

Node JS Revise Document

Introduction

Node JS Asynchronous and Event Driven – All APIs of Node.js library are asynchronous, that is, non-blocking. It essentially means a Node.js based server never waits for an API to return data. The server moves to the next API after calling it and a notification mechanism of Events of Node.js helps the server to get a response from the previous API call

- Create a js file named `app.js` on your computer having the following code.

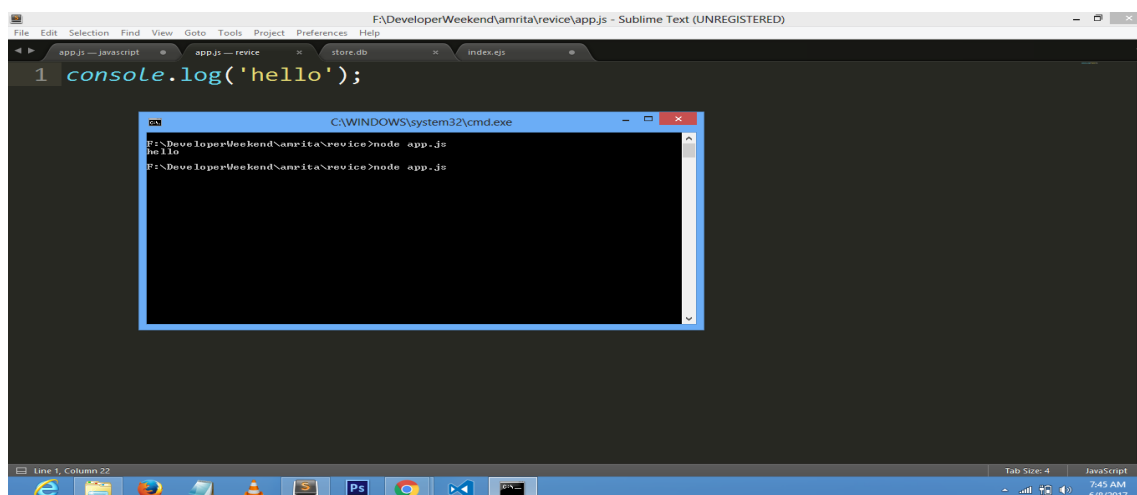
```
/* Hello, World! program in node.js */  
console.log("Hello, World!");
```

Now execute main.js file using Node.js interpreter to see the result:

```
node app.js
```

If everything is fine with your installation, this should produce the following result in console:

```
Hello, World
```



NPM

NPM is a package manager for Node.js packages, or modules if you like. www.npmjs.com hosts thousands of free packages to download and use. The NPM program is installed on your computer when you install Node.js

What is a Package?

A package in Node.js contains all the files you need for a module. Modules are JavaScript libraries you can include in your project.

Download a Package

Downloading a package is very easy.

Open the command line interface and tell NPM to download the package you want.

I want to download a package called "express":

Download "express":

```
C:\Users\Your Name>npm install express
```

Now you have downloaded and installed your first package!

NPM creates a folder named "node_modules", where the package will be placed. All packages you install in the future will be placed in this folder.

your project now has a folder structure like this:

```
C:\Users\Your Project Folder\node_modules\express
```

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F:\Develo

The screenshot shows the Visual Studio Code editor with a file named `app.js` open. The file contains the following code:

```
1 console.log('hello');
```

Below the editor, a terminal window is open, showing the command `node app.js` being executed and the output `hello`. The terminal title is `C:\WINDOWS\system32\cmd.exe`.

Hello world Example with Express

Following is a very basic Express app which starts a server and listens on port 3000 for connection. This app responds with **Hello World!** for requests to the homepage. For every other path, it will respond with a **404 Not Found**.

Once the package is installed, it is ready to use.

Include the "express" package the same way you include any other module:

```
var app = require('express');

var express = require('express')
var app = express()

app.get('/', function (req, res) {
  res.send('Hello World!')
})

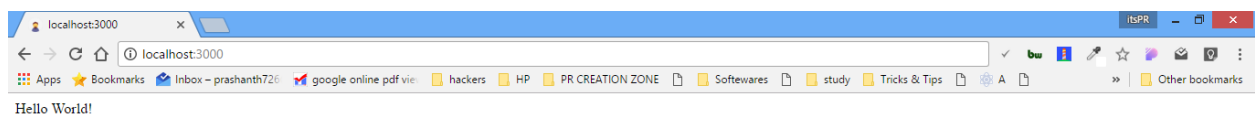
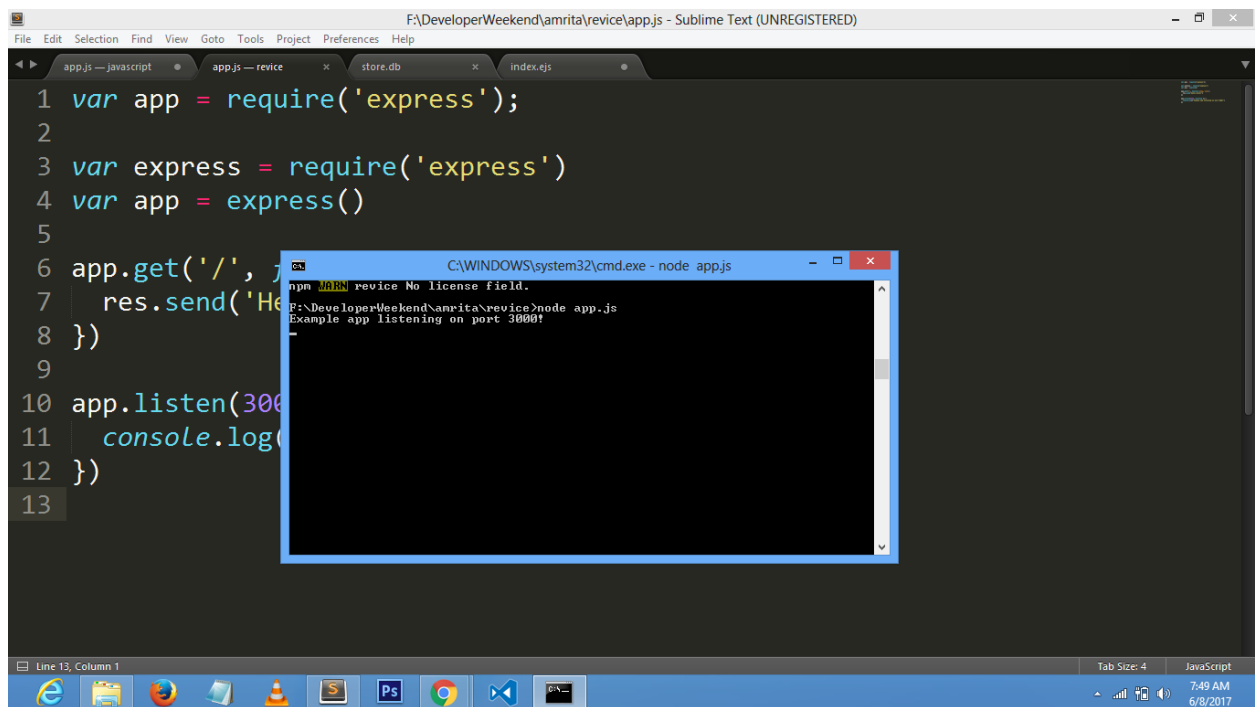
app.listen(3000, function () {
  console.log('Example app listening on port 3000!')
})
```

Above is a very basic Express app which starts a server and listens on port 3000 for connection. This app responds with **Hello World!** for requests to the homepage. For every other path, it will respond with a **404 Not Found**.

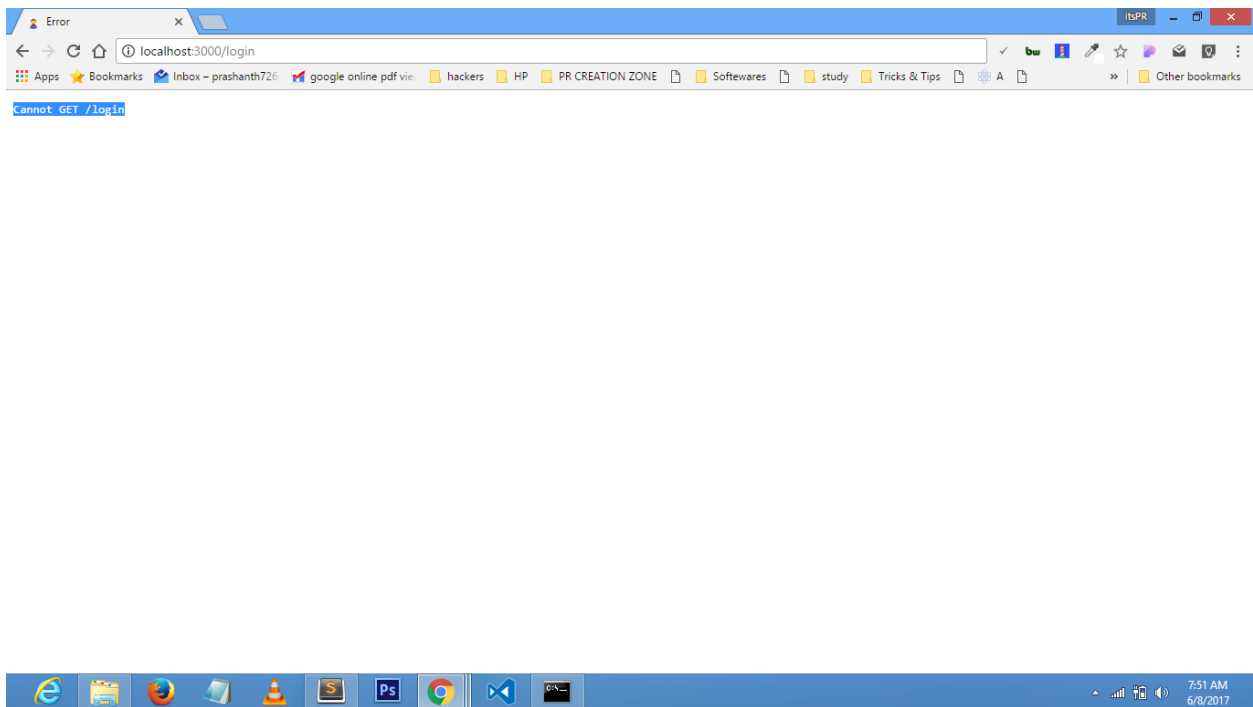
Run the app with the following command:

```
node main.js
```

Then, load <http://localhost:3000/> in a browser to see the output.



Displaying Hello World in main route.



Displaying Cannot GET /login Error. Since we haven't created the login route.

Request & Response

Express application uses a callback function whose parameters are **request** and **response** objects.

```
app.get('/', function (req, res) {  
  })
```

- Request Object – The request object represents the HTTP request and has properties for the request query string, parameters, body, HTTP headers, and so on.
- Response Object – The response object represents the HTTP response that an Express app sends when it gets an HTTP request.

You can print **req** and **res** objects which provide a lot of information related to HTTP request and response including cookies, sessions, URL, etc.

Basic routing

Routing refers to determining how an application responds to a client request to a particular endpoint, which is a URI (or path) and a specific HTTP request method (GET, POST, and so on). Each route can have one or more handler functions, which are executed when the route is matched.

Route definition takes the following structure:

app.METHOD(PATH, HANDLER)

Where:

- app is an instance of express.
- METHOD is an [HTTP request method](#), in lowercase.
- PATH is a path on the server.
- HANDLER is the function executed when the route is matched.

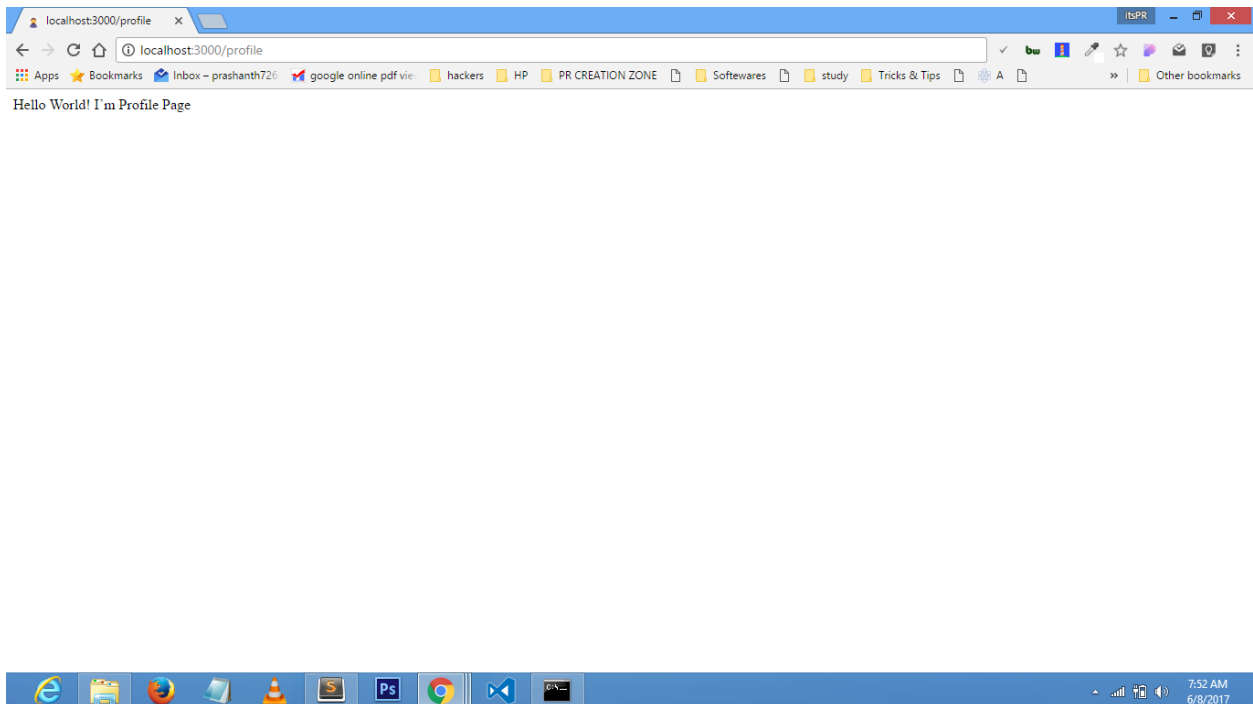
The following examples illustrate defining simple routes.

Respond with Hello World! on the homepage route:

```
app.get('/', function (req, res) {  
  res.send('Hello World!')  
})
```

Respond with Hello World I'm Profile Page! on the profile route:

```
app.get('/profile', function (req, res) {  
  res.send('Hello World! I'm Profile Page')  
})
```



Serving Static Files in Express

Express provides a built-in middleware **express.static** to serve static files, such as images, CSS, JavaScript, etc.

You simply need to pass the name of the directory where you keep your static assets, to the **express.static** middleware to start serving the files directly. For example, if you keep your images, CSS, and JavaScript files in a directory named public, you can do this –

```
app.use(express.static('public'));
```


We will keep a few images in **public** sub-directory as follows –

node_modules

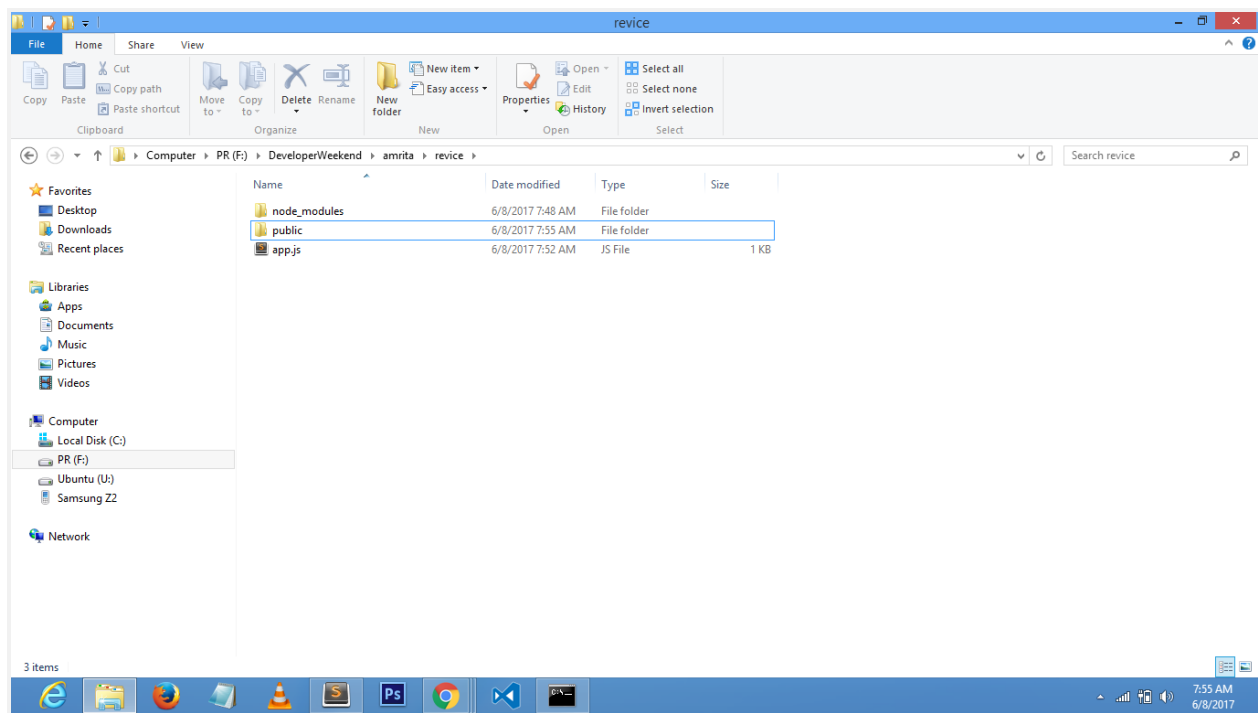
server.js

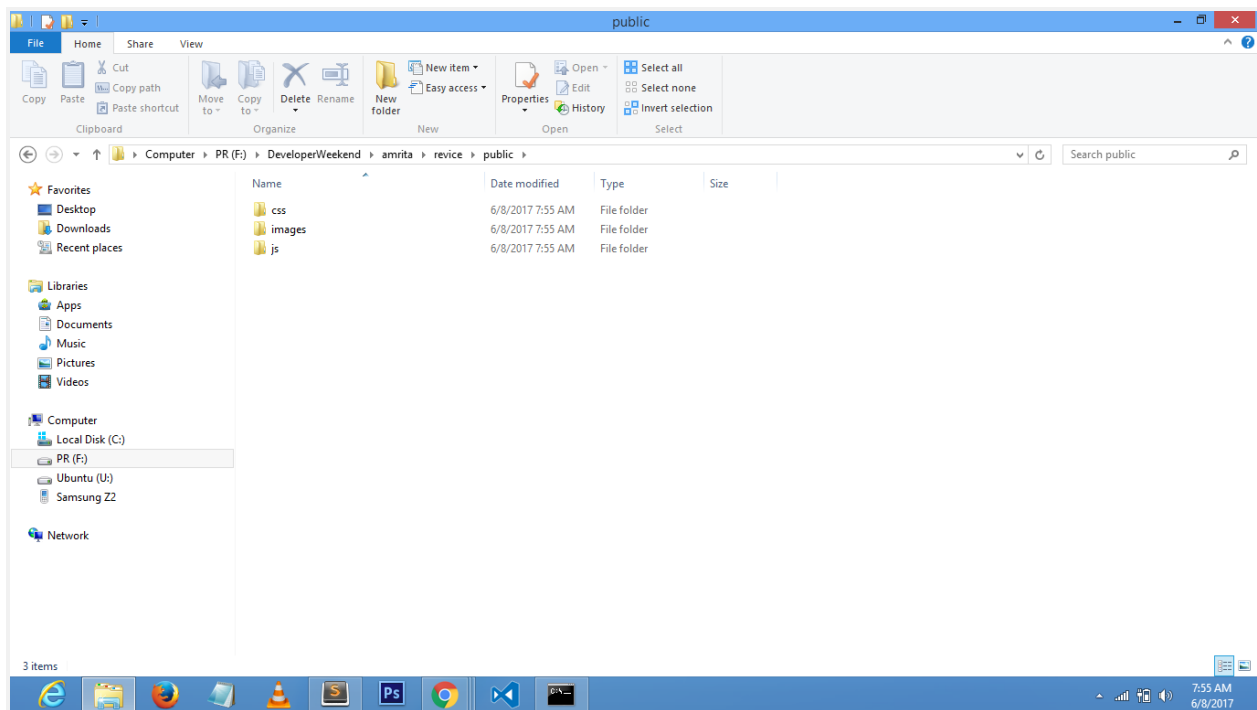
public/index.html

public/images

public/images/logo.png

File Structure to be maintained as follows





Let's modify "Hello World" app to add the functionality to handle static files

```
var app = require('express');

var express = require('express')
var app = express()

app.use(express.static('public'));

app.get('/', function (req, res) {
  res.sendFile(__dirname + "/public/" + "index.html" );
})

app.listen(3000, function () {
  console.log('Example app listening on port 3000!')
})
```



ejs

Embedded JavaScript templates

EJS is a simple templating language that lets you generate HTML markup with plain JavaScript.

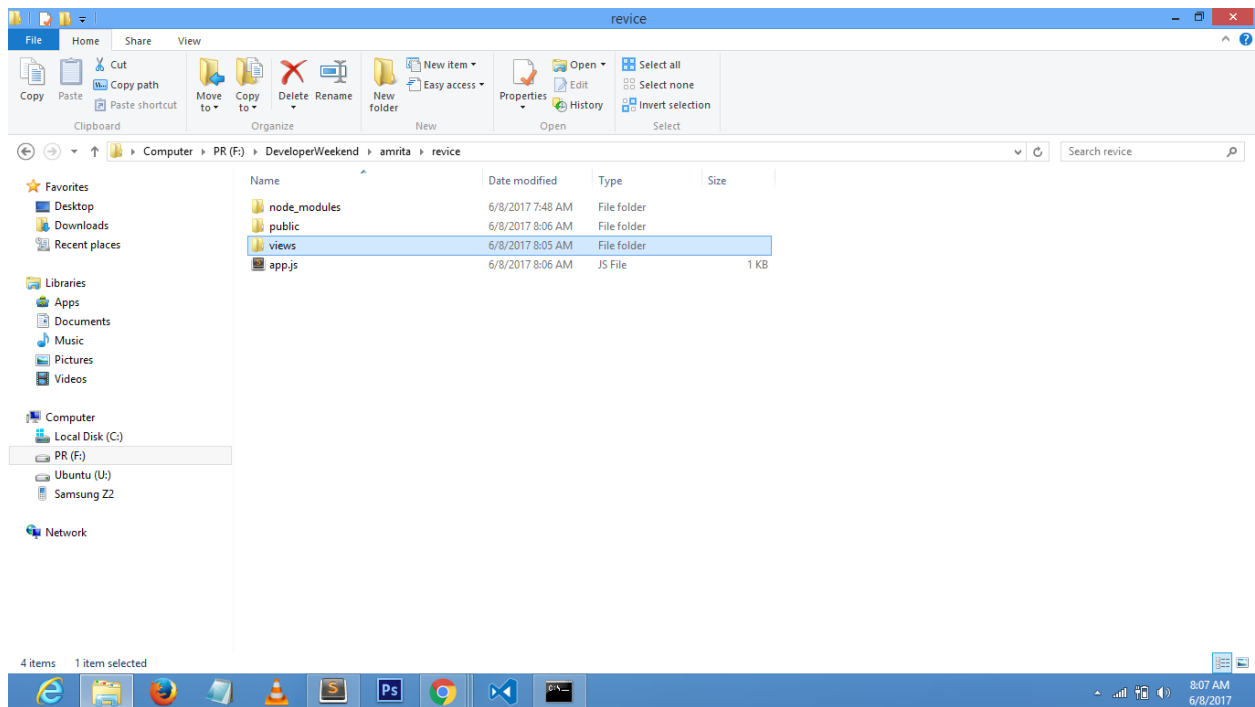
Installation

```
npm install ejs
```

And Create a New folder in route called **Views** in your project main route

Your file structure should look like this : (From Now on do not create any HTML files, create everything as ejs files)

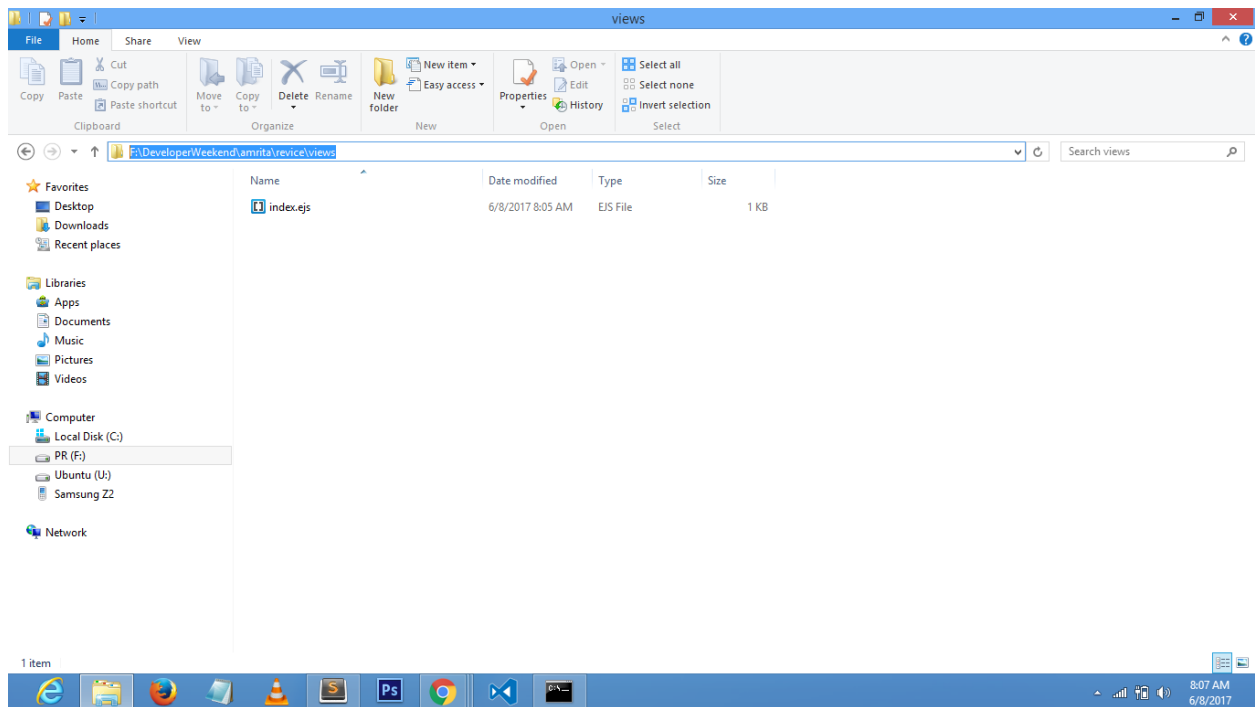
```
node_modules
server.js
public/css/bootstrap.css
views/index.js
public/images
public/images/logo.png
```



Create views folder

Usage

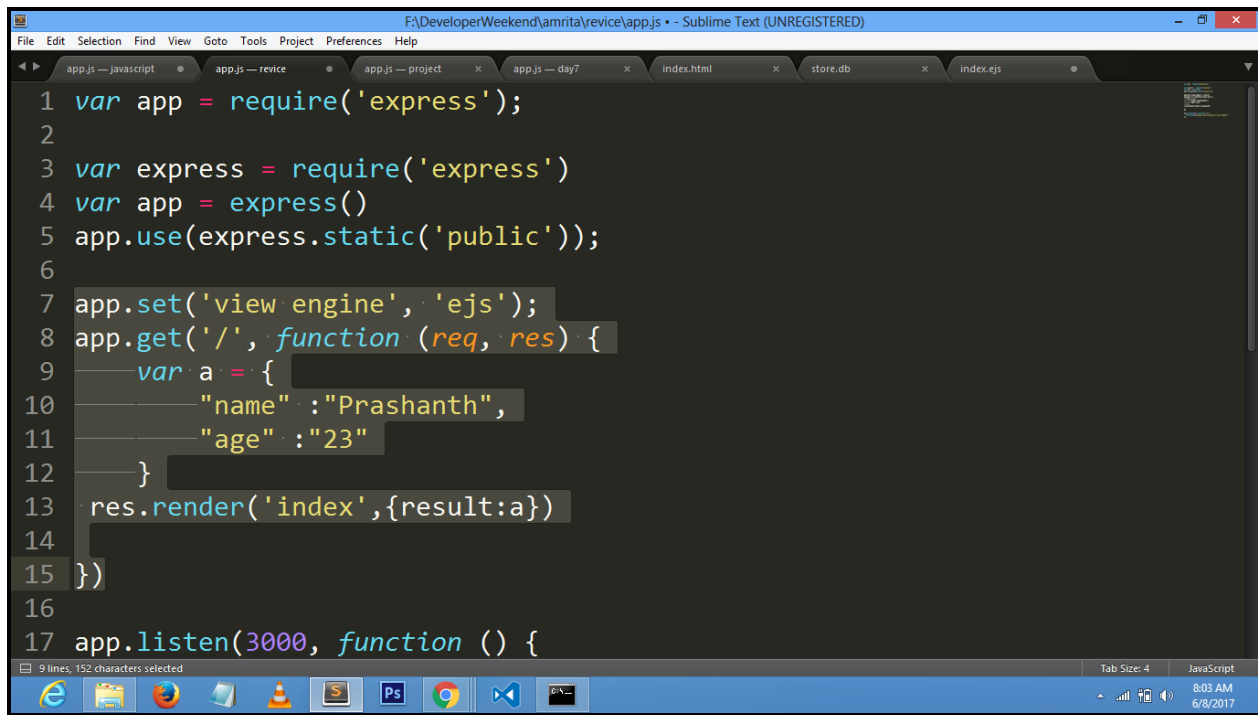
Create a new ejs file with name “index” and save it in views folder.



Code : app.js

```
var app = require('express');
var express = require('express')
var app = express()
app.use(express.static('public'));

app.set('view engine', 'ejs');
app.get('/', function (req, res) {
  var a = {
    "name" : "Prashanth",
    "age" : "23"
  }
  res.render('index', {result:a})
})
app.listen(3000, function () {
  console.log('Example app listening on port 3000!')
})
```

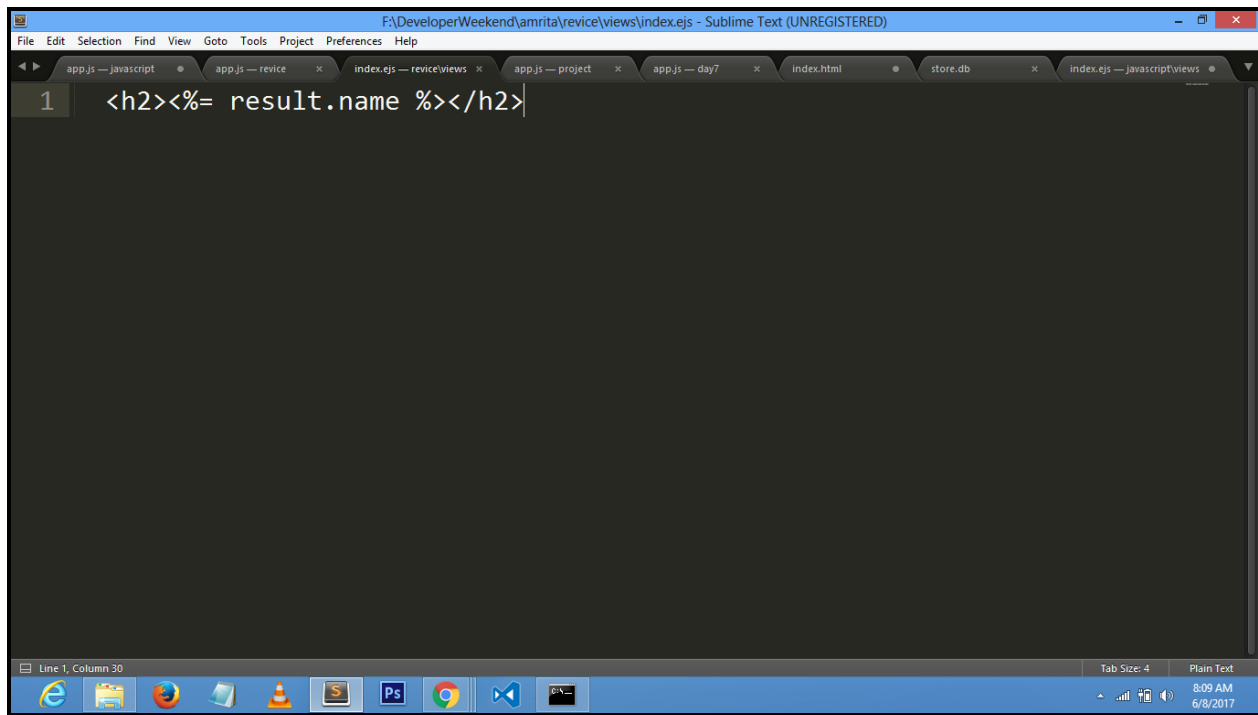


```
1 var app = require('express');
2
3 var express = require('express')
4 var app = express()
5 app.use(express.static('public'));
6
7 app.set('view engine', 'ejs');
8 app.get('/', function (req, res) {
9   var a = {
10     "name" : "Prashanth",
11     "age" : "23"
12   }
13   res.render('index', {result:a})
14
15 })
16
17 app.listen(3000, function () {
```

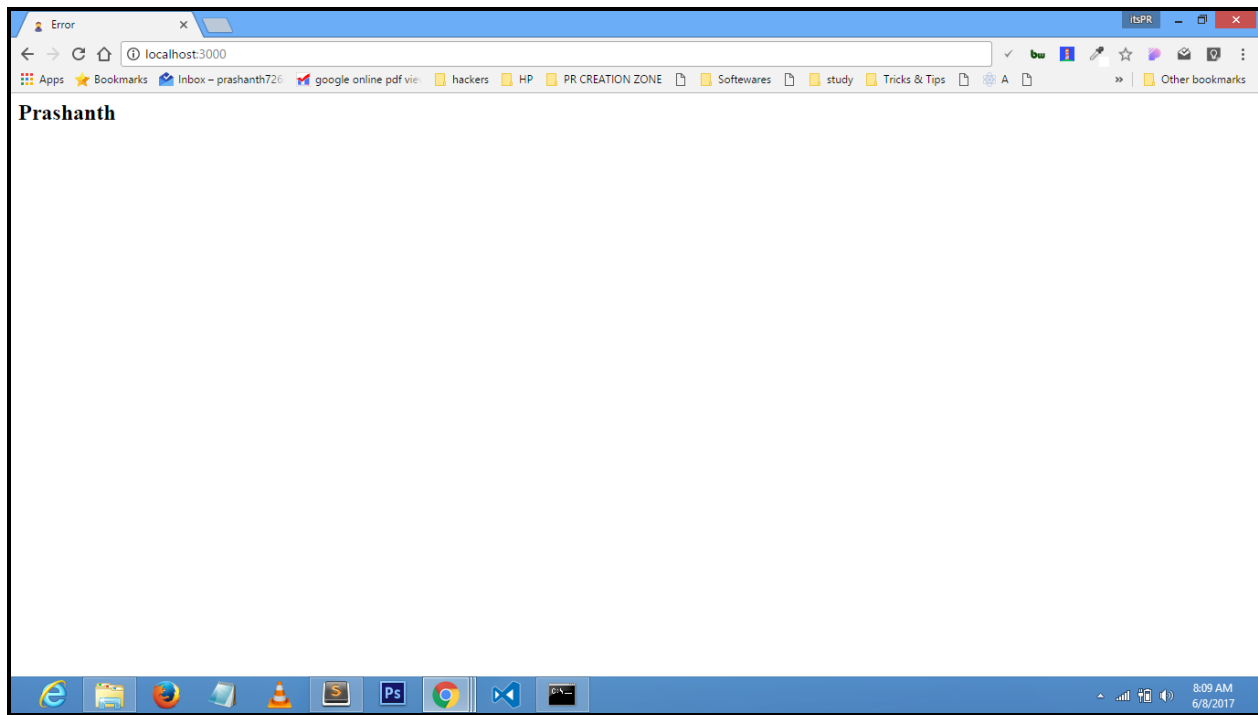
Accessing the passed variables in index.ejs file:

Example :(index.ejs)

```
<h2><%= result.name %></h2>
```



The screenshot shows a Sublime Text editor window titled "F:\DeveloperWeekend\amrita\revive\views\index.ejs - Sublime Text (UNREGISTERED)". The editor has several tabs open: "app.js — javascript", "app.js — revive", "index.ejs — revive\views", "app.js — project", "app.js — day7", "index.html", "store.db", and "index.ejs — javascript\views". The active tab is "index.ejs — revive\views", which contains the following code on line 1: `<h2><%= result.name %></h2>`. The status bar at the bottom indicates "Line 1, Column 30", "Tab Size: 4", and "Plain Text". The Windows taskbar at the bottom shows various application icons and the system clock displaying "8:09 AM 6/8/2017".



Result :)

DataBase :

For Database we using a npm module called : **nedb**

Installation

npm install nedb

Initializing a Database nedb

```
var Datastore = require('nedb')  
var db = new Datastore({filename:'store.db',autoload:true});
```

```
F:\DeveloperWeekend\amrita\day7\app.js - Sublime Text (UNREGISTERED)  
File Edit Selection Find View Goto Tools Project Preferences Help  
app.js — javascript app.js — revic index.ejs — revic/views app.js — project app.js — day7 index.html store.db index.ejs — javascript/views  
1 //importing express  
2 var express = require('express')  
3 var app = express()  
4  
5 //declaring ejs as view engine  
6 app.set('view engine', 'ejs');  
7  
8 //assigning a public static folder  
9 app.use(express.static('public'));  
10  
11 //Intializing a Database nedb  
12 var Datastore = require('nedb')  
13 var db = new Datastore({filename:'store.db',autoload:true});  
14  
15 app.set('port',process.env.PORT || 5000)  
16  
17 app.get('/',function (req,res) {
```

Insert Query :

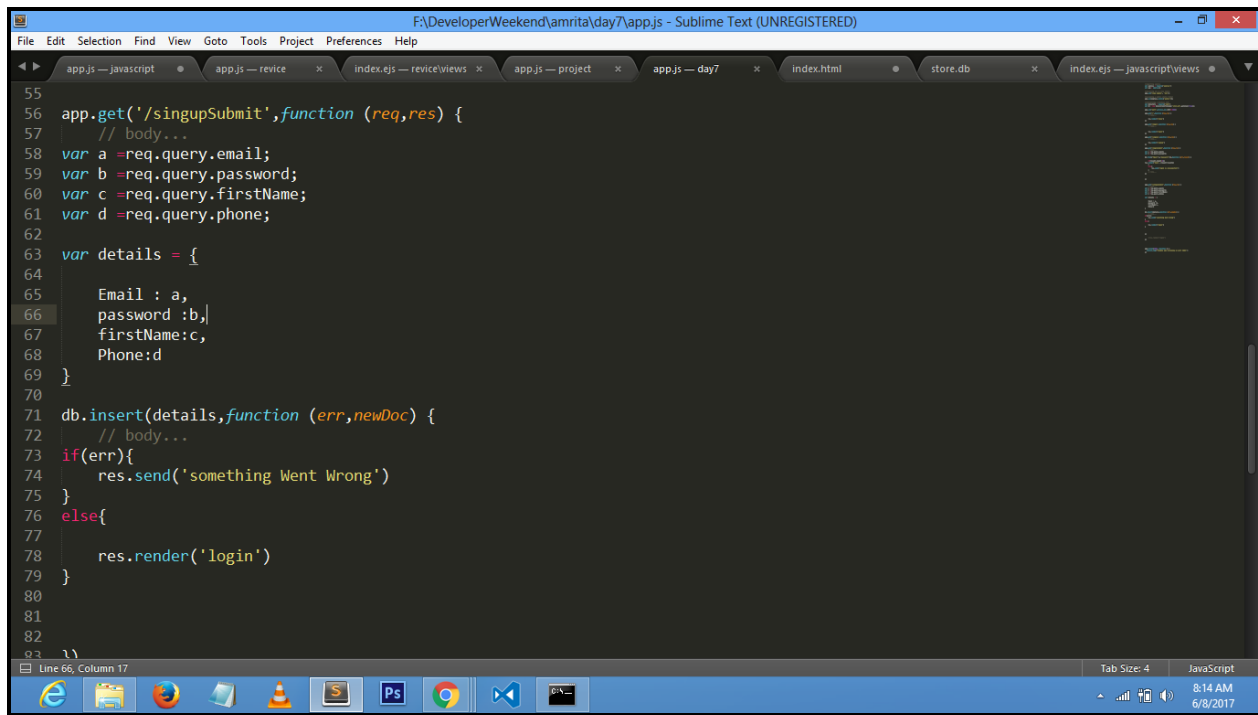
```
var a =req.query.email;
var b =req.query.password;
var c =req.query.firstName;
var d =req.query.phone;

var details = {

    Email : a,
    password :b,
    firstName:c,
    Phone:d
}

db.insert(details,function (err,newDoc) {
    // body...
    if(err){
        res.send('something Went Wrong')
    }
    else{

        res.render('login')
    }
}}
```



```
55
56 app.get('/signupSubmit',function (req,res) {
57   // body...
58   var a =req.query.email;
59   var b =req.query.password;
60   var c =req.query.firstName;
61   var d =req.query.phone;
62
63   var details = {
64
65     Email : a,
66     password :b,
67     firstName:c,
68     Phone:d
69   }
70
71   db.insert(details,function (err,newDoc) {
72     // body...
73     if(err){
74       res.send('something Went Wrong')
75     }
76     else{
77
78       res.render('login')
79     }
80
81
82   })
83 }
```

Find Query :

```
var a =req.query.email;
var b =req.query.password;
db.find({"Email":a,"password":b},function (err,result) {

    if(result.length>0){
res.render('home', {result:result})
    }
    else{
        res.send("login is unsuseesfull")
    }
    // body...
})
```

```
F:\DeveloperWeekend\amrita\day7\app.js - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help

app.js — javascript
app.js — revic
index.ejs — revic/views
app.js — project
app.js — day7
index.html
store.db
index.ejs — javascript/views

28 })
29
30 app.get('/signup',function (req,res) {
31   // body...
32
33   res.render('signup')
34 })
35
36 app.get('/loginSubmit',function (req,res) {
37   // body...
38   var a=req.query.email;
39   var b=req.query.password;
40
41   db.find({"Email":a,"password":b},function (err,result){
42
43     if(result.length>0){
44       res.render('home',{result:result})
45     }
46     else{
47       res.send('login is unsuseesfull')
48     }
49     // body...
50 })
51
52
53 })
54
55
56 app.get('/singupSubmit' function (req,res) {
```

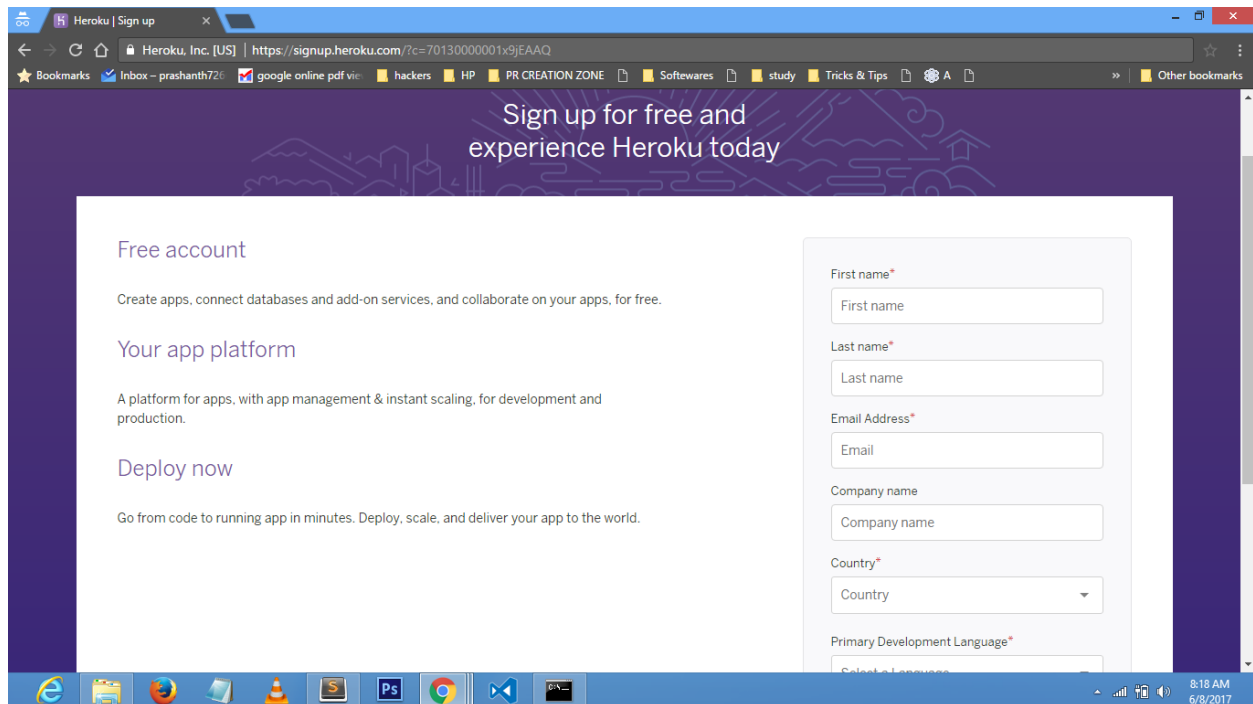
13 lines, 231 characters selected

Tab Size: 4 JavaScript

8:16 AM 6/8/2017

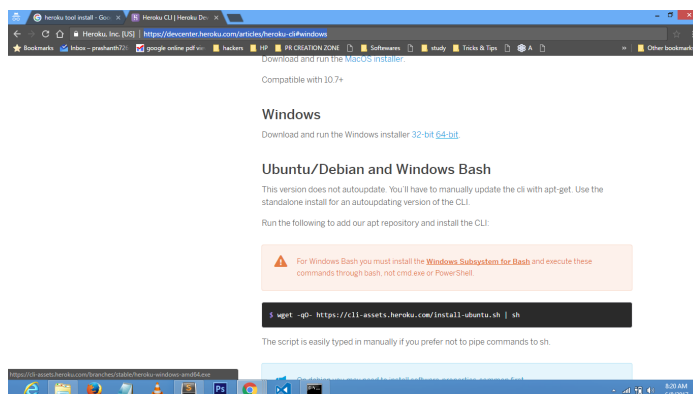
Publishing to Heroku

Step 1 : Create a account in Heroku:

A screenshot of a web browser showing the Heroku sign-up page. The page has a purple header with the text "Sign up for free and experience Heroku today". Below the header, there's a white box containing the sign-up form. The form is divided into two columns. The left column has the heading "Free account" and the text "Create apps, connect databases and add-on services, and collaborate on your apps, for free." Below this is the heading "Your app platform" and the text "A platform for apps, with app management & instant scaling, for development and production." At the bottom of the left column is the heading "Deploy now" and the text "Go from code to running app in minutes. Deploy, scale, and deliver your app to the world." The right column contains the sign-up form fields: "First name*", "Last name*", "Email Address*", "Company name", "Country*", and "Primary Development Language*". Each field has a corresponding input box. The browser's address bar shows the URL "https://signup.heroku.com/?c=70130000001x9jEAAQ". The browser's taskbar at the bottom shows various icons including the Start button, File Explorer, Google Chrome, and others. The system clock in the bottom right corner shows "8:18 AM 6/8/2017".

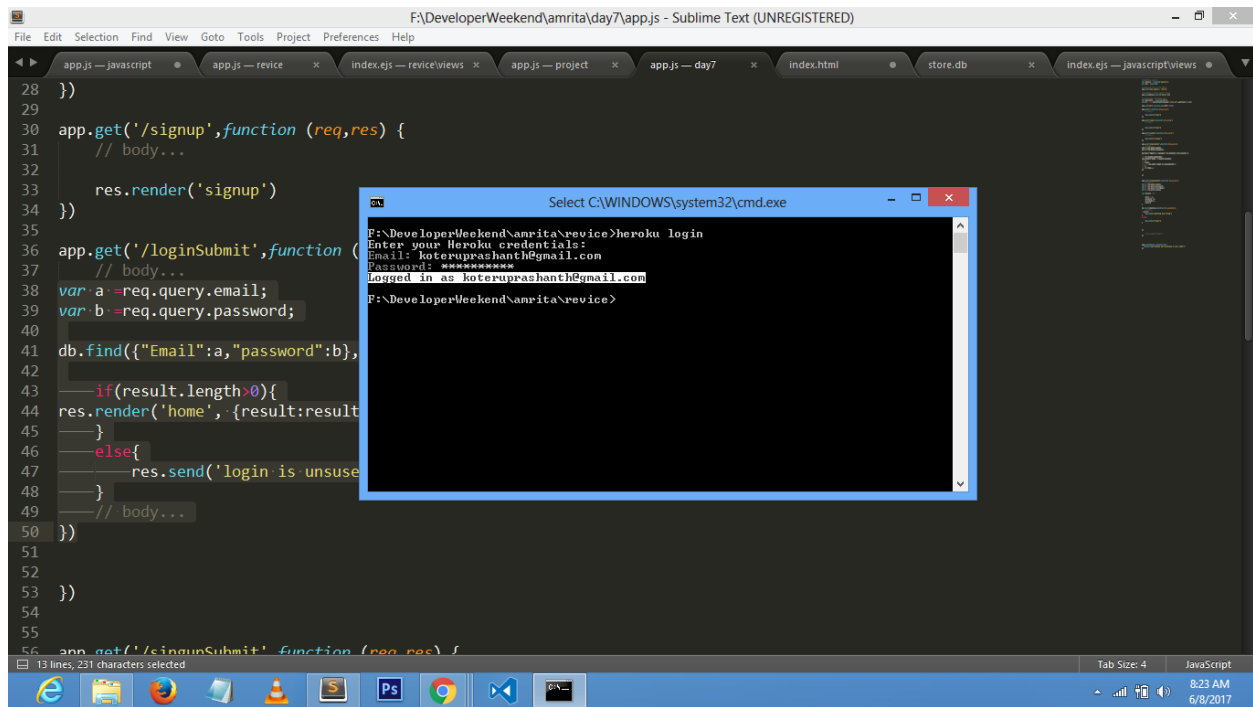
Step 2 : Next Install Heroku Tool in your laptop : by following this link

<https://devcenter.heroku.com/articles/heroku-cli#windows>



Step 3 :

Login to heroku in your command prompt : by typing **heroku login**



The screenshot shows a Sublime Text editor window with a file named 'app.js'. The code defines a login endpoint at '/loginSubmit'. It takes email and password as query parameters, finds the user in a database, and renders the 'home' view if the user exists. A Windows command prompt window is overlaid on the code, showing the command 'heroku login' being executed. The prompt asks for Heroku credentials, and the user enters 'koteruprashanth@gmail.com' for both email and password. The command prompt shows 'Logged in as koteruprashanth@gmail.com'.

```
28 })
29
30 app.get('/signup',function (req,res) {
31   // body...
32
33   res.render('signup')
34 })
35
36 app.get('/loginSubmit',function (
37   // body...
38   var a =req.query.email;
39   var b =req.query.password;
40
41   db.find({"Email":a,"password":b},
42
43     if(result.length>0){
44   res.render('home',{result:result
45   }
46   else{
47     res.send('login is unusu
48   }
49   // body...
50 })
51
52 })
53
54
55
56 app.get('/loginSubmit',function (req,res) {
```

```

Select C:\WINDOWS\system32\cmd.exe
F:\DeveloperWeekend\amrita\revive>heroku login
Enter your Heroku credentials:
Email: koteruprashanth@gmail.com
Password: *****
Logged in as koteruprashanth@gmail.com
F:\DeveloperWeekend\amrita\revive>
```

Step 4 :

Type **heroku create** in command prompt to create a new application

```
C:\WINDOWS\system32\cmd.exe

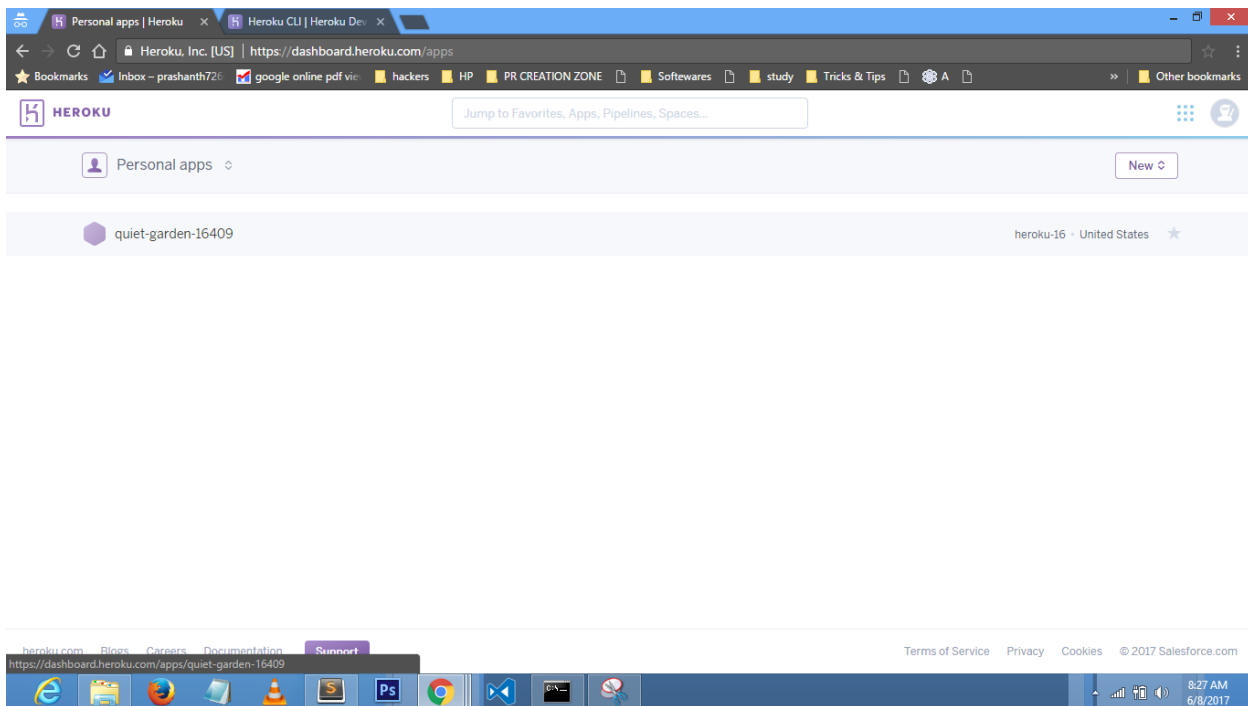
F:\DeveloperWeekend\amrita\revive>heroku login
Enter your Heroku credentials:
Email: koteruprashanth@gmail.com
Password: *****
Logged in as koteruprashanth@gmail.com

F:\DeveloperWeekend\amrita\revive>heroku create
Creating app... done, quiet-garden-16409
https://quiet-garden-16409.herokuapp.com/ : https://git.heroku.com/quiet-garden-16409.git

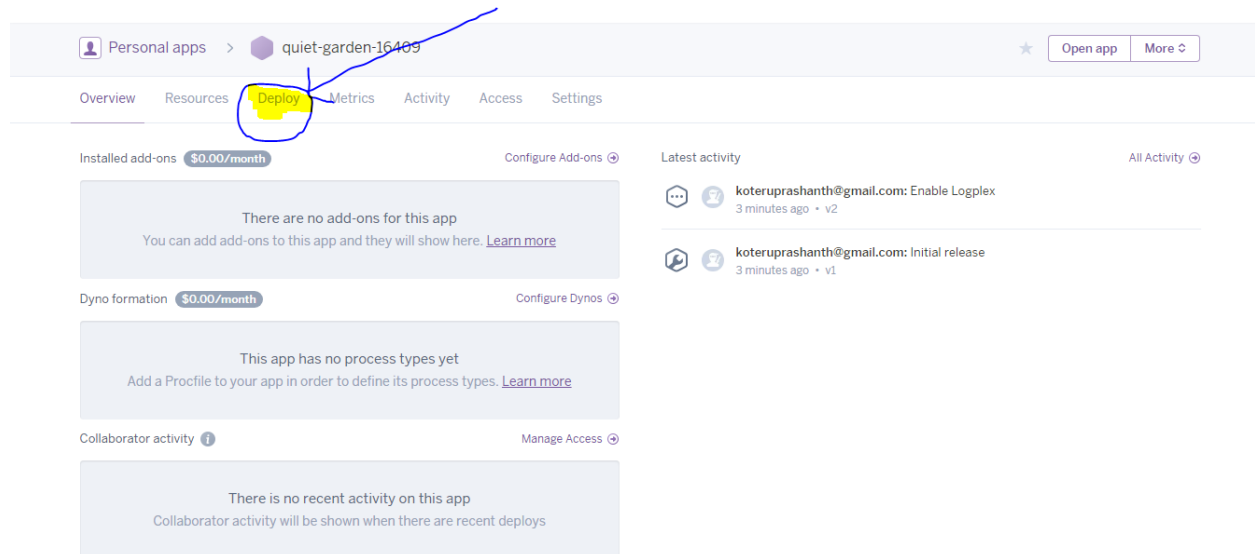
F:\DeveloperWeekend\amrita\revive>
```

Step 5 :

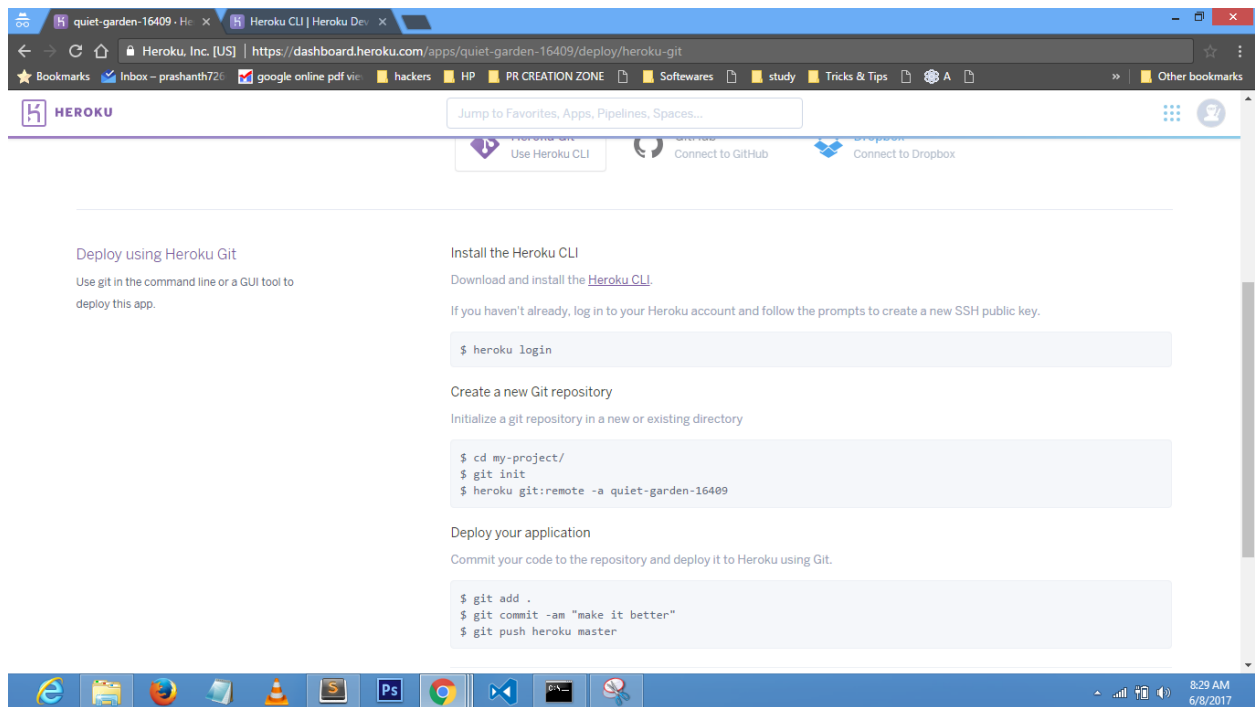
Login into your heroku dashboard in web, then you can see something similar to this



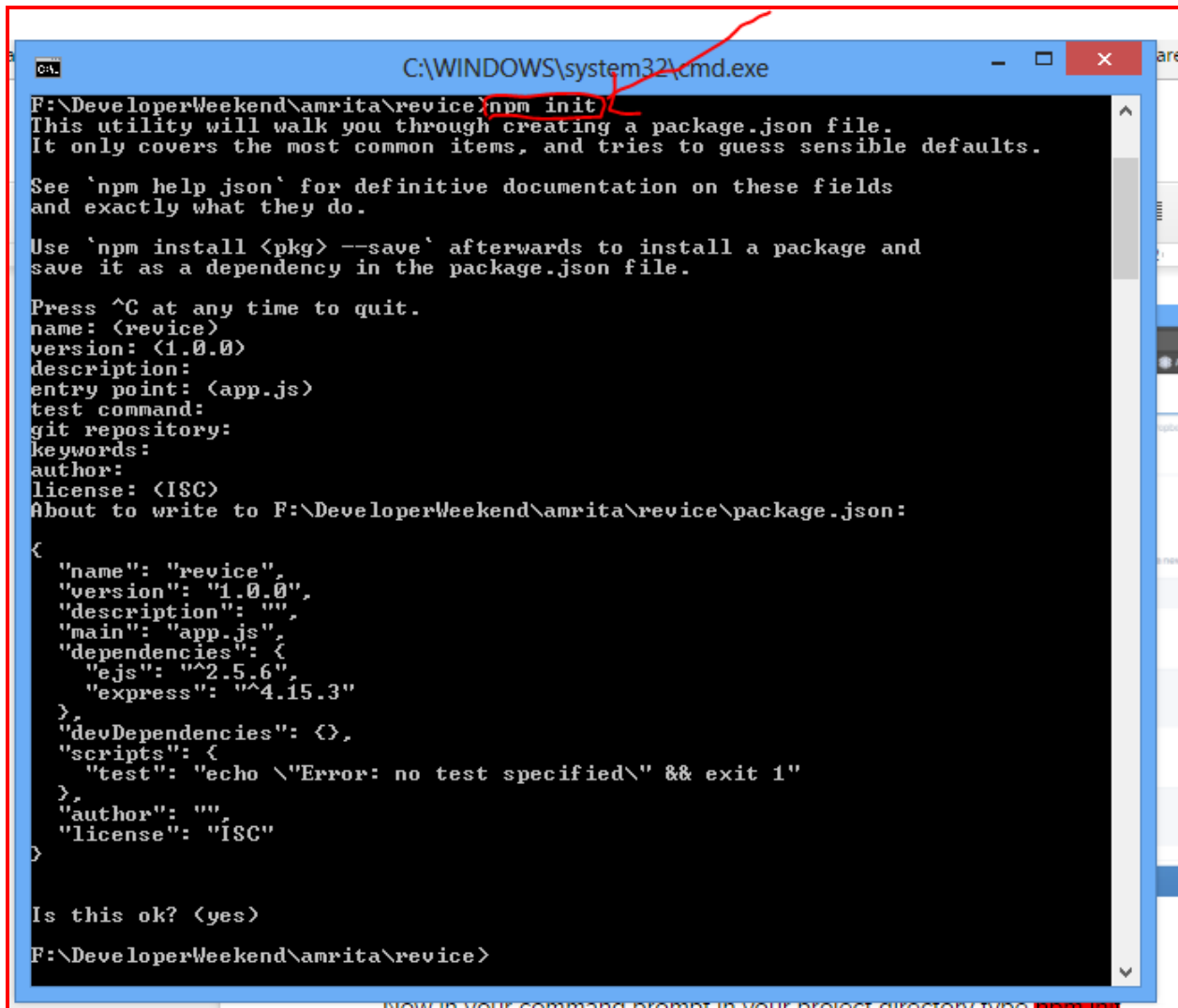
Click on the app name and go to Deploy tab



Then you will see this:



Now in your command prompt in your project directory type **npm init**



```
C:\WINDOWS\system32\cmd.exe
F:\DeveloperWeekend\amrita\revive>npm init
This utility will walk you through creating a package.json file.
It only covers the most common items, and tries to guess sensible defaults.

See 'npm help json' for definitive documentation on these fields
and exactly what they do.

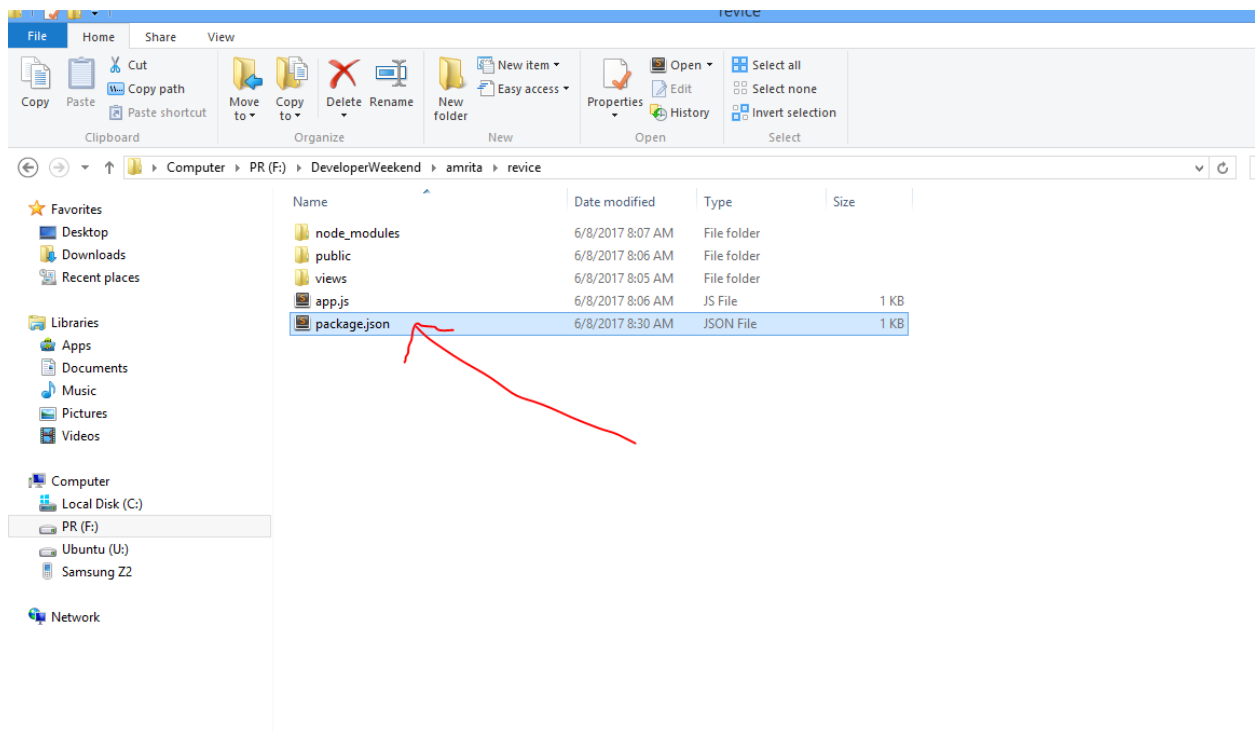
Use 'npm install <pkg> --save' afterwards to install a package and
save it as a dependency in the package.json file.

Press ^C at any time to quit.
name: <revive>
version: <1.0.0>
description:
entry point: <app.js>
test command:
git repository:
keywords:
author:
license: <ISC>
About to write to F:\DeveloperWeekend\amrita\revive\package.json:
{
  "name": "revive",
  "version": "1.0.0",
  "description": "",
  "main": "app.js",
  "dependencies": {
    "ejs": "^2.5.6",
    "express": "^4.15.3"
  },
  "devDependencies": {},
  "scripts": {
    "test": "echo \\"Error: no test specified\\" && exit 1"
  },
  "author": "",
  "license": "ISC"
}

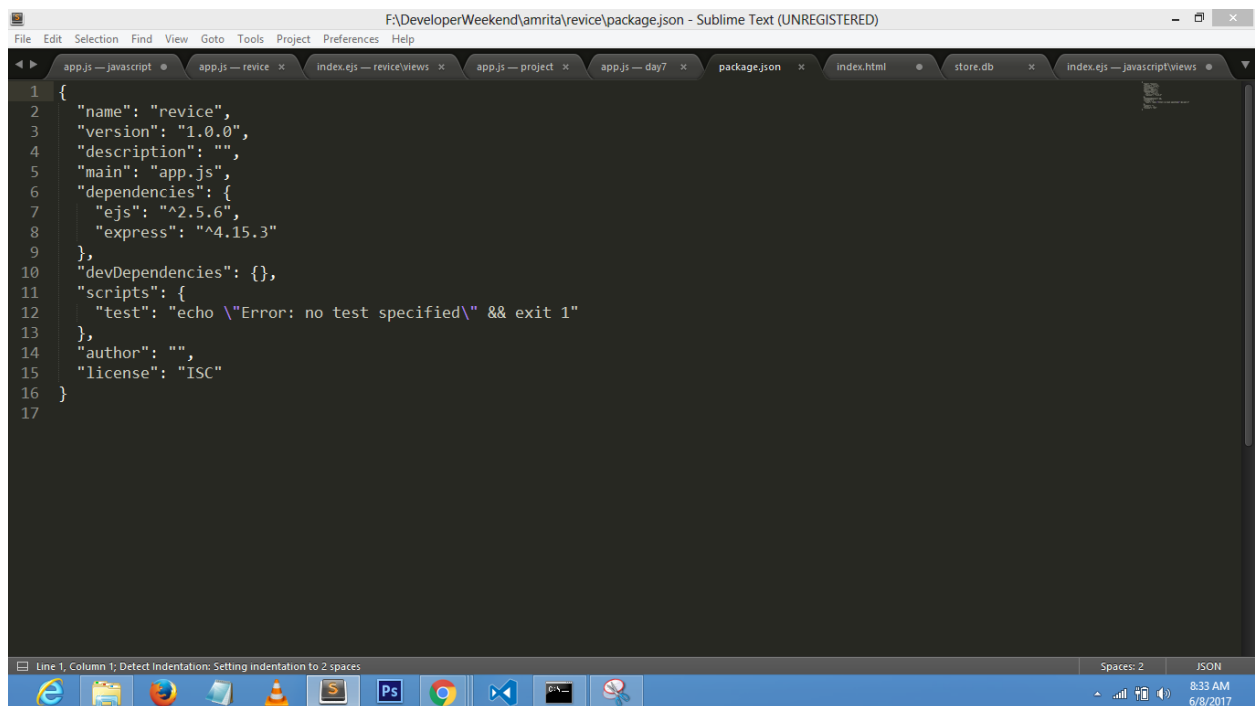
Is this ok? <yes>
F:\DeveloperWeekend\amrita\revive>
```

Just press enter till you reach this.

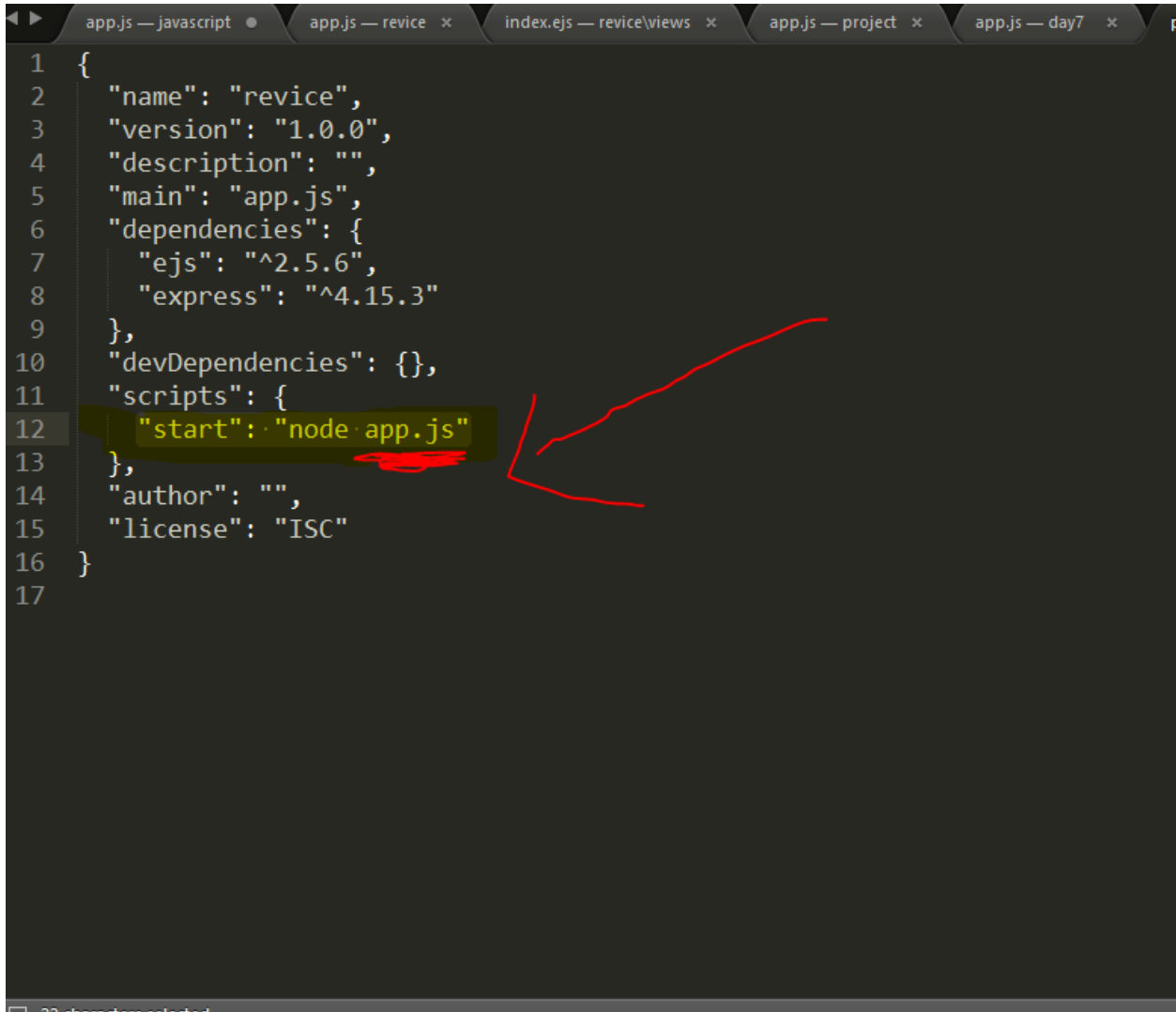
Then you can see a file called package.json in your project directory, open that



Then you will see this



Now do the following modification: add `node <your main executable filename>` (eg:node app.js)



```
1 {
2   "name": "revive",
3   "version": "1.0.0",
4   "description": "",
5   "main": "app.js",
6   "dependencies": {
7     "ejs": "^2.5.6",
8     "express": "^4.15.3"
9   },
10  "devDependencies": {},
11  "scripts": {
12    "start": "node app.js"
13  },
14  "author": "",
15  "license": "ISC"
16 }
17
```

Now in your app.js file do the following modifications:

Add this line

```
app.set('port',process.env.PORT||5000)
```

```
//declaring ejs as view engine
app.set('view engine', 'ejs');

//assigning a public static folder
app.use(express.static('public'));

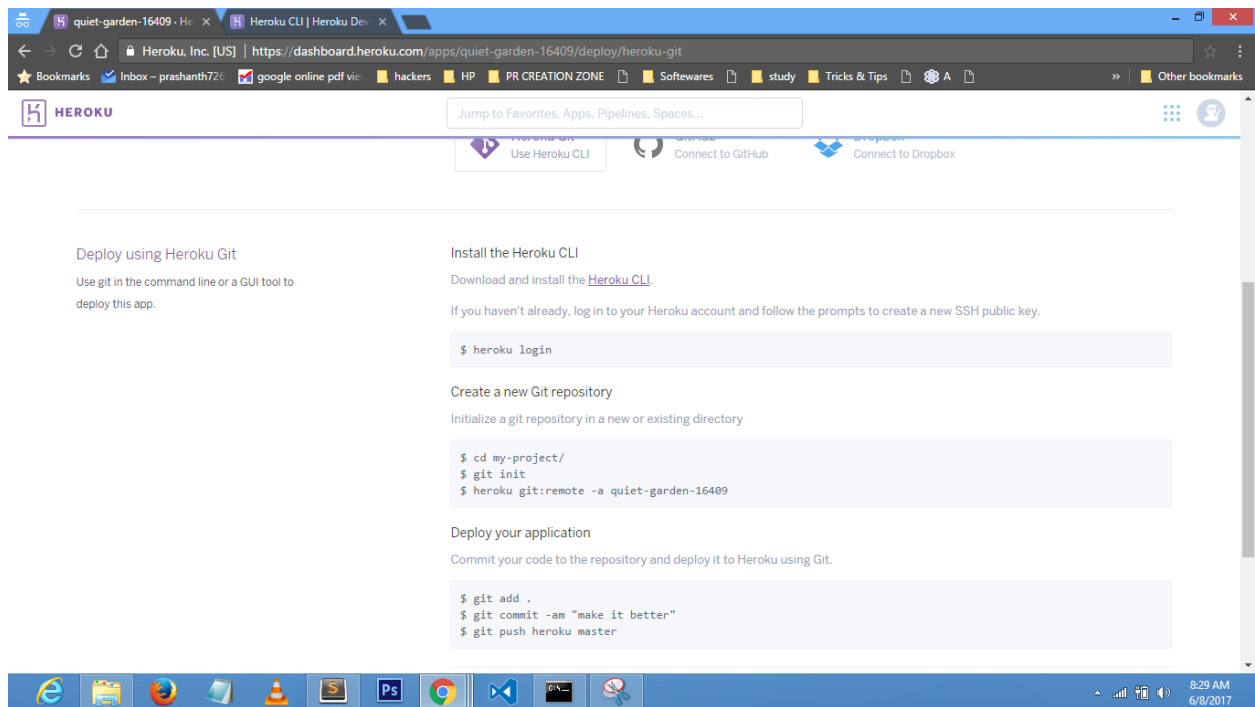
//Intializing a Database nedb
var Datastore = require('nedb')
var db = new Datastore({filename:'store.db',autoload:true});

app.set('port',process.env.PORT || 5000)

app.get('/',function (req,res) {
  // body...

  res.render('index')
})
|
app.listen(app.get('port'), function () {
  console.log('Example app listening on port 3000!')
})
```

Now in go back to your app heroku dashboard



This page

And now type these 5 commands in the command prompt

```
git init
```

```
heroku git:remote -a quiet-garden-16409
```

(this line will change for you it is

```
heroku git:remote -a <your app name>
```


```
git add .
```

```
git commit -am "make it better"
```

```
git push heroku master
```

Observe the below screenshots

First Command git init

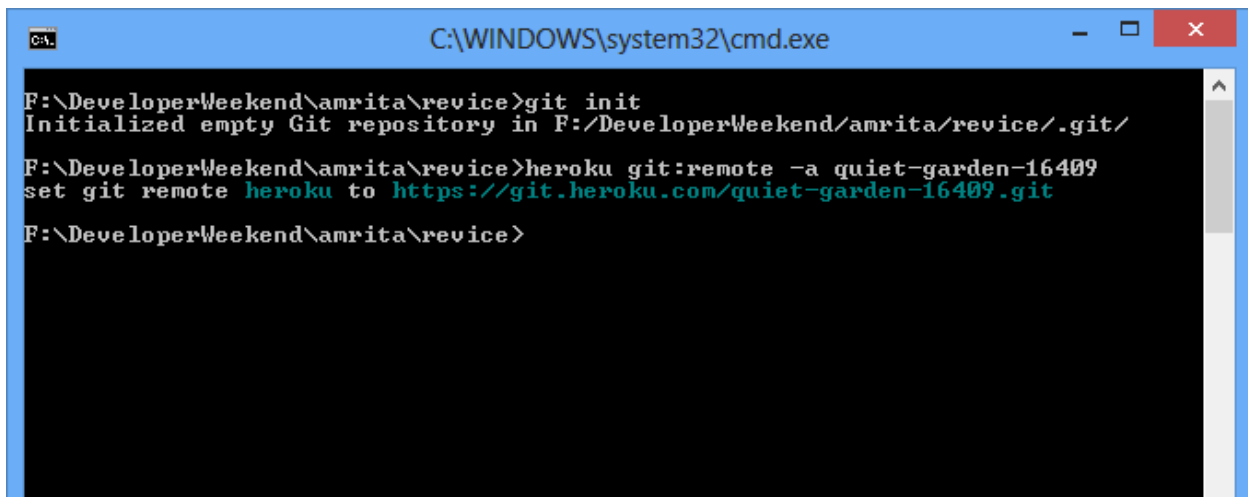


```
C:\WINDOWS\system32\cmd.exe

F:\DeveloperWeekend\amrita\revive>git init
Initialized empty Git repository in F:/DeveloperWeekend/amrita/revive/.git/
F:\DeveloperWeekend\amrita\revive>
```

Second heroku git:remote -a quiet-garden-16409 *(this line will change for you it is*

heroku git:remote -a <your app name>, check the app dashboard for your app name)



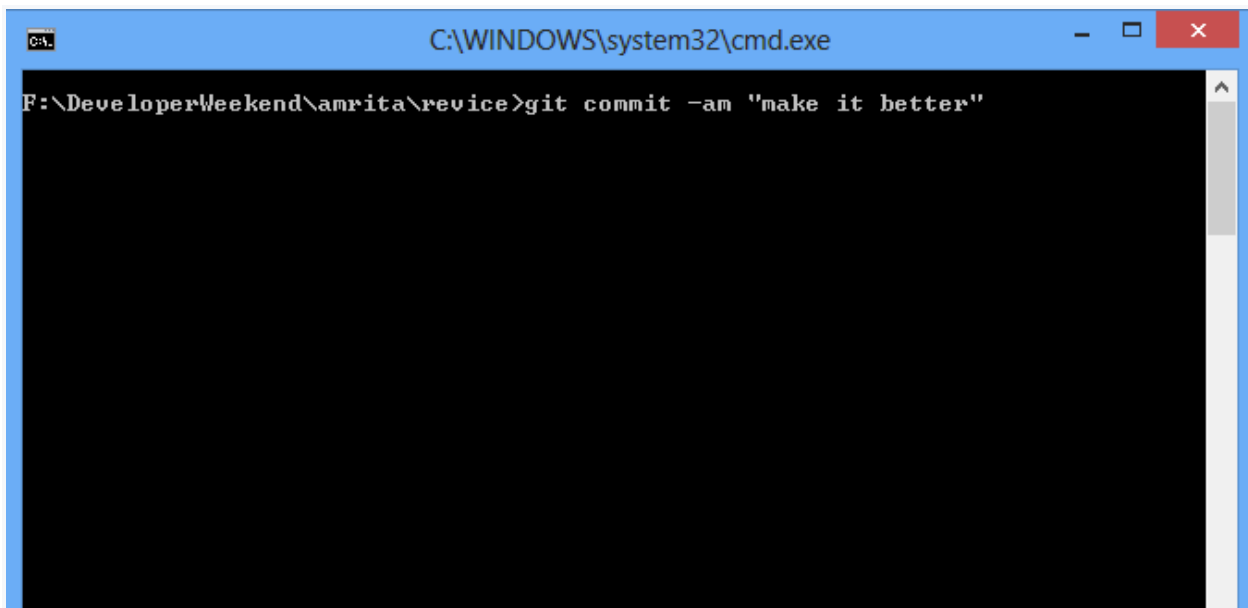
```
C:\WINDOWS\system32\cmd.exe

F:\DeveloperWeekend\amrita\revive>git init
Initialized empty Git repository in F:/DeveloperWeekend/amrita/revive/.git/
F:\DeveloperWeekend\amrita\revive>heroku git:remote -a quiet-garden-16409
set git remote heroku to https://git.heroku.com/quiet-garden-16409.git
F:\DeveloperWeekend\amrita\revive>
```

Third Command : git add .

```
warning: LF will be replaced by CRLF in node_modules/unpipe/index.js.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in node_modules/unpipe/package.json.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in node_modules/utls-merge/.travis.yml.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in node_modules/utls-merge/LICENSE.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in node_modules/utls-merge/README.md.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in node_modules/utls-merge/index.js.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in node_modules/utls-merge/package.json.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in node_modules/vary/HISTORY.md.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in node_modules/vary/LICENSE.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in node_modules/vary/README.md.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in node_modules/vary/index.js.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in node_modules/vary/package.json.  
The file will have its original line endings in your working directory.  
warning: LF will be replaced by CRLF in package.json.  
The file will have its original line endings in your working directory.  
F:\DeveloperWeekend\amrita\revive>git add .
```

Fourth command git commit -am "make it better"



```
C:\WINDOWS\system32\cmd.exe  
F:\DeveloperWeekend\amrita\revive>git commit -am "make it better"
```

Fifth and final one git push heroku master


```
C:\WINDOWS\system32\cmd.exe - git push heroku master

F:\DeveloperWeekend\amrita\revive>git push heroku master
Counting objects: 398, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (355/355), done.
Writing objects: 100% (398/398), 348.08 KiB | 0 bytes/s, done.
Total 398 (delta 67), reused 0 (delta 0)
remote: Compressing source files... done.
remote: Building source:
remote:
remote: ----> Node.js app detected
remote:
remote: ----> Creating runtime environment
remote:
remote:       NPM_CONFIG_LOGLEVEL=error
remote:       NPM_CONFIG_PRODUCTION=true
remote:       NODE_VERBOSE=false
remote:       NODE_ENV=production
remote:       NODE_MODULES_CACHE=true
remote:
remote: ----> Installing binaries
remote:       engines.node (package.json):  unspecified
remote:       engines.npm (package.json):   unspecified (use default)
remote:
remote:       Resolving node version 6.x via semver.io...
remote:       Downloading and installing node 6.11.0...
```

Then type

Heroku open

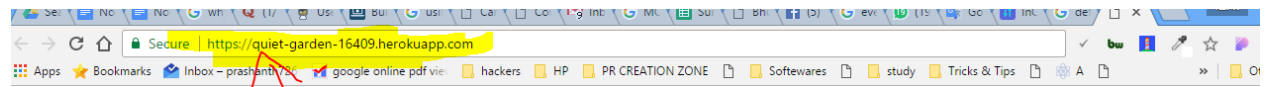
Boom Boom.....

```
C:\WINDOWS\system32\cmd.exe

remote: http-errors@1.6.1 /tmp/build_b16c6ce966a98d76cd6c6df54bada55c/nod
e_modules/http-errors
remote: inherits@2.0.3 /tmp/build_b16c6ce966a98d76cd6c6df54bada55c/node_m
odules/inherits
remote: setprototypeof@1.0.3 /tmp/build_b16c6ce966a98d76cd6c6df54bada55c/
node_modules/setprototypeof
remote: mime@1.3.4 /tmp/build_b16c6ce966a98d76cd6c6df54bada55c/node_modul
es/mime
remote: serve-static@1.12.3 /tmp/build_b16c6ce966a98d76cd6c6df54bada55c/n
ode_modules/serve-static
remote: type-is@1.6.15 /tmp/build_b16c6ce966a98d76cd6c6df54bada55c/node_m
odules/type-is
remote: media-typer@0.3.0 /tmp/build_b16c6ce966a98d76cd6c6df54bada55c/nod
e_modules/media-typer
remote: utils-merge@1.0.0 /tmp/build_b16c6ce966a98d76cd6c6df54bada55c/nod
e_modules/utils-merge
remote: vary@1.1.1 /tmp/build_b16c6ce966a98d76cd6c6df54bada55c/node_modul
es/vary
remote: Installing any new modules (package.json)
remote: -----> Caching build
remote: Clearing previous node cache
remote: Saving 2 cacheDirectories (default):
remote: - node_modules
remote: - bower_components (nothing to cache)
remote: -----> Build succeeded!
remote: -----> Discovering process types
remote: Procfile declares types      -> (none)
remote: Default types for buildpack -> web
remote: -----> Compressing...
remote: Done: 13.7M
remote: -----> Launching...
remote: Released v3
remote: https://quiet-garden-16409.herokuapp.com/ deployed to Heroku
remote: Verifying deploy... done.
To https://git.heroku.com/quiet-garden-16409.git
* [new branch]      master -> master

F:\DeveloperWeekend\anrita\revive>heroku open

F:\DeveloperWeekend\anrita\revive>
```



Prashanth

MT Site

Got Doubts???

Search in Google

Got one more doubt???

Search in Google

One more doubt????

Search in Google

Still doubts

.....

.....

.....



...

Then Search in Google

Or

whatsapp me..

+919738074729

Thank you

Prashanth

StudyOwl