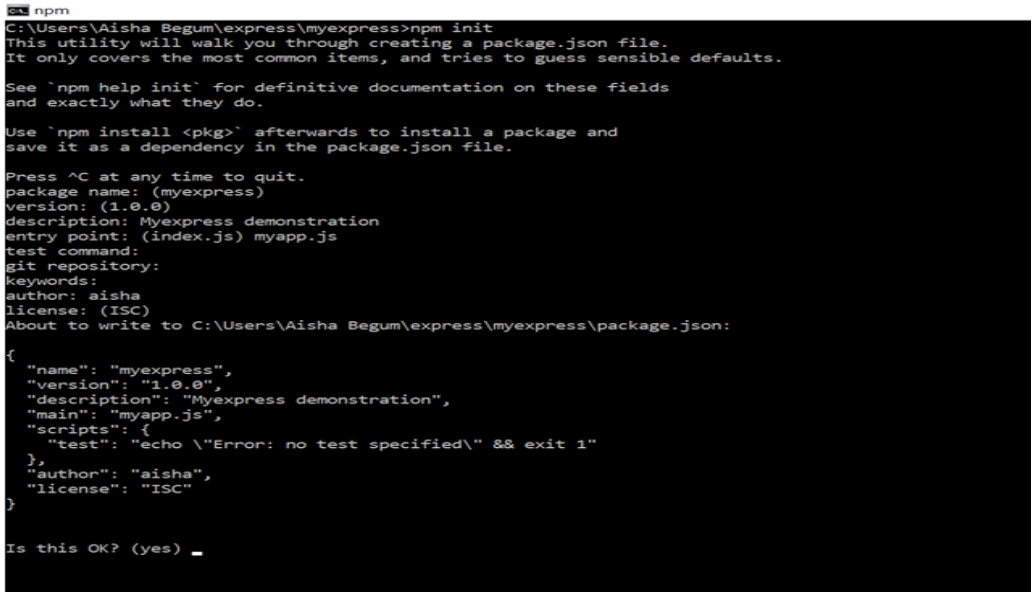
•Use the ***npm init*** command to create a **package.json** file for your application.

•This command prompts you for a number of things, such as the name and version of your application. Hit RETURN to accept the defaults settings.

•For more information on how package.json works, see Specifics of npm's package.json handling.



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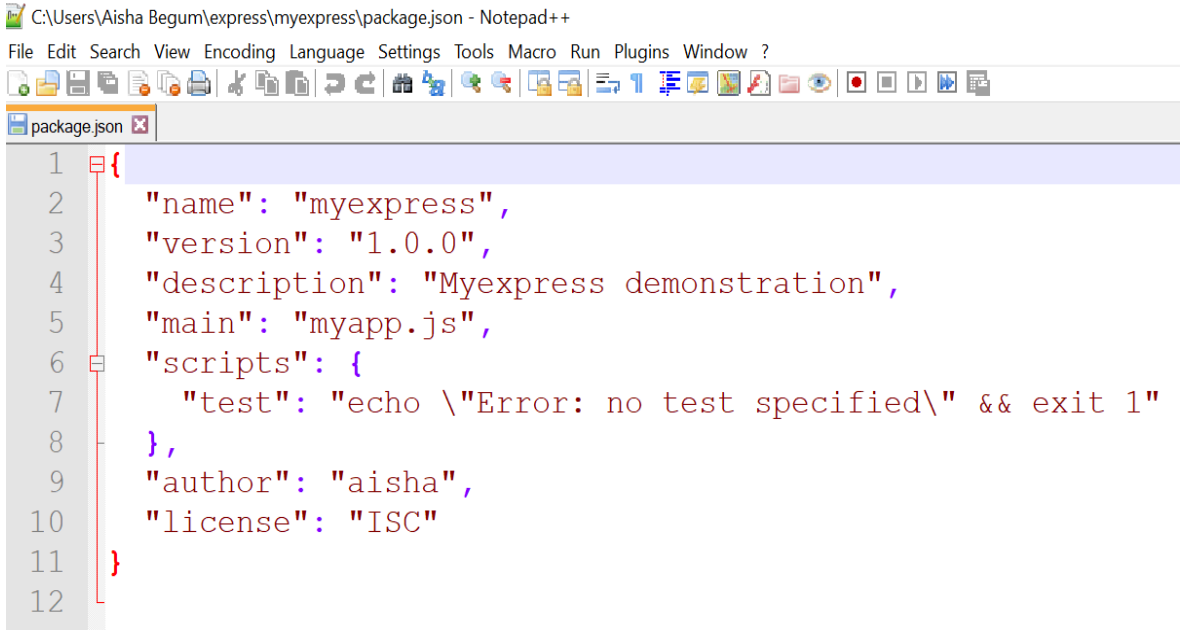
- The ***package.json*** file for your application is as shown below.

- Used nodepad++ text editor



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- Use the ***npm i express*** command to install express

```
C:\Users\Aisha Begum\express\myexpress>npm i express
npm notice created a lockfile as package-lock.json. You should commit this file.
npm WARN myexpress@1.0.0 No repository field.

+ express@4.17.1
added 50 packages from 37 contributors and audited 50 packages in 12.804s
found 0 vulnerabilities


C:\Users\Aisha Begum\express\myexpress>
```

package.json

```
{
  "name": "myexpress",
  "version": "1.0.0",
  "description": "Myexpress demonstration",
  "main": "myapp.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "aisha",
  "license": "ISC",
  "dependencies": {
    "express": "^4.17.1"
  }
}
```

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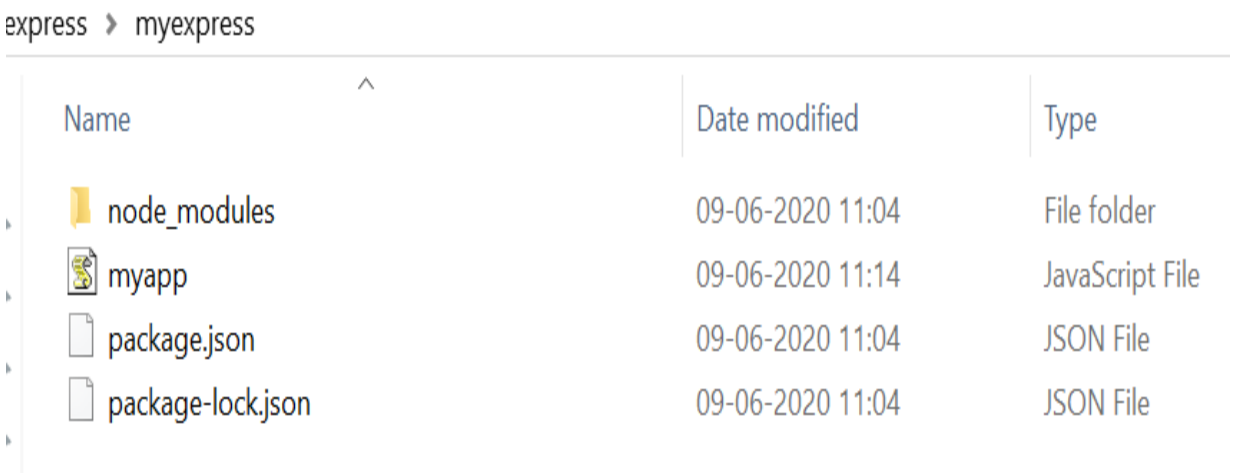
- Create a **myapp.js** file in the root folder of express.



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First program to print hello world using express js

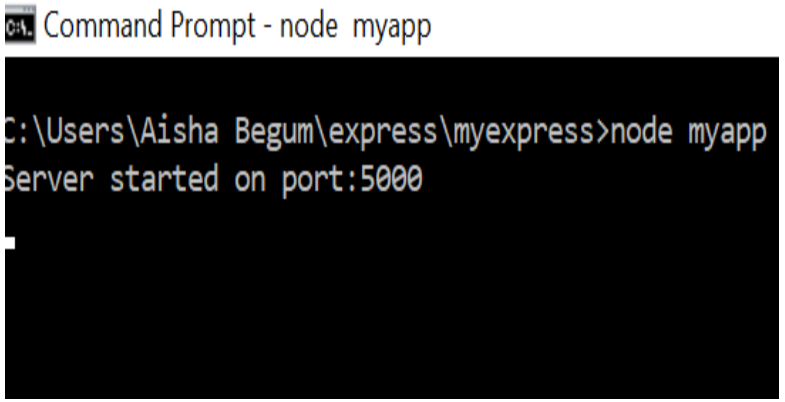
```
ge.json   myapp.js
const express = require('express');

const app = express();

app.get('/', (req, res) => {
    res.send('<h1>Hello World!</h1>')
    });

    const PORT = process.env.PORT ||5000;

app.listen(PORT, () => console.log(`Server started on port:${PORT}`));
```



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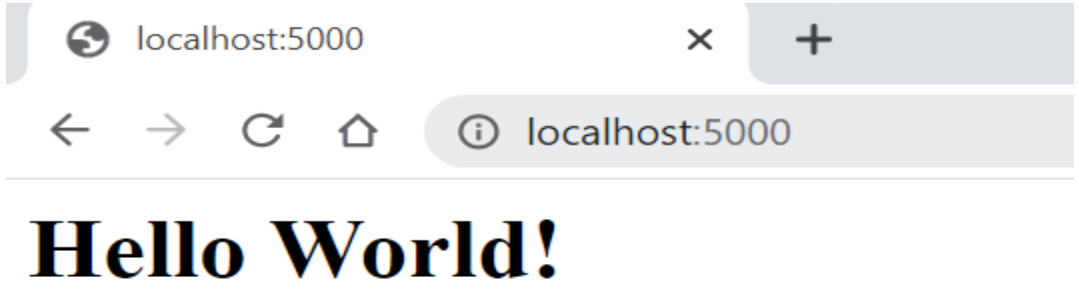
•We can check the output on any browser by using the url: **http://localhost/5000.**



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Building Application Stack

Express JS

- Building Application Stack

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Building Application Stack

Building Application Stack

- What is MERN Stack?

- A stack is the mixture of technologies used to create Web applications.

- Any web application will be made utilizing various technologies like (frameworks, libraries, databases).

- The MERN stack is a JavaScript stack that is intended to make Application Development process smoother.

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Building Application Stack

- Mern Stack Components:
- MERN incorporates four open-source Components
  - MongoDB,
  - Express,
  - React, and
  - Node.js.
- These components gives an end to end frameworks for developers to work with.

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Building Application Stack

Components Overview:

- **MongoDB** A document-oriented, No-SQL database used to store the application data.
- **NodeJS**: The JavaScript runtime environment. Used to run JavaScript on a machine rather than in a browser.
- **ExpressJS**: A framework layered on top of NodeJS, used to build the backend of a site using NodeJS functions and structures.
- **ReactJS**: A library created by Facebook. It is used to build UI components that create the user interface of the single page web application.

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Building Application Stack

- Benefits of MERN Stack
- Java script is the programming language utilized both for client side and server-side.

- For tech stack with different programming languages, developers need to find out how to interface them together. With the JavaScript stack, developers should be proficient in JavaScript and JSON.

- Using the MERN stack enables developers to build highly efficient web applications.

THANK YOU

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