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Факультет: електроніки і комп'ютерних технологій

Лабораторна робота №5
з курсу “Веб програмування на стороні сервера”
«Робота з протоколом HTTP»

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Мета:

- Робота з різними типами HTTP запитів
- Створення примітивного сервісу збереження нотаток з допомогою Express js
- Використання Postman для тестування сервісу

Хід роботи

1. Створюємо проект та встановлюємо express.js, nodemon(для розробки), multer та body-parser

```
~/Desktop/Year2/Sem1/Web/Lab5 master ?1
> 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 init' for definitive documentation on these fields
and exactly what they do.

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

Press ^C at any time to quit.
package name: (lab5)
version: (1.0.0)
description:
entry point: (main.js)
test command:
git repository:
keywords:
author:
license: (ISC)
About to write to /Users/vvybyranyi/Desktop/Year2/Sem1/Web/lab5/package.json:

{
  "name": "lab5",
  "version": "1.0.0",
  "description": "",
  "main": "main.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "",
  "license": "ISC"
}

Is this OK? (yes)
```

```
~/Desktop/Year2/Sem1/Web/Lab5 master ?2 1.0.0
> npm install express --save

added 62 packages, and audited 63 packages in 3s

11 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
```

```
~/Desktop/Year2/Sem1/web/lab5 master ?6 1.0.0
> npm install --dev nodemon
npm WARN config dev Please use --include=dev instead.

added 34 packages, and audited 97 packages in 2s

14 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
```

```
~/Desktop/Year2/Sem1/Web/lab5  master 1.0.0
- npm i multer

up to date, audited 118 packages in 735ms

15 packages are looking for funding
  run 'npm fund' for details

found 0 vulnerabilities

~/Desktop/Year2/Sem1/Web/lab5  master 1.0.0
- npm i body-parser

up to date, audited 118 packages in 552ms

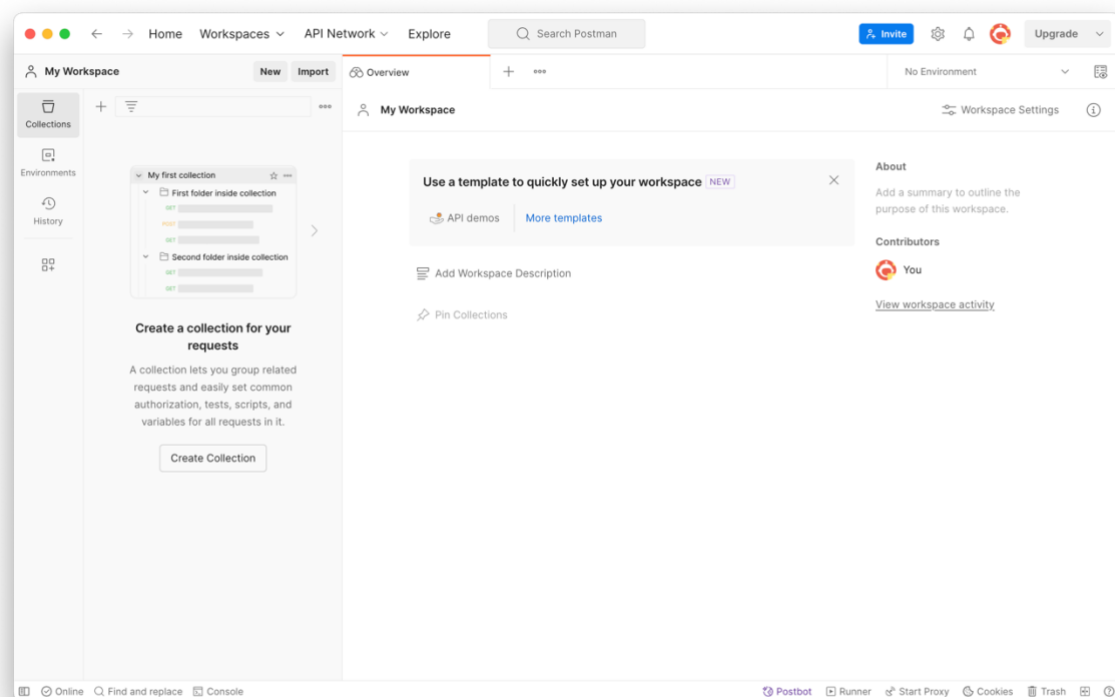
15 packages are looking for funding
  run 'npm fund' for details

found 0 vulnerabilities
```

2. Додамо dev скрипт до файлу package.json

```
"scripts": {
  "test": "echo \"Error: no test specified\" && exit 1",
  "dev": "nodemon main.js"
},
```

3. Встановити Postman



4. Створити нову колекцію та запити для тестування

```
lab5Web

GET get /notes

GET get /UploadForm.html

POST post /upload

GET get /notes/my_note

GET get /notes/my_note(error)

POST post /upload(error)

PUT put my_note

GET get notes/my_note

PUT put my_note(error)

DEL delete /notes/my_note

GET get /notes

DEL delete /notes/my_note(error)
```

5. Написати скрипти для тестування роботи сервера

```
lab5Web

GET get /notes

GET get /UploadForm.html

POST post /upload

GET get /notes/my_note

GET get /notes/my_note(error)

POST post /upload(error)

PUT put my_note

GET get notes/my_note

PUT put my_note(error)

DEL delete /notes/my_note

GET get /notes

DEL delete /notes/my_note(error)
```

GET localhost:8000/notes

Params Authorization Headers (6) Body Pre-request Script Tests Settings

```
1 pm.test("get /notes", () => {
2   pm.expect(pm.response.text()).to.equal("[]")
3 })
```

lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

GETlocalhost:8000/UploadForm.html

ParamsAuthorizationHeaders (6)BodyPre-request ScriptTestsSettings

```
1 pm.test("get form", () => {
2   pm.expect(pm.response.text()).to.include("<!DOCTYPE html>")
3 })
```

lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

POSTlocalhost:8000/upload

ParamsAuthorizationHeaders (8)BodyPre-request ScriptTestsSettings

noneform-datax-www-form-urlencodedrawbinaryGraphQL

	Key	Value
<input checked="" type="checkbox"/>	note_name	my_note
<input checked="" type="checkbox"/>	note	some text
	Key	Value

lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

POSTlocalhost:8000/upload

ParamsAuthorizationHeaders (8)BodyTestsSettings

```
1 pm.test("post_test", () => {
2   pm.response.to.have.status(201);
3 })
```

lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

GETlocalhost:8000/notes/my_note

ParamsAuthorizationHeaders (6)BodyPre-request ScriptTestsSettings

```
1 pm.test("post_check", () => {
2   pm.response.to.have.body("some text")
3 })
```

lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

GETlocalhost:8000/notes/non_existing_note

ParamsAuthorizationHeaders (6)BodyPre-request ScriptTestsSettings

```
1 pm.test("post_check(error)", () => {
2   pm.response.to.have.status(404)
3 })
```

lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

POSTlocalhost:8000/upload

ParamsAuthorizationHeaders (8)BodyPre-request ScriptTestsSettings

```
1 pm.test("post_test(error)", () => {
2   pm.response.to.have.status(400);
3 })
```

lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

PUTlocalhost:8000/notes/my_note

ParamsAuthorizationHeaders (8)BodyPre-request ScriptTestsSettings

noneform-datax-www-form-urlencodedrawbinaryGraphQL

	Key	Value
<input checked="" type="checkbox"/>	note	some text2
	Key	Value

lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

PUTlocalhost:8000/notes/my_note

ParamsAuthorizationHeaders (8)BodyPre-request ScriptTestsSettings

```
1 pm.test("put_test", () => {
2   pm.response.to.have.status(200)
3 })
```

lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

GETlocalhost:8000/notes/my_note

ParamsAuthorizationHeaders (6)BodyPre-request ScriptTestsSettings

```
1 pm.test("get /notes/my_note", () => {
2   pm.expect(pm.response.text()).to.equal("some text2")
3 })
```

lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

PUTlocalhost:8000/notes/non_existing_note

ParamsAuthorizationHeaders (8)Body●Pre-request ScriptTests●Settings

```
1 pm.test("put_test", () => {
2   pm.response.to.have.status(404)
3 })
```

lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

DELETELlocalhost:8000/notes/my_note

ParamsAuthorizationHeaders (6)BodyPre-request ScriptTests●Settings

```
1 pm.test("put_test", () => {
2   pm.response.to.have.status(200)
3 })
```

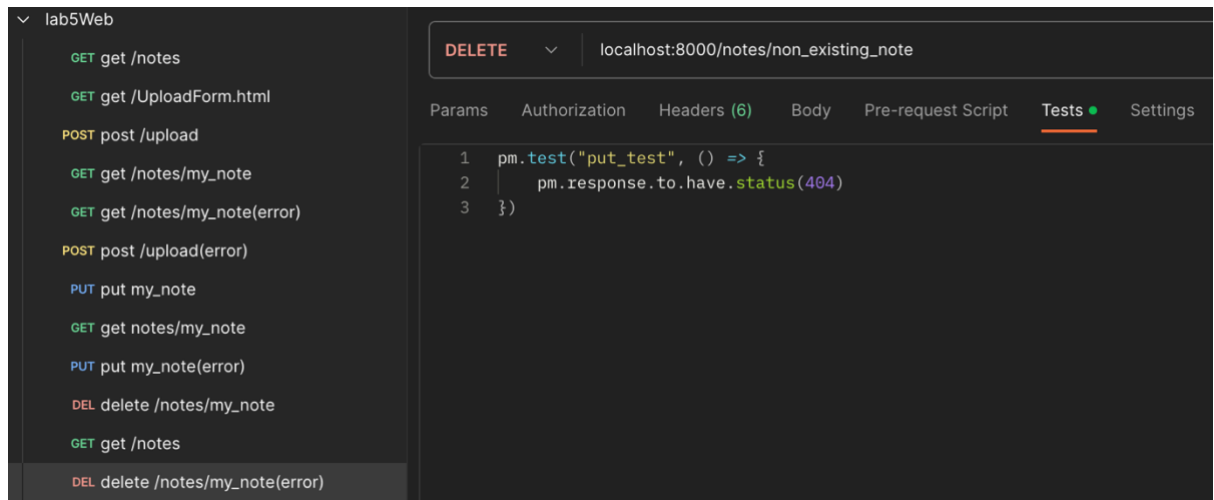
lab5Web

- GET get /notes
- GET get /UploadForm.html
- POST post /upload
- GET get /notes/my_note
- GET get /notes/my_note(error)
- POST post /upload(error)
- PUT put my_note
- GET get notes/my_note
- PUT put my_note(error)
- DEL delete /notes/my_note
- GET get /notes
- DEL delete /notes/my_note(error)

GETlocalhost:8000/notes

ParamsAuthorizationHeaders (6)BodyPre-request ScriptTests●Settings

```
1 pm.test(["get /notes", () => {
2   pm.expect(pm.response.text()).to.equal("[]")
3 }])
```

6. Написати сервер для обробки запитів за допомогою express.js

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

app.use(bodyParser.json());

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

app.use(multer({dest: __dirname + '/static/uploads/'}).any());

app.use("/", express.static(__dirname + '/static'));

var notes = []

app.get("/notes", (req, res) => {
  res.json(notes);
})

app.post("/upload", (req, res) => {
  var note = req.body.note_name

  if(notes.map(a => a.note_name).includes(note)){
    res.sendStatus(400)
  }else{
    notes.push(req.body)
    res.sendStatus(201)
  }
  console.log(notes)
})

app.get("/notes/:noteName", (req, res) =>{
  note = req.params.noteName;
  note_names = notes.map(a => a.note_name);
  if(note_names.includes(note)){
```

```

    res.send(notes[note_names.indexOf(note)].note)
  }else{
    res.sendStatus(404)
  }
})

app.delete("/notes/:noteName", (req, res) =>{
  note = req.params.noteName;
  note_names = notes.map(a => a.note_name);
  if(note_names.includes(note)){
    notes.splice(notes.indexOf(note), 1)
    res.sendStatus(200)
  }else{
    res.sendStatus(404)
  }
})

app.put("/notes/:noteName", (req, res) =>{
  note = req.params.noteName;
  note_names = notes.map(a => a.note_name);
  if(note_names.includes(note)){
    notes[note_names.indexOf(note)].note = req.body.note
    res.sendStatus(200)
  }else{
    res.sendStatus(404)
  }
})


app.listen(8000);

```

7. Переконаємось у правильній роботі сервера за допомогою Postman

lab5Web - Run results

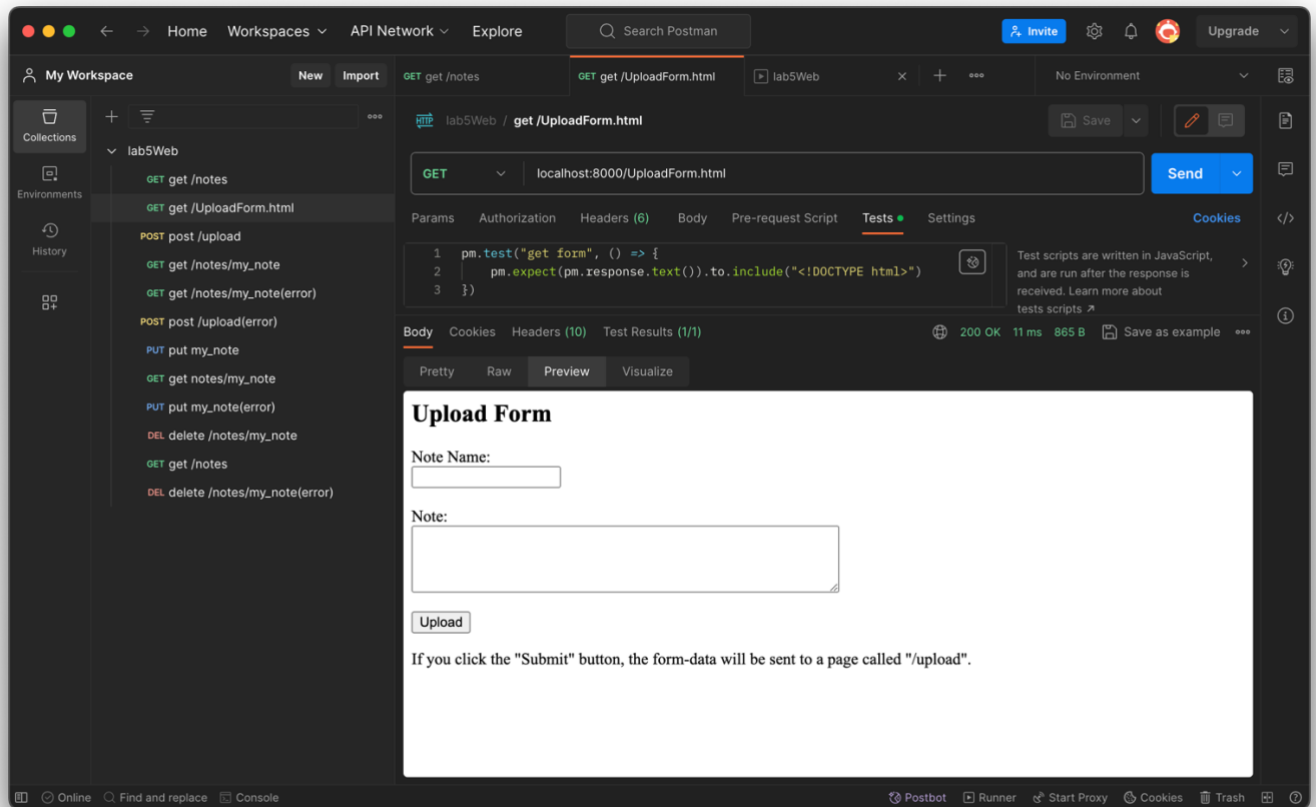
Run Again

 Ran today at 23:45:33 · [View all runs](#)

Source	Environment	Iterations	Duration	All tests	Avg. Resp. Tim
Runner	none	1	370ms	12	5 ms

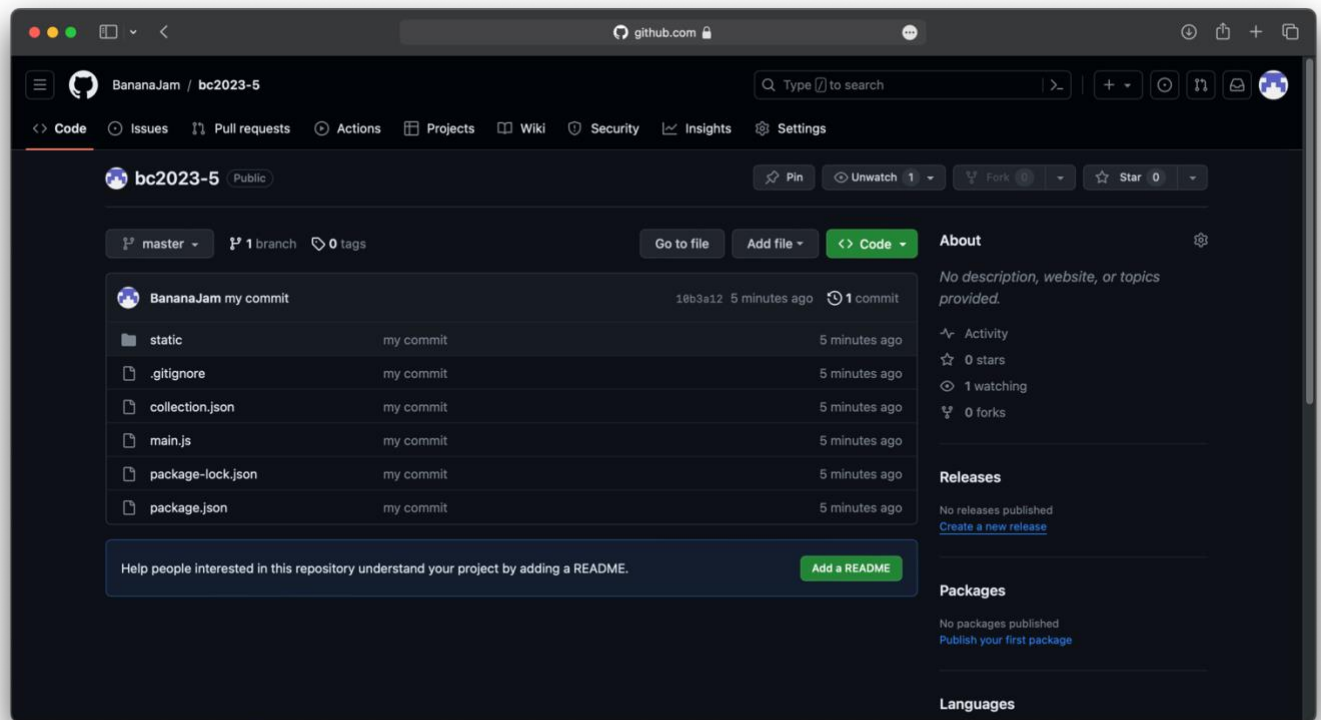
RUN SUMMARY

				1
▶	GET	get /notes	1 0	
▶	GET	get /UploadForm.html	1 0	
▶	POST	post /upload	1 0	
▶	GET	get /notes/my_note	1 0	
▶	GET	get /notes/my_note(error)	1 0	
▶	POST	post /upload(error)	1 0	
▶	PUT	put my_note	1 0	
▶	GET	get notes/my_note	1 0	
▶	PUT	put my_note(error)	1 0	
▶	DELETE	delete /notes/my_note	1 0	
▶	GET	get /notes	1 0	
▶	DELETE	delete /notes/my_note(error)	1 0	



8. Створимо репозиторій на GitHub та завантажимо роботу

9. Переконаємось що робота завантажена



Висновок: Виконавши лабораторну роботу я створив програму яка запускає веб-сервер і обробляє запити різних форматів, навчився працювати з express.js та Postman.