Node.js

Lesson 09—Express.js

Lesson Overview

In this lesson, you will be able to understand about Express.js, MVC, and CRUD Operations.

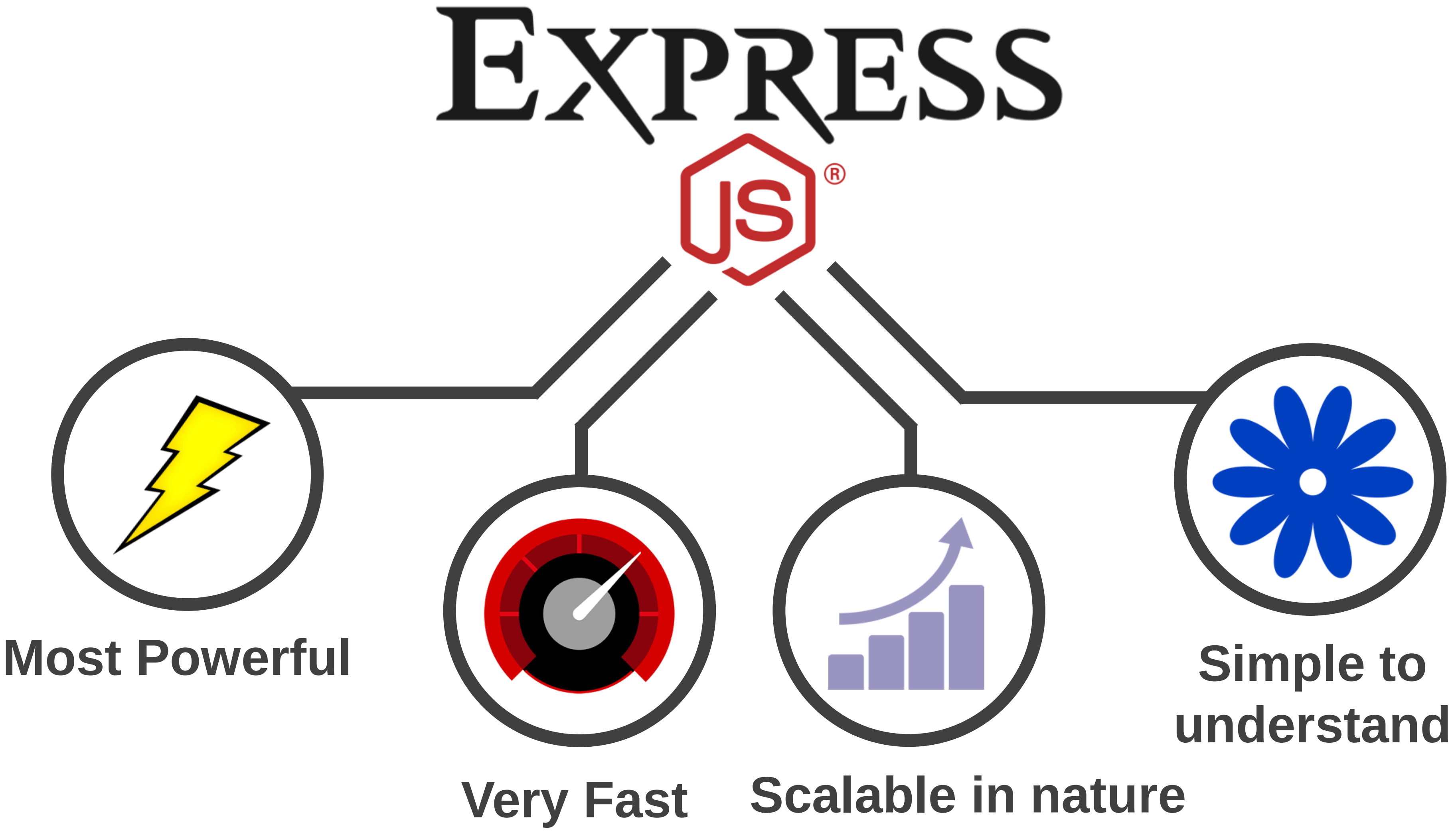
Learning Objectives

- Understand why we require Express.js
- Define Express.js
- Define model-view-controller (MVC) pattern
- Define Jade templates
- Configure Express
- Understand Postman configuration
- Configure and Using REST
- Use JSON and Reading POST Data
- Understand CRUD Operations
- Add Middleware

Express.js

Topic 1—Why Express.js

Why Express.js?



Express.js

Topic 2—What is Express.js?

What Is Express.js?

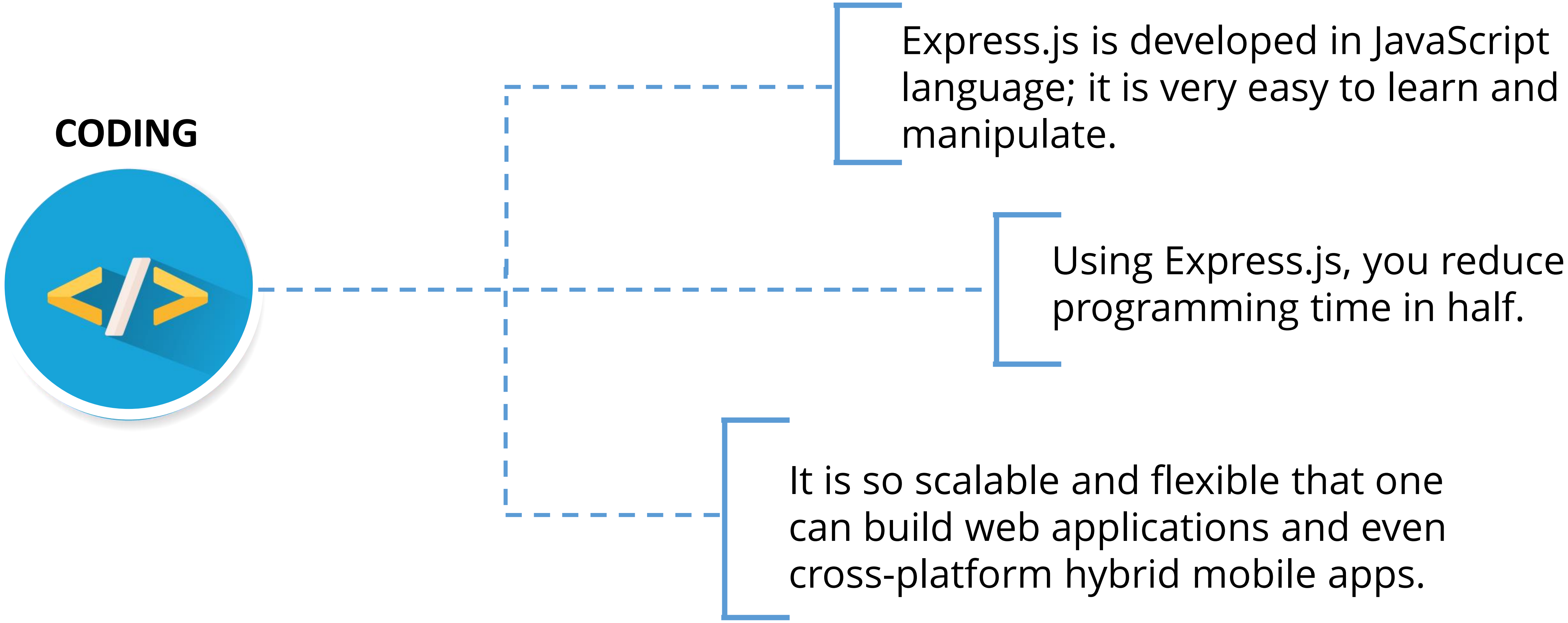
Express.js is a built-in Node.js framework that helps developers create smarter and faster server-side REST and WEB applications.

It made coding in Node.js a PIECE OF CAKE

By offering developers some essential features to enhance server-side development.

What Is Express.js?

CODE USING NODE.JS AND EXPRESS.JS



CODING

Express.js is developed in JavaScript language; it is very easy to learn and manipulate.

Using Express.js, you reduce programming time in half.

It is so scalable and flexible that one can build web applications and even cross-platform hybrid mobile apps.

Express.js

Topic 3—What is MVC?

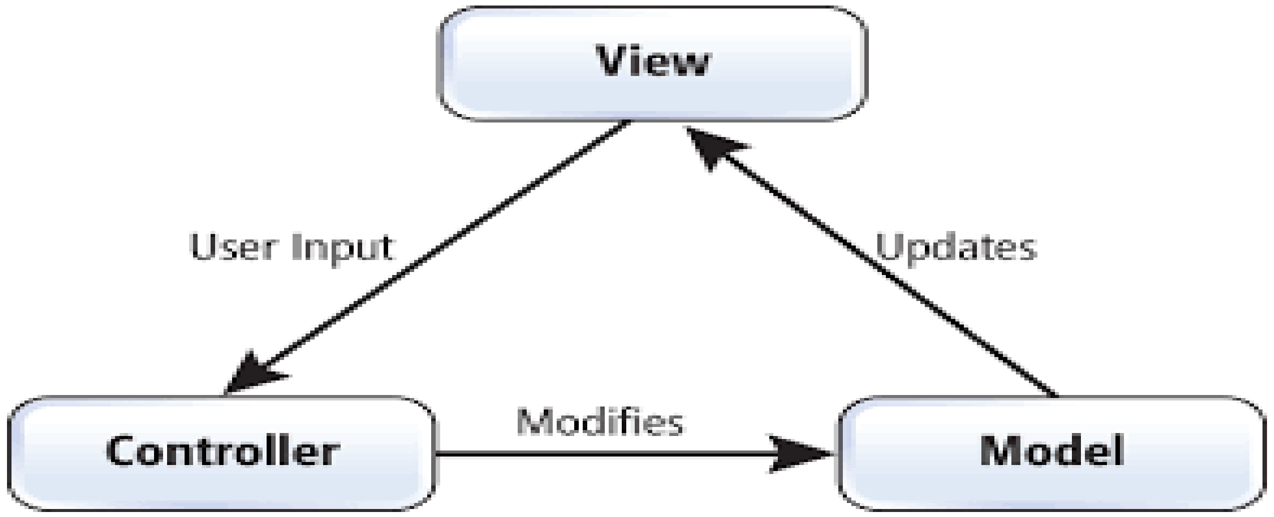
What Is MVC?

MVC Pattern stands for Model-View-Controller Pattern.

Model - This layer represents an object for carrying data and may hold data logic to update controller in case of data changes.

View - This layer holds the data presentation that the model contains.

Controller - This is a middleman between model and view and controls the data flow into data object and updates the view whenever the data is updated.



This pattern is well known for application-specific Separation of Concerns (SoC).

Express.js

Topic 4—Defining Jade Template

Jade Template

A template engine empowers developers to use static template files to create web applications.

During runtime, such template engines replace declared variables in a template file with its actual values and convert the standard template into an HTML page that can be shared with the client.

This approach makes HTML page development very easy.

A few well known template engines that support Express framework are:
- Pug
- Mustache
- EJS

By default, Express-based applications use Jade as a template, but they also support several others.

Jade is now renamed as ”Pug”; however, you can use Jade in your app, and it will work just fine.

Express.js

Topic 5—Configuring Express

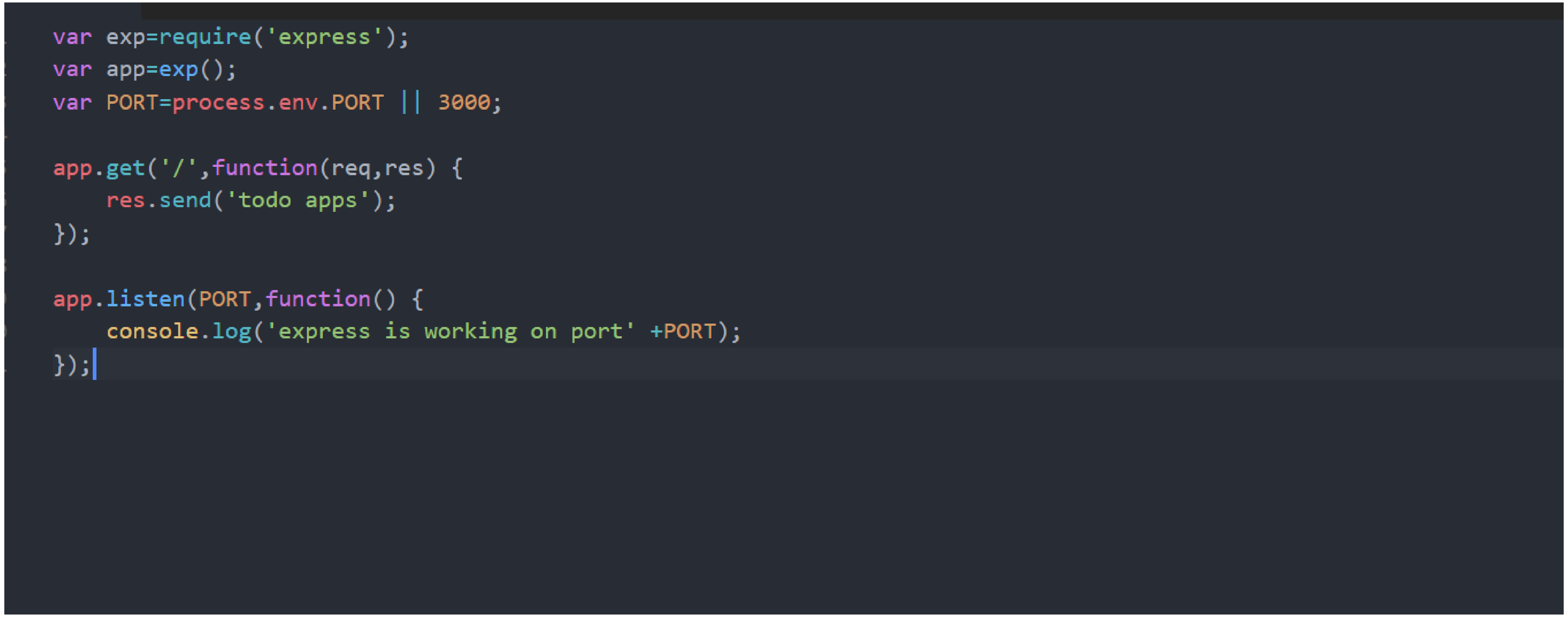
Jade Template

CONFIGURE JADE TEMPLATE

Command to install express

```
npm install express -save
```

Code to configure app



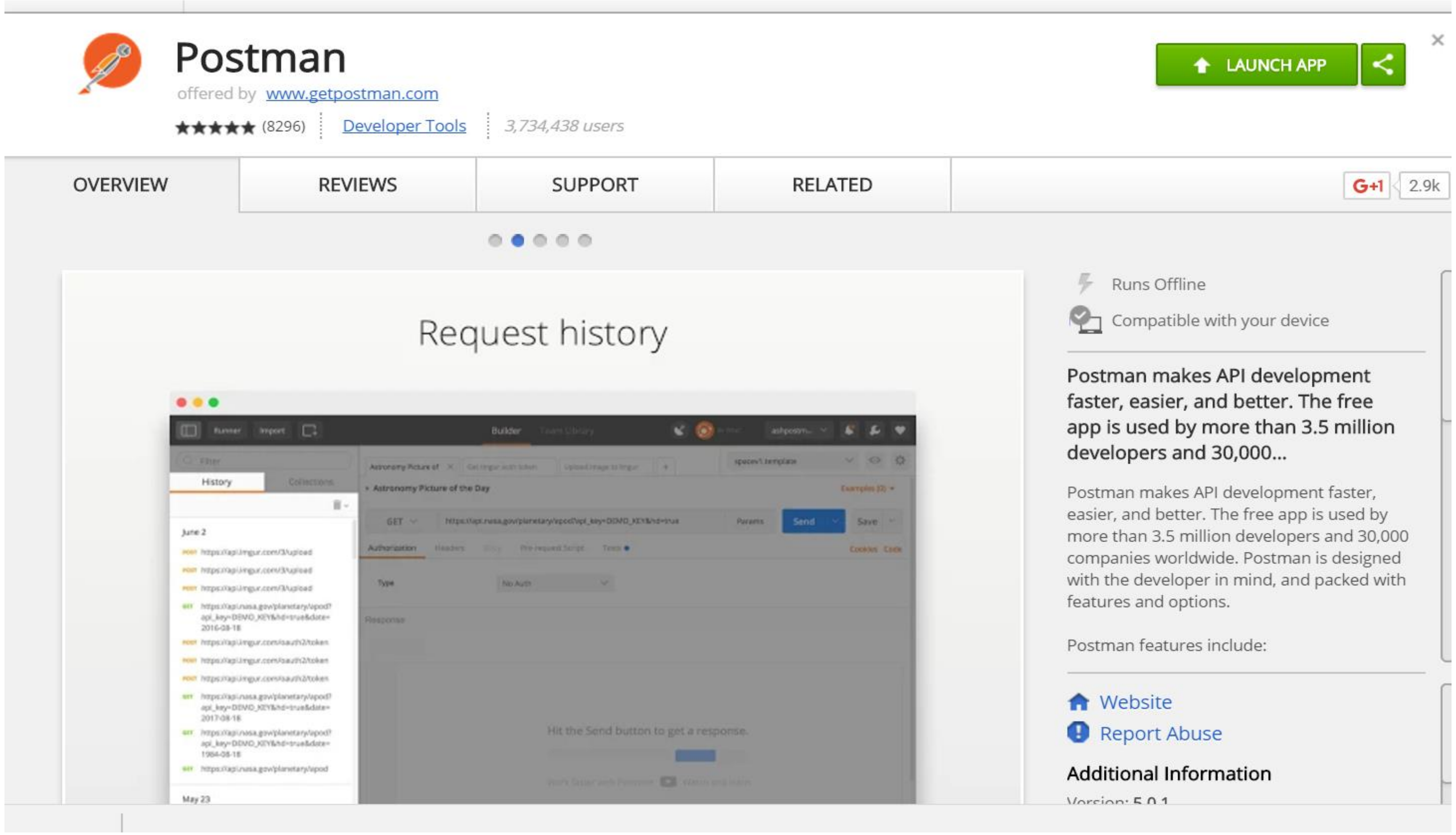
```
var exp=require('express');
var app=exp();
var PORT=process.env.PORT || 3000;

app.get('/',function(req,res) {
    res.send('todo apps');
});

app.listen(PORT,function() {
    console.log('express is working on port' +PORT);
});
```

Express.js

Topic 6—Postman Configuration

Postman Configuration

Download this app from the chrome web store.



Postman

offered by www.getpostman.com

★★★★★ (8296) | Developer Tools | 3,734,438 users

Runs Offline

Compatible with your device

Postman makes API development faster, easier, and better. The free app is used by more than 3.5 million developers and 30,000...

Postman makes API development faster, easier, and better. The free app is used by more than 3.5 million developers and 30,000 companies worldwide. Postman is designed with the developer in mind, and packed with features and options.

Postman features include:

Website

Report Abuse

Additional Information

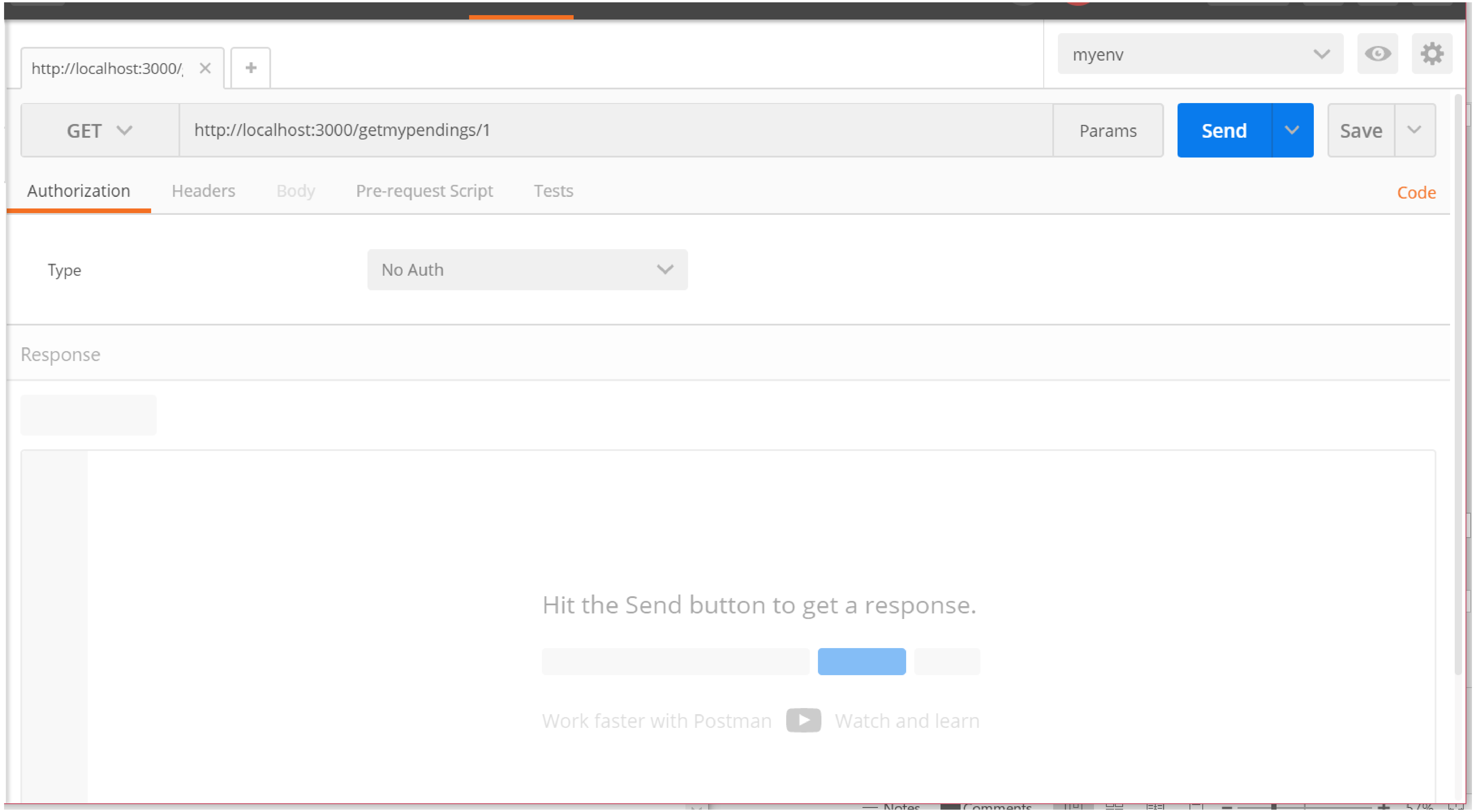
Version: 5.0.1

Express.js

Topic 7—Configuring and Using REST

Configuring REST

The screenshot below shows how you can configure REST.



GET http://localhost:3000/getmypendings/1

Type: No Auth

Using REST

REST = REpresentational State Transfer.

REST is the architectural Style in which clients and servers exchange representations of resources using a standardized interface and protocol.

Principles of REST:

- Addressability (URI)
- Interface Uniformity (HTTP)
- Statelessness (HTTP)
- Connectedness (Hypermedia)

All the servers will have ‘**URI**’ addressability.

The URI provides information about:

- The Protocol
- The Host/Port
- The Resource Path

Express.js

Topic 8—Using JSON and Reading POST data

Using JSON and Reading POST data

Express.js deals with JSON data very efficiently using an API “body-parser”

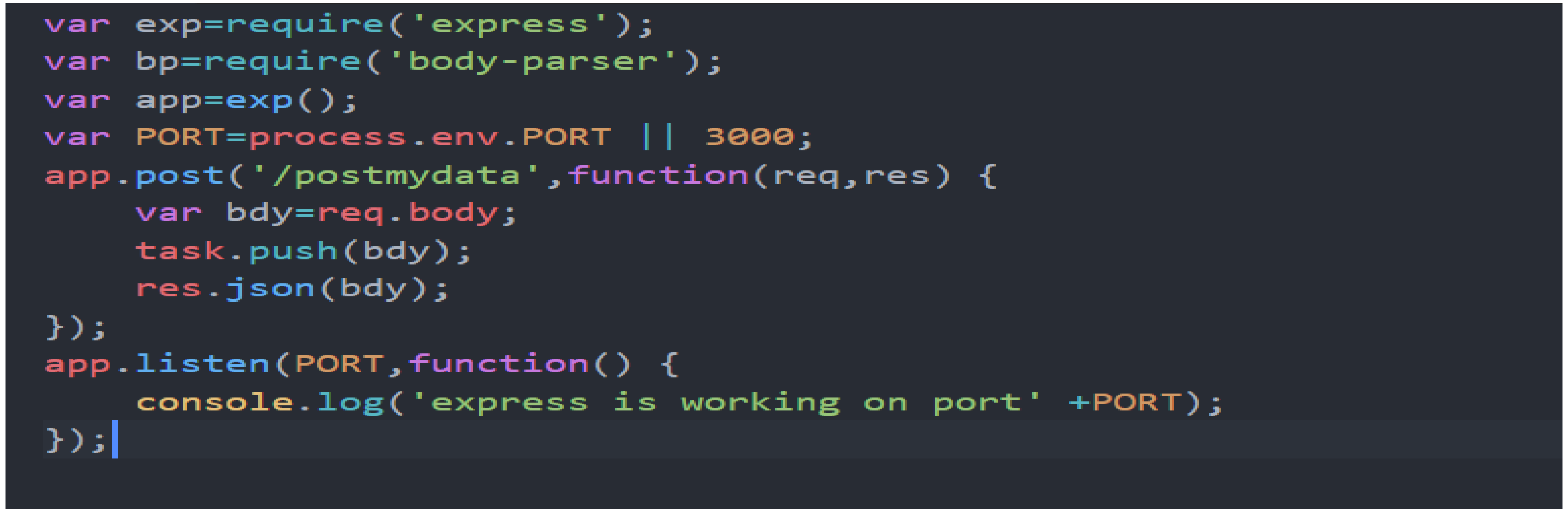
This command installs body parser

```
npm install body-parser -save
```

This command parses the text as JSON and exposes the resulting object on req.body

```
body-parser.json();
```

We can also render responses in the JSON format.



```
var exp=require('express');
var bp=require('body-parser');
var app=exp();
var PORT=process.env.PORT || 3000;
app.post('/postmydata',function(req,res) {
    var bdy=req.body;
    task.push(bdy);
    res.json(bdy);
});
app.listen(PORT,function() {
    console.log('express is working on port' +PORT);
});
```

Express.js

Topic 9—Adding Middleware

Adding Middleware

Middleware is a function that has access to the request-response object and the next middleware function of the application’s *req*uest-*res*ponse lifecycle .

The next middleware function is denoted by next variable name.

Middleware functions usually perform the following tasks:

- Execute any type of code.
- Make updates to the req and res objects.
- Terminate request-response cycle.
- Invoke the next middleware function in currently available stack.

Demo for Adding Middleware

? Quiz

QUIZ

1

ExpressJS is used for Server-Side Development.

a. True

b. False

QUIZ 1

ExpressJS is used for Server-Side Development.

a. True

b. False

The correct answer is **a. True.**

ExpressJS is used for Server-Side Development.

QUIZ 2

Which Template engine supports ExpressJS Framework?

a. Pug

b. XHTML

c. HTML

d. All of the above

QUIZ

2

Which Template engine supports ExpressJS Framework?

a. Pug

b. XHTML

c. HTML

d. All of the above

The correct answer is **a. Pug.**

Pug is the Template engine used in ExpressJS.

QUIZ

3

ExpressJS deals with JSON data very efficiently by using an API "____."

a. JSON

b. parseJSON

c. JSONParse

d. body-parser

QUIZ 3

ExpressJS deals with JSON data very efficiently by using an API “____.”

a. JSON

b. parseJSON

c. JSONParse

d. body-parser

The correct answer is **d. body-parser.**

ExpressJS deals with JSON data very efficiently by using an API “ body-parser.”

QUIZ 4

Which of the following tasks do middleware functions usually perform?

a. Execute any type of code

b. Make updates to the req and res objects

c. Terminate request-response cycle

d. All of the above

QUIZ 4

Which of the following tasks do middleware functions usually perform?

a. Execute any type of code

b. Make updates to the req and res objects

c. Terminate request-response cycle

d. All of the above

The correct answer is **d. All of the above.**

Middleware functions usually execute any type of code, make updates to the req and res objects, and terminate request-response cycle.

Key Takeaways

- ✓ Express.js is a built-in Node.js framework that helps developers create smarter and faster server-side REST and WEB applications.
- ✓ MVC Pattern stands for Model-View-Controller Pattern. This pattern is well known for application-specific separation of concerns.
- ✓ A template engine empowers developers to use static template files during web application.
- ✓ Express.js deals with JSON data very efficiently using an API “body-parser”.
- ✓ Middleware is a function that has access to the request response object and the next middleware function of the application’s req-res lifecycle.

Thank You