

ECSE 429 – Project Part A

Exploratory Testing Session Notes

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Exploratory Testing Session Notes

Features

The ToDoManager has three main features. All three features followed the same format: A table containing values related to each feature. Specifically, the three features are Todo, Projects and Category.

APIs

The ToDoManager contains documentation with information on how to use its APIs. We compiled a list of API calls that are documented in order to improve our testing of this application. We have listed the APIs we will be testing later in this document (see TODOS & PROJECTS section).

Unit Test Suite

We used Junit and Java to perform our unit tests. We followed the Arrange/Act/Assert design pattern for our code structure.

Source Code

To access source code for our tests, follow path:

ECSE_429_Software_Validation/Part_A/src/test/java/org/example

- /TodoTests for the tests related to the todo APIs
- /ProjectTests for the tests related to the project APIs

Testing notes in an Excel sheet as well and Images of unit testing can be found in:
ECSE_429_Software_Validation/Part_A/Appendix

Tools used:

- Postman: Version 11.15.0
- IntelliJ: Version #IU-242.22855.74
- Java: Version 21
- Junit: Version 5.1

Testing was done with a combination of Postman API tests and Junit 5 tests.

TODOS

/todos

1. GET /todos

GET http://localhost:4567/todos Send

Params Auth Headers (7) Body Scripts Settings Cookies

Query Params

	Key	Value	Description	...	Bulk Edit
	Key	Value	Description		

Body 200 OK 15 ms 378 B

Pretty Raw Preview Visualize JSON

```
1 {
2   "todos": [
3     {
4       "id": "1",
5       "title": "scan paperwork",
6       "doneStatus": "false",
7       "description": "",
8       "tasks": [
9         {
10          "id": "1"
11        }
12      ],
13       "categories": [
14         {
15          "id": "1"
16        }
17      ]
18    },
19    {
20      "id": "2",
```

2. HEAD /todos

HEAD http://localhost:4567/todos Send

Params Auth Headers (7) Body Scripts Settings Cookies

Query Params

	Key	Value	Description	...	Bulk Edit
	Key	Value	Description		

Headers 200 OK 6 ms 147 B

	Key	Value
	Date	Sun, 06 Oct 2024 19:49:59 GMT
	Content-Type	application/json
	Transfer-Encoding	chunked
	Server	Jetty(9.4.z-SNAPSHOT)

3. POST /todos

GET http://localhost:4567/todos Send

Params Auth Headers (7) Body Scripts Settings Cookies

Query Params

	Key	Value	Description	...	Bulk Edit
	Key	Value	Description		

Body 200 OK 15 ms 378 B

Pretty Raw Preview Visualize JSON

```
12   },
13   "categories": [
14     {
15       "id": "1"
16     }
17   ]
18 },
19 {
20   "id": "2",
21   "title": "file paperwork",
22   "doneStatus": "false",
23   "description": "",
24   "tasks": [
25     {
26       "id": "1"
27     }
28   ]
29 }
30 ]
31 }
```

POST http://localhost:4567/todos?title=test helo&doneStatus=true... Send

Params Auth Headers (9) Body Scripts Settings Cookies

raw JSON Beautify

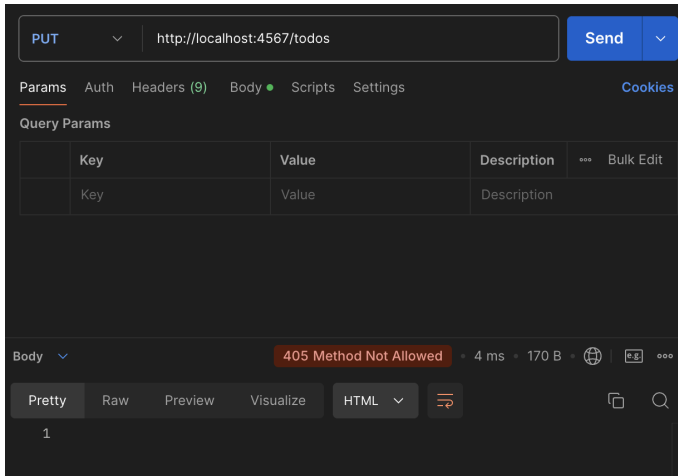
```
1 {
2   "title": "Dogroceries",
3   "doneStatus": false,
4   "description": "Buy apples, bananas, and oranges"
5 }
```

Body 201 Created 25 ms 273 B

Pretty Raw Preview Visualize JSON

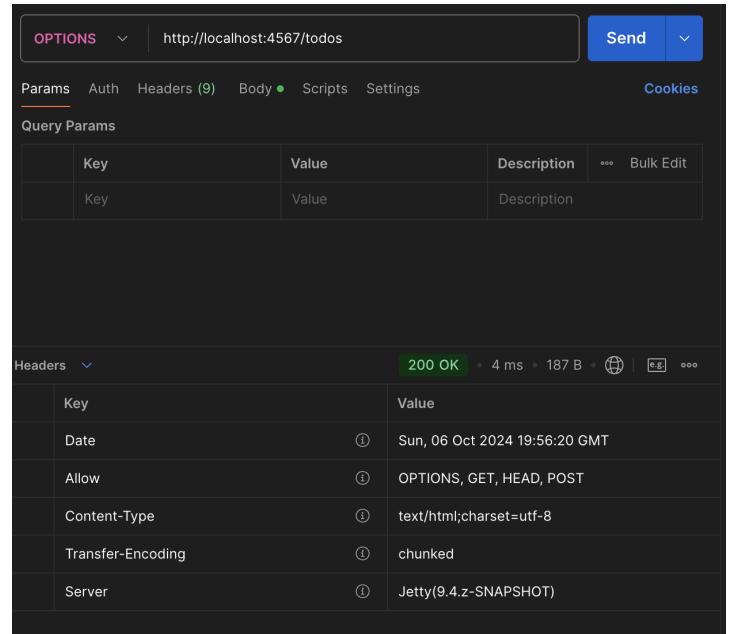
```
1 {
2   "id": "3",
3   "title": "Dogroceries",
4   "doneStatus": "false",
5   "description": "Buy apples, bananas, and oranges"
6 }
```

4. PUT /todos

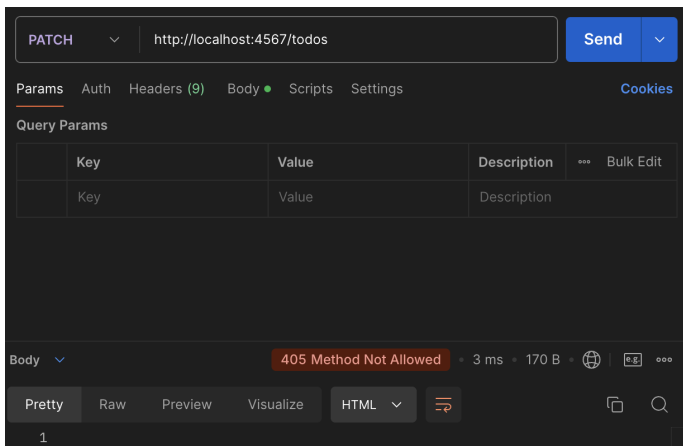


Comments: PUT was neither documented nor allowed

6. OPTIONS /todos

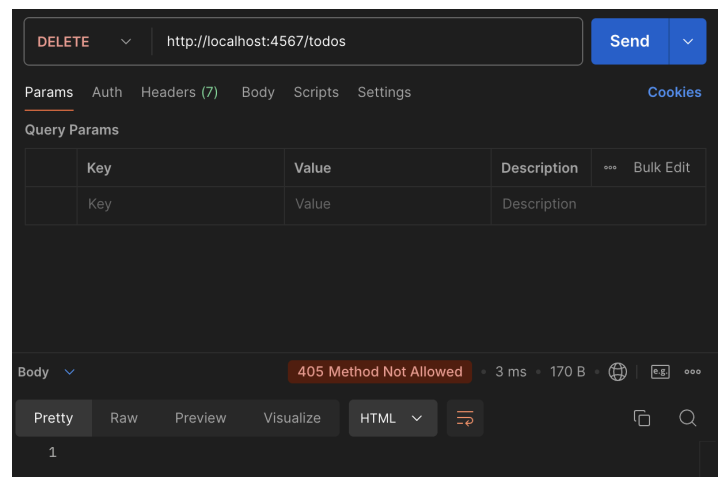


5. PATCH /todos



Comments: PATCH was neither documented nor allowed

7. DELETE /todos



Comments: DELETE was neither documented nor allowed

/todos/:id

1. GET /todos/:id

GET

Params Auth Headers (7) Body Scripts Settings Cookies

Query Params

Key	Value	Description	Bulk Edit
Key	Value	Description	

Body 8 ms 281 B

Pretty Raw Preview Visualize JSON

```
1 {
2   "todos": [
3     {
4       "id": "1",
5       "title": "scan paperwork",
6       "doneStatus": "false",
7       "description": "",
8       "tasksof": [
9         {
10          "id": "1"
11        }
12      ],
13       "categories": [
14         {
15          "id": "1"
16        }
17       ]
18     }
19   ]
20 }
```

2. HEAD /todos/:id

HEAD

Params Auth Headers (7) Body Scripts Settings Cookies

Query Params

Key	Value	Description	Bulk Edit
Key	Value	Description	

Headers 4 ms 147 B

Key	Value
Date	Sun, 06 Oct 2024 20:06:52 GMT
Content-Type	application/json
Transfer-Encoding	chunked
Server	Jetty(9.4.z-SNAPSHOT)

3. POST /todos/:id

POST

Params Auth Headers (9) Body Scripts Settings Cookies

Query Params

Key	Value	Description	Bulk Edit
Key	Value	Description	

Body 6 ms 272 B

Pretty Raw Preview Visualize JSON

```
1 {
2   "id": "1",
3   "title": "Complete Project",
4   "doneStatus": "false",
5   "description": "",
6   "tasksof": [
7     {
8       "id": "1"
9     }
10  ],
11   "categories": [
12     {
13       "id": "1"
14     }
15  ]
16 }
```

4. PUT /todos/:id

PUT

Params Auth Headers (9) Body Scripts Settings Cookies

raw

```
1 {
2   "title": "Delete Project",
3   "doneStatus": true
4   // "description": "Complete explanatory testing Part A"
5 }
6
```

Body 7 ms 220 B

Pretty Raw Preview Visualize JSON

```
1 {
2   "id": "1",
3   "title": "Delete Project",
4   "doneStatus": "true",
5   "description": ""
6 }
```

Comments: When updating all values at once, put worked well. However, when updating a single value, all other values would revert back to a default state

5. DELETE /todos/:id

The screenshot shows a REST client interface with the following details:

- Method:** DELETE
- URL:** http://localhost:4567/todos/id
- Response:** 200 OK, 4 ms, 147 B
- Body:** Pretty, Raw, Preview, Visualize, JSON (selected), 1

Key	Value	Description	Bulk Edit
Key	Value	Description	

Key	Value	Description	Bulk Edit
id	1	Description	

6. OPTIONS /todos/:id

The screenshot shows a REST client interface with the following details:

- Method:** OPTIONS
- URL:** http://localhost:4567/todos/1
- Response:** 200 OK, 3 ms, 200 B
- Body:** Headers (selected), 200 OK, 3 ms, 200 B

Key	Value	Description	Bulk Edit
Key	Value	Description	

Key	Value
Date	Sun, 06 Oct 2024 20:18:31 GMT
Allow	OPTIONS, GET, HEAD, POST, PUT, DELETE
Content-Type	text/html; charset=utf-8
Transfer-Encoding	chunked
Server	Jetty(9.4.z-SNAPSHOT)

7. PATCH /todos/:id

The screenshot shows a REST client interface with the following details:

- Method:** PATCH
- URL:** http://localhost:4567/todos/id
- Response:** 405 Method Not Allowed, 3 ms, 170 B
- Body:** Pretty, Raw, Preview, Visualize, HTML (selected), 1

Key	Value	Description	Bulk Edit
Key	Value	Description	

Key	Value	Description	Bulk Edit
id	Value	Description	

Comments: PATCH was neither documented nor allowed

PROJECTS

/projects

1. GET /projects

GET http://localhost:4567/projects

Send

Params Auth Headers (7) Body Scripts Settings

Query Params

Key	Value	Description	Bulk Edit
Key	Value	Description	

Body 200 OK 4 ms 280 B

Pretty Raw Preview Visualize JSON

```
1 {
2   "projects": [
3     {
4       "description": "",
5       "active": "false",
6       "id": "1",
7       "completed": "false",
8       "title": "Office Work",
9       "tasks": [
10        {
11          "id": "2"
12        },
13        {
14          "id": "1"
15        }
16      ]
17    }
18  ]
19 }
```

2. POST /projects

POST http://localhost:4567/projects

Send

Params Auth Headers (8) Body Scripts Settings

Query Params

Key	Value	Description	Bulk Edit
Key	Value	Description	

Body 201 Created 4 ms 249 B

Pretty Raw Preview Visualize JSON

```
1 {
2   "description": "",
3   "active": "false",
4   "id": "2",
5   "completed": "false",
6   "title": ""
7 }
```

Comments: Created multiple new Projects.
All created and shown on GUI as expected

3. PUT /projects

PUT http://localhost:4567/projects

Send

Params Auth Headers (9) Body Scripts Settings

Query Params

Key	Value	Description	Bulk Edit
Key	Value	Description	

Body 405 Method Not Allowed 3 ms 170 B

Pretty Raw Preview Visualize HTML

```
1
```

Comments: PUT was neither documented nor allowed

4. PATCH /projects

PATCH http://localhost:4567/projects

Send

Params Auth Headers (8) Body Scripts Settings

Query Params

Key	Value	Description	Bulk Edit
Key	Value	Description	

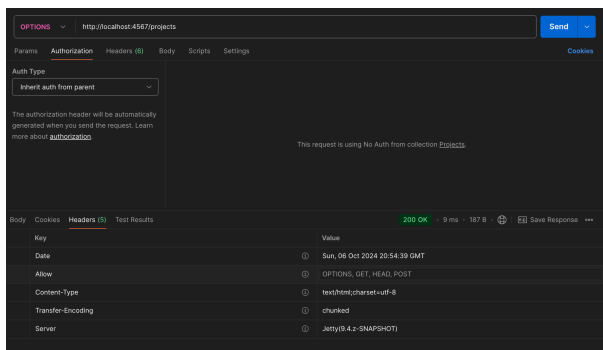
Body 405 Method Not Allowed 3 ms 170 B

Pretty Raw Preview Visualize HTML

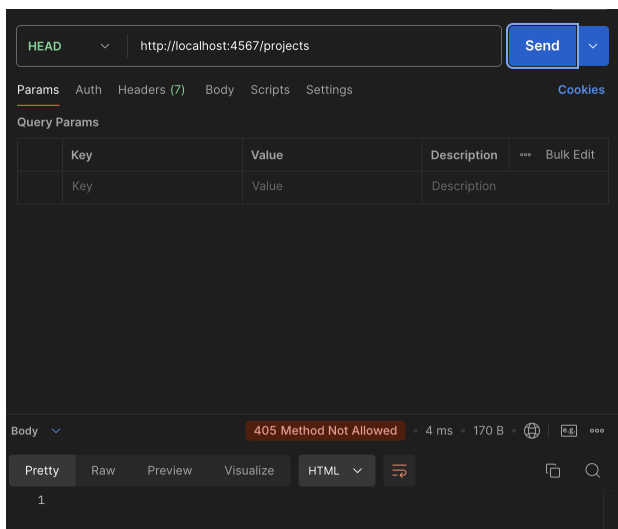
```
1
```

Comments: PUT was neither documented nor allowed

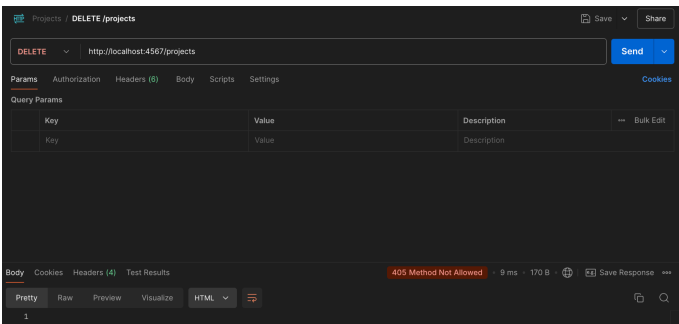
5. OPTIONS /projects



6. HEAD /projects



7. DELETE /projects



Comments: DELETE was neither documented nor allowed

/projects/:id

1. GET /projects/:id

GET

Params • Auth Headers (7) Body Scripts Settings Cookies

Query Params

Key	Value	Description	...	Bulk Edit
Key	Value	Description		

Path Variables

Key	Value	Description	...	Bulk Edit
id	1	Description		

Body

```
1 {
2   "projects": [
3     {
4       "description": "",
5       "active": "false",
6       "id": "1",
7       "completed": "false",
8       "title": "Office Work",
9       "tasks": [
10        {
11          "id": "2"
12        },
13        {
14          "id": "1"
15        }
16      ]
17    }
18  ]
19 }
```

GET

Params • Auth Headers (7) Body Scripts Settings Cookies

Query Params

Key	Value	Description	...	Bulk Edit
Key	Value	Description		

Path Variables

Key	Value	Description	...	Bulk Edit
id	4	Description		

Body

```
1 {
2   "errorMessages": [
3     "Could not find an instance with projects/4"
4   ]
5 }
```

2. PUT /projects/:id

PUT

Params • Auth Headers (9) Body Scripts Settings Cookies

raw

```
1 { "active": true }
```

Body

```
1 {
2   "description": "",
3   "active": "true",
4   "id": "4",
5   "completed": "false",
6   "title": ""
7 }
```

PUT

Params • Auth Headers (9) Body Scripts Settings Cookies

raw

```
1 { "completed": true }
```

Body

```
1 {
2   "description": "",
3   "active": "false",
4   "id": "4",
5   "completed": "true",
6   "title": ""
7 }
```

PUT

Params • Auth Headers (9) Body Scripts Settings Cookies

raw

```
1 { "title": "Test Title" }
```

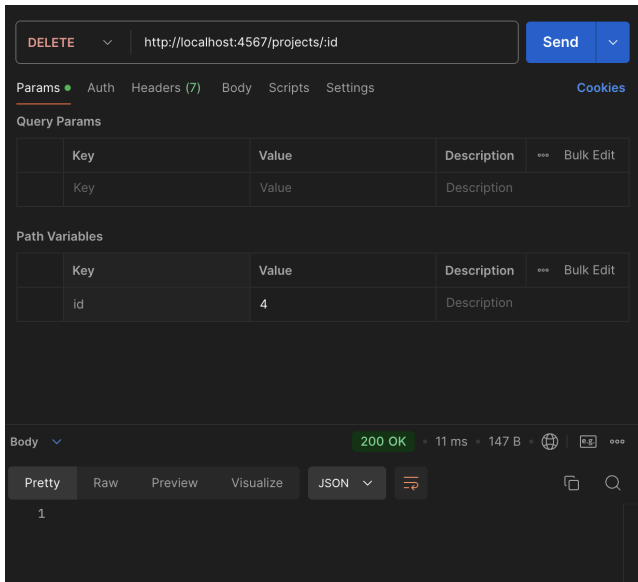
Body

```
1 {
2   "description": "",
3   "active": "false",
4   "id": "4",
5   "completed": "false",
6   "title": "Test Title"
7 }
```

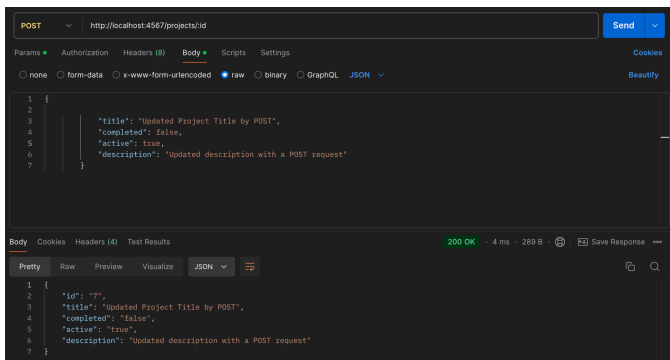
Comments: When updating all values at once, put worked well. However, when updating a single

value, all other values would revert back to a default state

3. DELETE /projects/:id

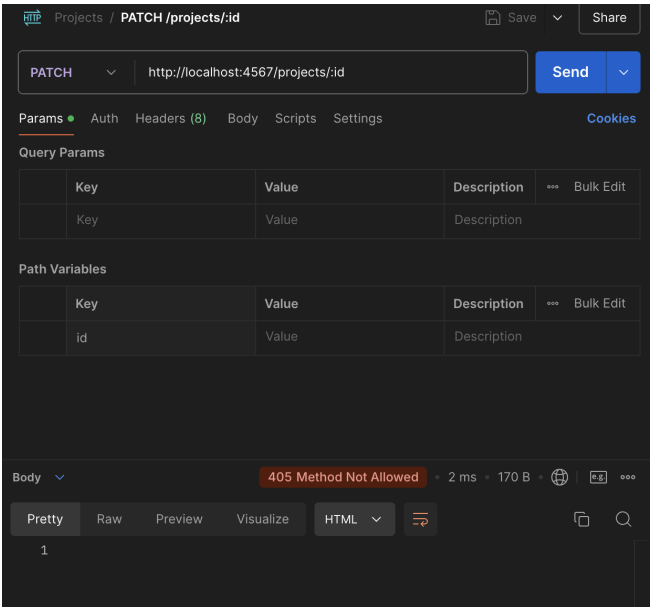


4. POST /projects/:id



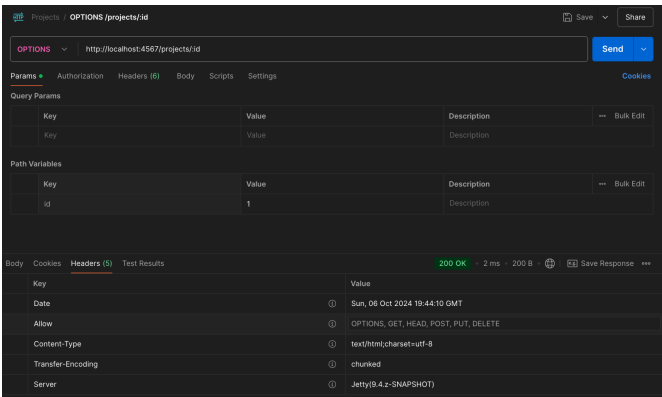
Comments: POST was neither documented nor allowed

5. PATCH /projects/:id



Comments: PATCH was neither documented nor allowed

6. OPTIONS /projects/:id



7. HEAD /projects/:id

