SE3040 – Application Frameworks
BSc (Hons) in Information Technology
Software Engineering Specialization
3rd Year
Faculty of Computing
SLIIT
2023 - Practical
Lab 04

Lab session 4 – Express.js REST API.

Objective: Teach set of basic concepts in REST API using Express.js.

Getting starting with Express.js

1. Create a new directory for your new Express.js project and run the following command inside of that folder.

```
npm install express body-parser –save
```

   This will install Express.js and Body Parser, which we will use to parse incoming requests.

2. After, all you have to do is create a new file called, index.js and add the following code and save it.

```
const express = require('express');
const bodyParser = require('body-parser');

const app = express();
const port = 3000;

app.use(bodyParser.urlencoded({ extended: true }));
app.use(bodyParser.json());

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

app.get('/api/user', (req, res) => {
  const users = [
    { id: 1, name: 'John Doe' },
    { id: 2, name: 'Jane Doe' },
  ];
  res.send(users);
});
```

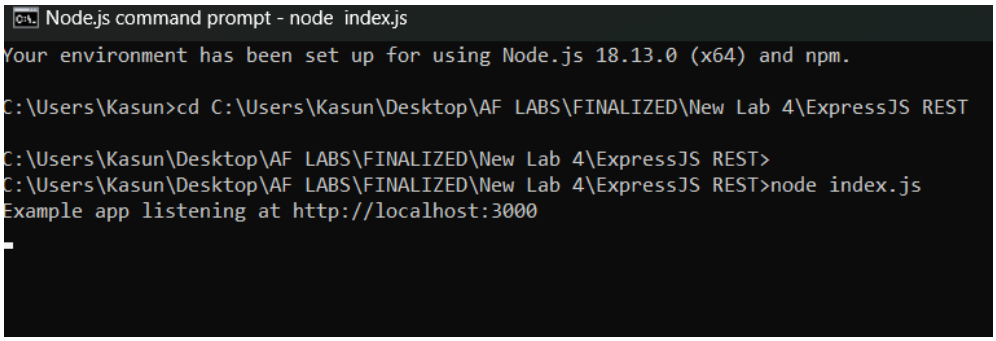
```
app.post('/api/user', (req, res) => {
  const { name } = req.body;
  const user = { id: 3, name };
  res.send(user);
});

app.listen(port, () => {
  console.log(`Example app listening at http://localhost:${port}`);
});
```

The first route is a simple GET request that returns a "Hello World!" message when you visit the homepage.
The second route is a GET request that returns an array of users when you visit /api/user.
The third route is a POST request that expects a JSON object with a name property in the request body, and returns a new user object with an id of 3 and the provided name.

3. Finally run the file with node command.

```
node index.js
```

4. That will display output like this.



5. Now you have started the Express.js application and if you visit that URL via your browser, that will show a “Hello World” text.

6. We can test our API using Postman.

7. Postman is an API Platform for developers to design, build, test and iterate their APIs and you can download it from following URL and install in your local system.

   https://www.postman.com/downloads/

8. After install Postman, you can make API requests as follows and, also, you can see the responses of particular request in there too.

9. Modify the code as follows,

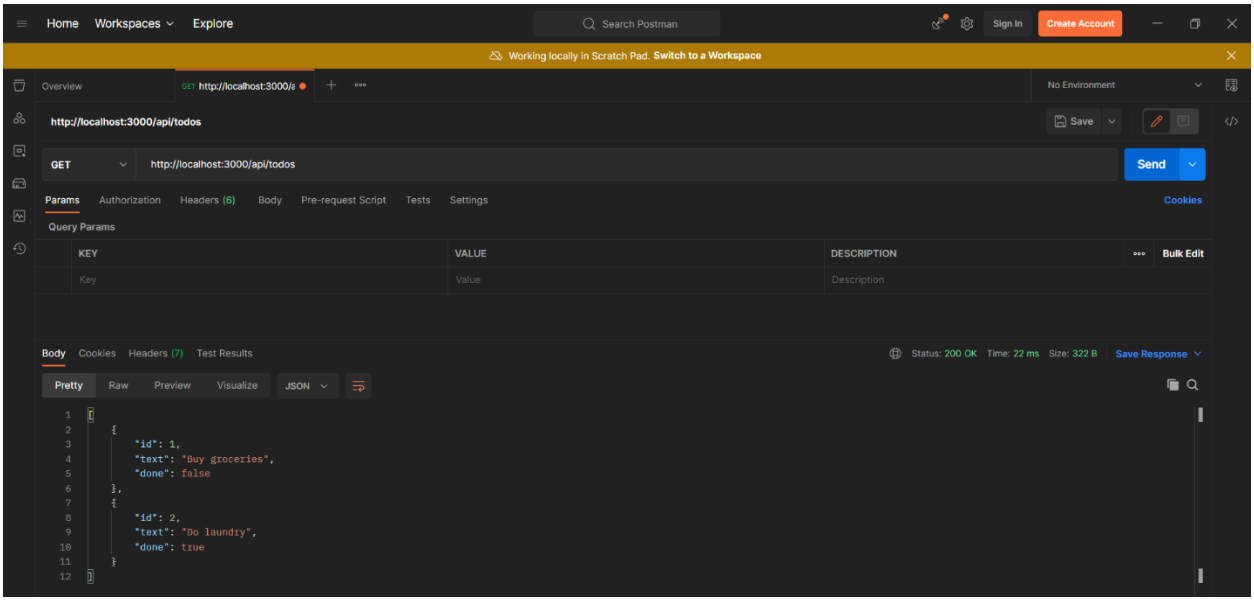
```
const express = require('express');
const bodyParser = require('body-parser');

const app = express();
const port = 3000;

app.use(bodyParser.urlencoded({ extended: true }));
app.use(bodyParser.json());

let todos = [
  { id: 1, text: 'Buy groceries', done: false },
  { id: 2, text: 'Do laundry', done: true },
];

app.get('/api/todos', (req, res) => {
  res.send(todos);
});

app.get('/api/todos/:id', (req, res) => {
  const id = Number(req.params.id);
  const todo = todos.find(todo => todo.id === id);
  if (todo) {
    res.send(todo);
  } else {
    res.status(404).send('Todo not found');
  }
});

app.post('/api/todos', (req, res) => {
  const { text, done } = req.body;
  const id = todos.length + 1;
  const todo = { id, text, done };
  todos.push(todo);
  res.send(todo);
});

app.put('/api/todos/:id', (req, res) => {
  const id = Number(req.params.id);
  const { text, done } = req.body;
  const todo = todos.find(todo => todo.id === id);
```

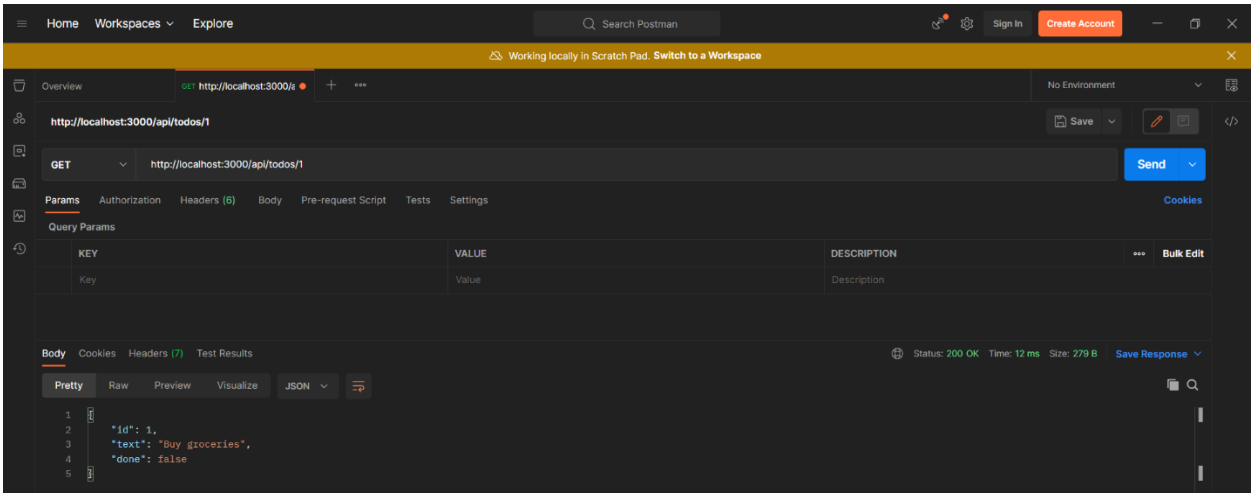
```
  if (todo) {
    todo.text = text || todo.text;
    todo.done = done || todo.done;
    res.send(todo);
  } else {
    res.status(404).send('Todo not found');
  }
});

app.delete('/api/todos/:id', (req, res) => {
  const id = Number(req.params.id);
  todos = todos.filter(todo => todo.id !== id);
  res.send(`Todo with id ${id} has been deleted`);
});

app.listen(port, () => {
  console.log(`Example app listening at http://localhost:${port}`);
});
```

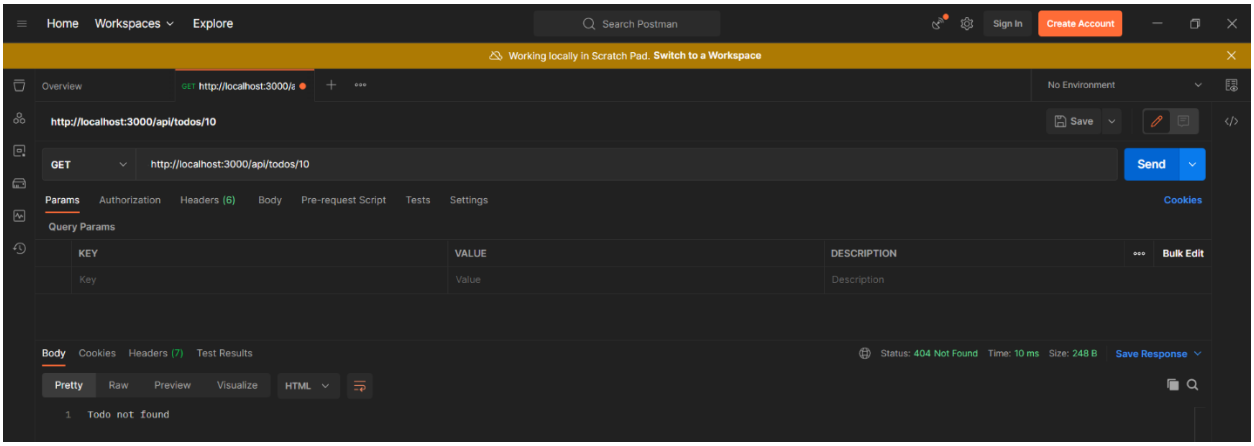
10. Now run the application again and you can see how the API working via Postman.

11. In here you can practicing GET, POST, PUT, DELETE requests.

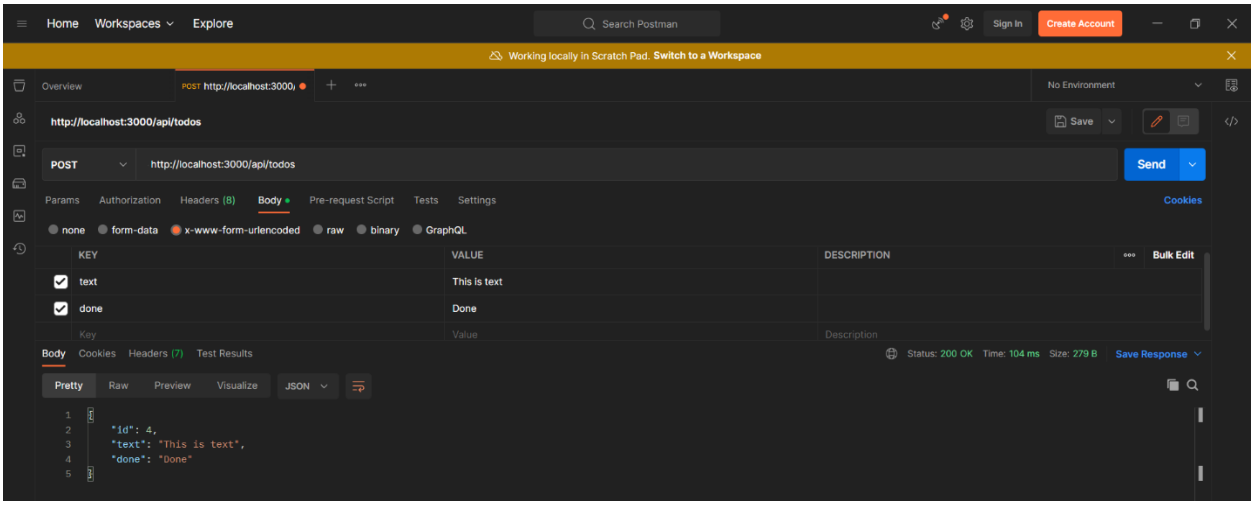
Some screenshots of GET are as follows,

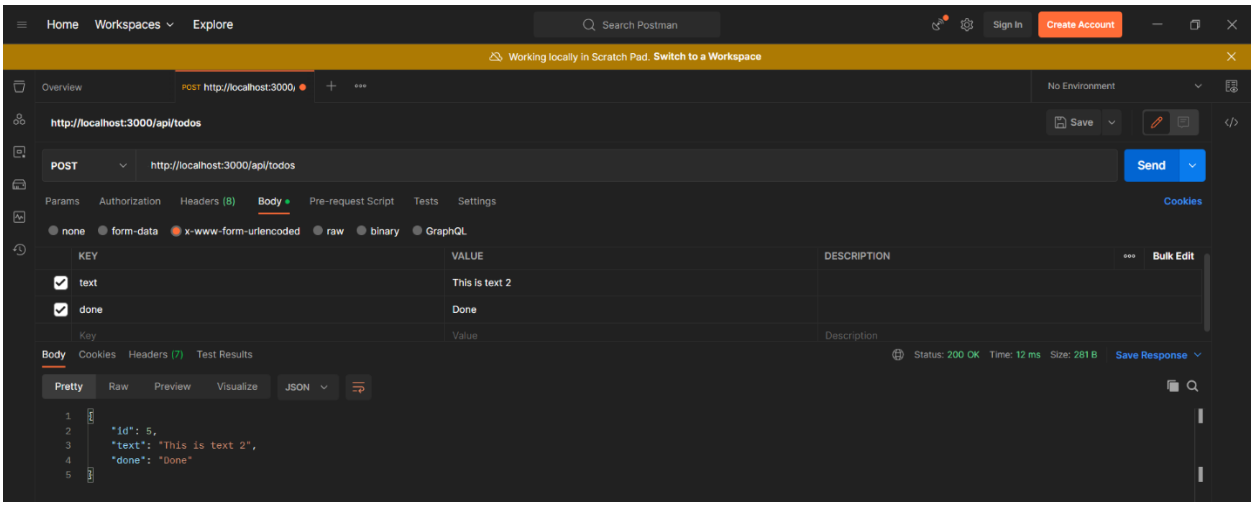




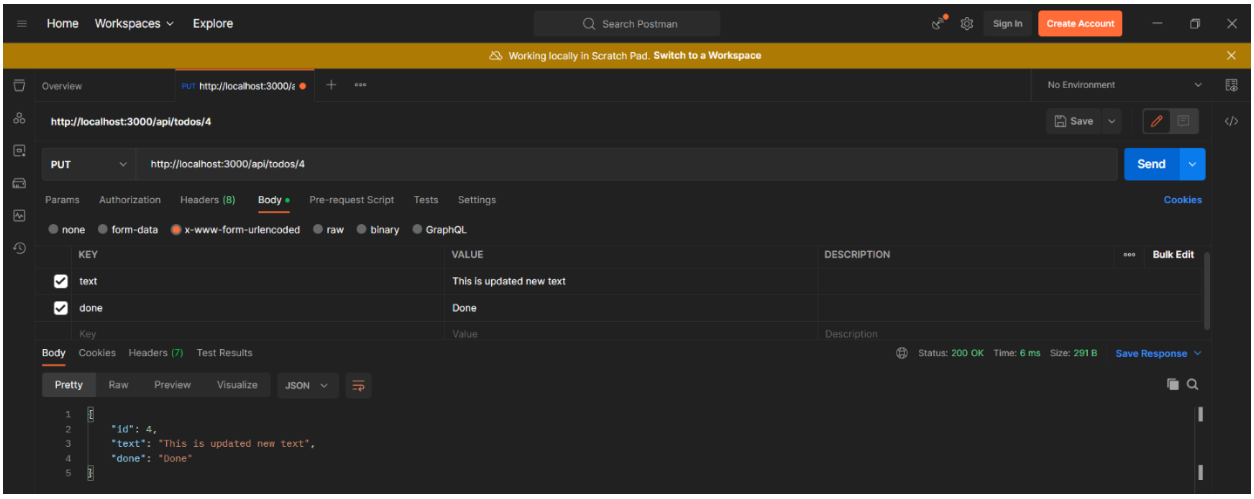


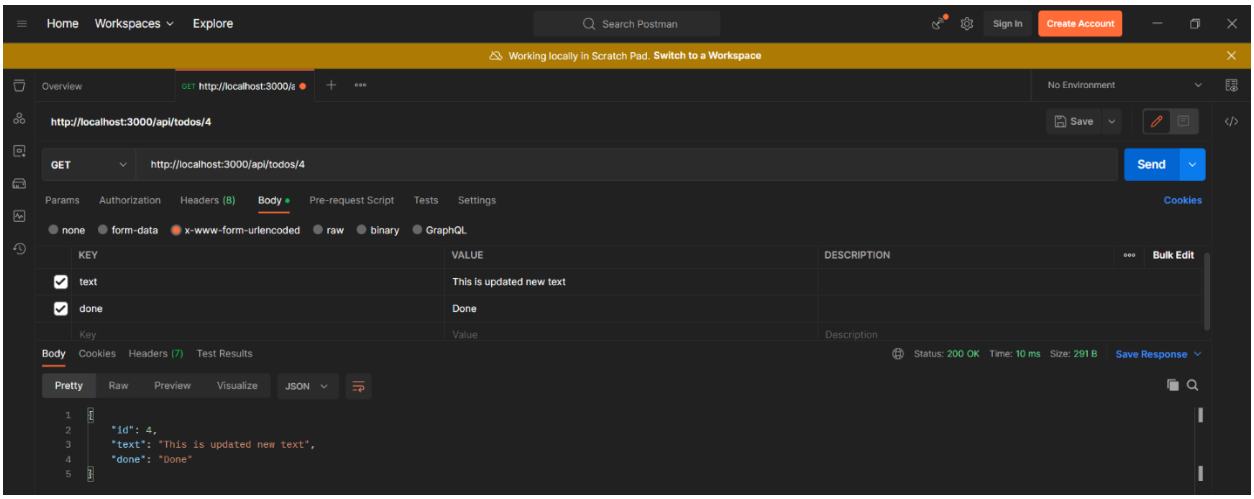
Some Screenshots of POST as follows,





Some screenshots of PUT as follows,





Some screenshots of DELETE as follows,