

Session Notes - 3

Charter:

Identify capabilities and areas of potential instability of the “rest api todo list manager”.

Identify documented and undocumented “rest api todo list manager” capabilities.

For each capability create a script or small program to demonstrate the capability.

Exercise each capability identified with data typical to the intended use of the application.

Build:

```
java -jar runTodoManagerRestAPI-1.5.5.jar
```

Area:

Capabilities and areas of potential instability (documented and undocumented) as well as tests

using data typical to the intended use of the application.

Environment:

OS Version: MacOS Sonoma 14.0, Screen Resolution: 3458 x 2234

Performed by:

| Session Participants | Student Id | Email address |
|----------------------|------------|--------------------------------|
| Abiola Olaniyan | 260983951 | abiola.olaniyan@mail.mcgill.ca |
| Mihail Calitoiu | 260972537 | mihail.calitoiu@mail.mcgill.ca |

Time:

Session start: 9:25 PM, October 12, 2023

Session end: 10:12 PM, October 12, 2023

Roles:

Mihail - Tester,

Abiola - Note taker

Summary of session:

The primary objective of this exploratory session is to investigate interoperability and confirm correct application logic.

In our initial testing phase, we began by evaluating the basic endpoints, such as the creation of "todo" items and then focused on creating relationships, such as creating a category - todo relationship. Instead of confirming that the status code returned is correct, we

made sure to verify that the current data inside the application corresponds with our prediction. For example, if a relationship is deleted between category and todo, we expect the API that returns the relationships of the said category to remove the deleted relationship. This approach ensures that the endpoints work together and are able to achieve the correct behaviour.

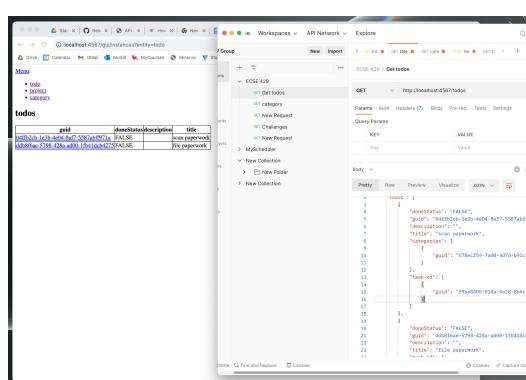
Additionally, an interesting finding (which is an area of improvement for the application) is the handling of relationships as distinct from the status of associated elements. For example, if a relationship between a category and todo exists, and either the category or todo is deleted, the relationship still persists. This is an issue because on a larger scale, there will be some discrepancy in terms of the state of relationships (some will represent a real relationship and some will not). As a result, it is critical to ensure that relationships are also deleted whenever an entity that is participating in that relationship is deleted.

List of concerns identified in session

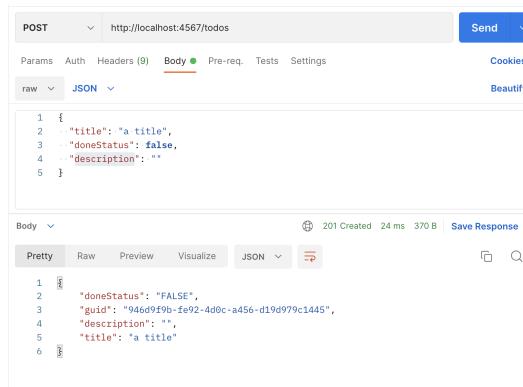
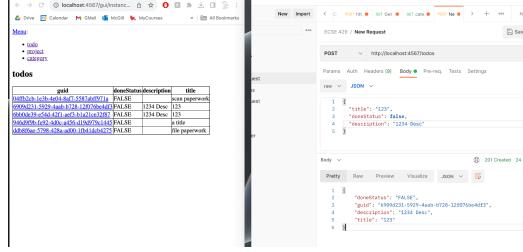
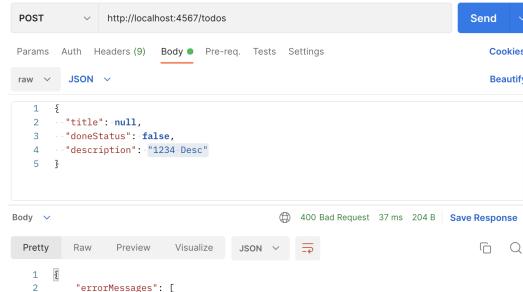
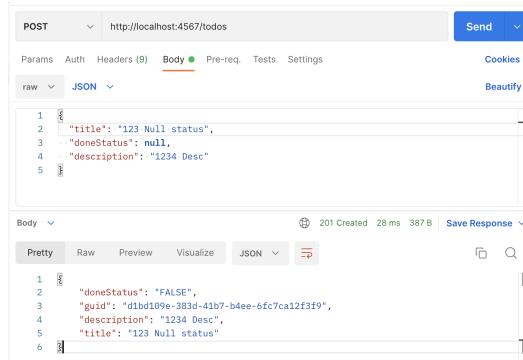
After verifying that the application is able to handle complex relationship handling, we found no areas of concern.

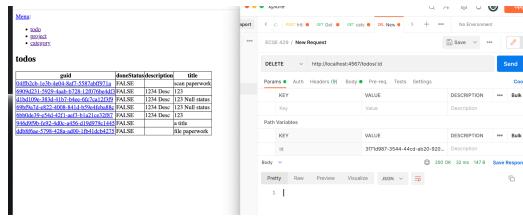
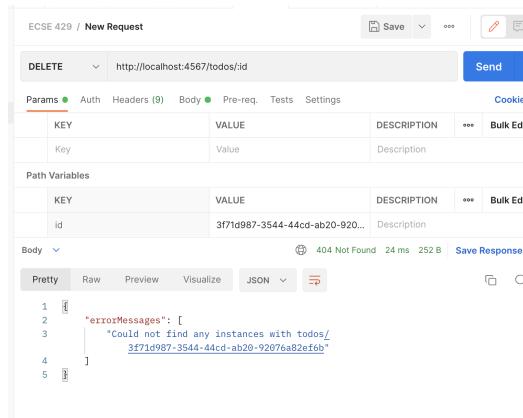
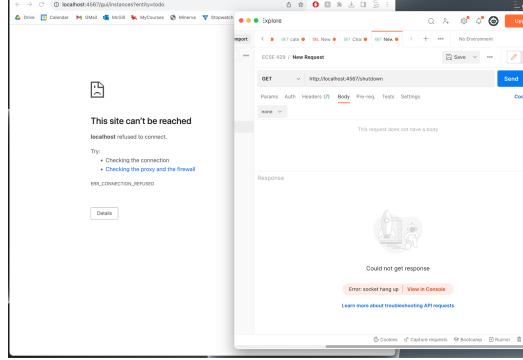
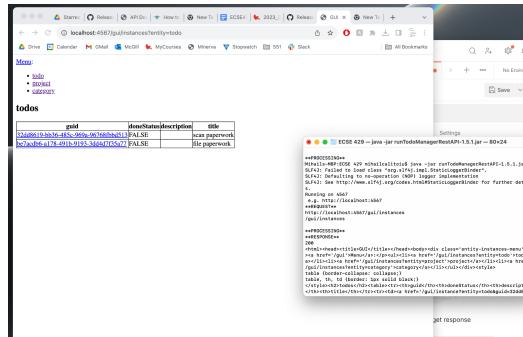
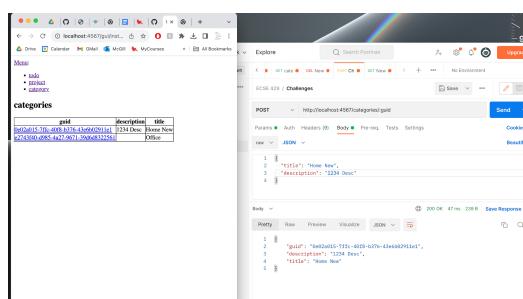
List of new testing ideas identified in session

Although all API calls ran as expected, one testing idea that could be attempted is checking for the limits of application e.g., if there is a maximum amount of entities that the application can handle before encountering issues, or making multiple calls in a short time span. The project entity is another aspect of the API that could have been explored more in another session, as well as its relationships with todos and categories (especially given the finding of persistent relationships despite deletion of an object). Finally, more investigation into potential hidden API endpoints not documented could be a future idea; this could be done by monitoring network traffic following various calls.

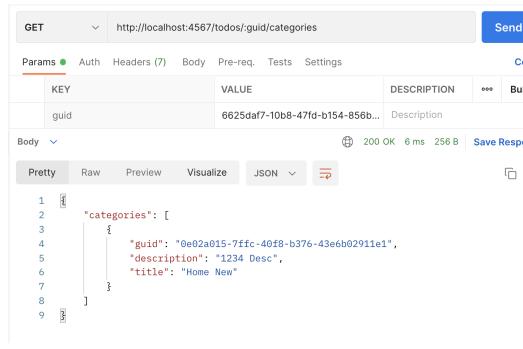
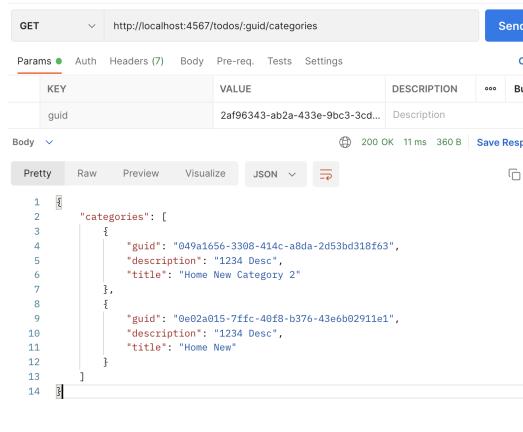
| Time | Tester | Request | Type | Comment | Screenshot |
|------|--------|---|------|---|---|
| 9:25 | Mihail | http://localhost:4567/todos | GET | Verify if GUI and Postman results match |  |

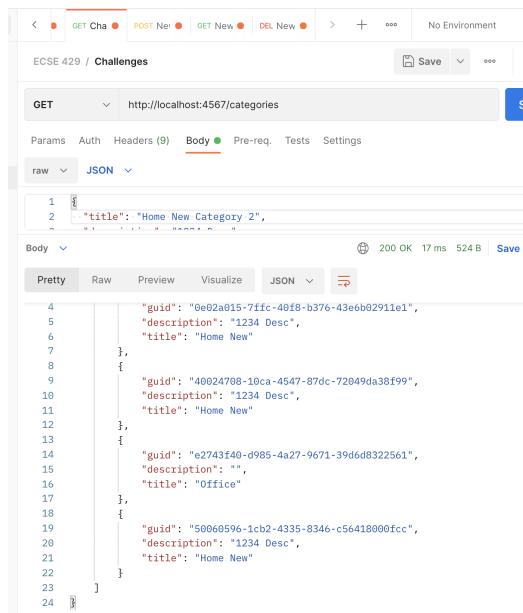
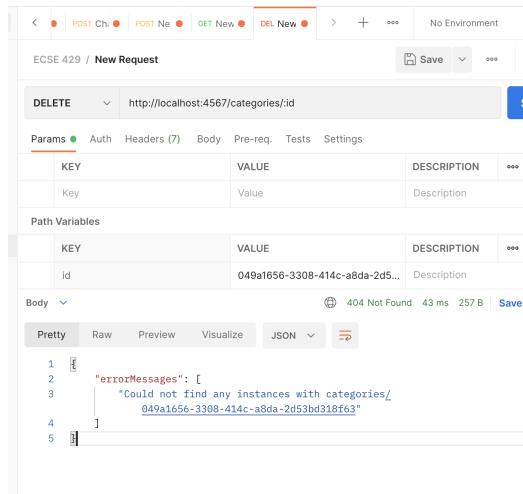
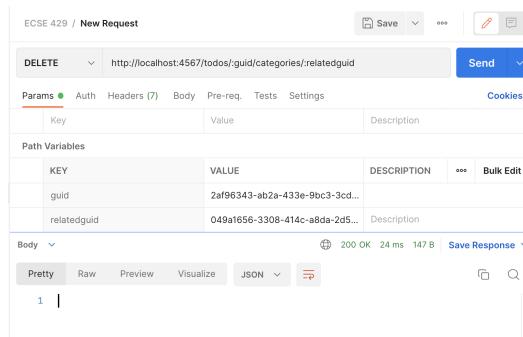
| | | | | |
|------|---|------|---|--|
| 9:27 | http://localhost:4567/categories | GET | Verify if GUI and Postman results match | |
| 9:28 | http://localhost:4567/projects | GET | Verify if GUI and Postman results match | |
| 9:29 | http://localhost:4567/todos | POST | Add a todo and check that GUI updates | |
| 9:30 | | POST | Add a todo with an empty title; should give a “title cannot be empty” error | |

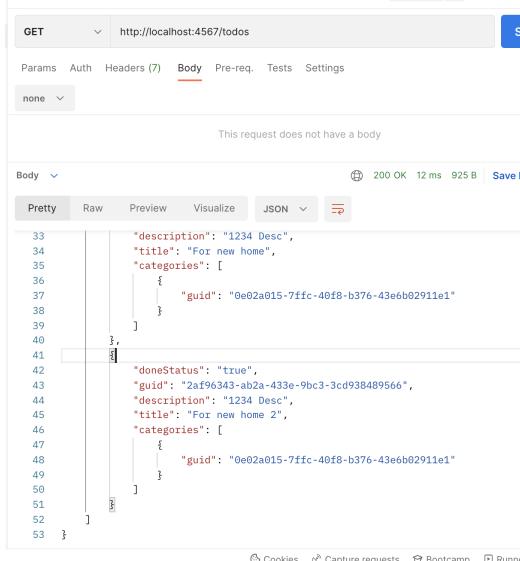
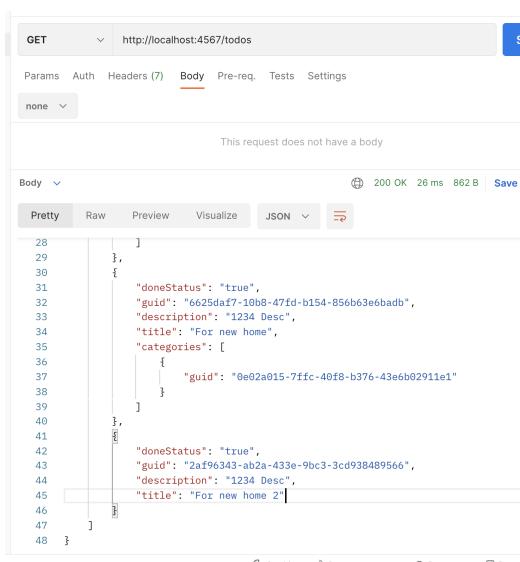
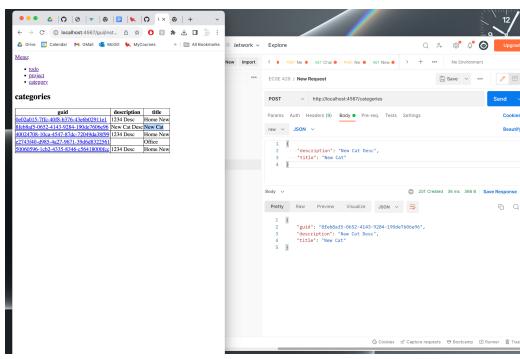
| | | | | | |
|------|--|--|------|---|---|
| 9:31 | | | POST | Add a todo with a title but no description; should give a “title cannot be empty” error |  |
| 9:32 | | | POST | Add a duplicate todo (i.e. same title and description) |  |
| 9:32 | | | POST | Add a todo with a null title |  |
| 9:34 | | | POST | Add a todo with doneStatus not in a String format; defaults to “FALSE” |  |

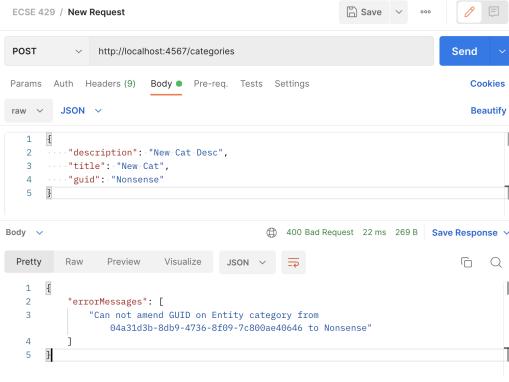
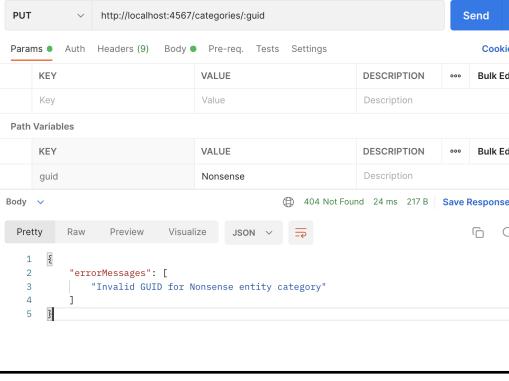
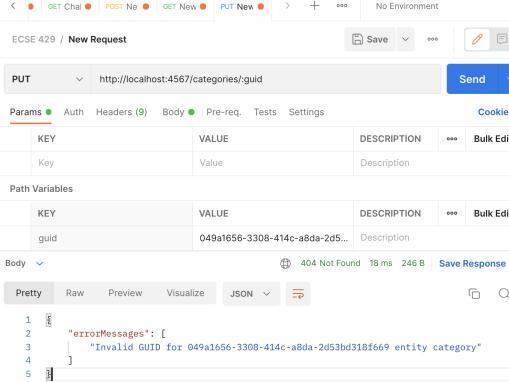
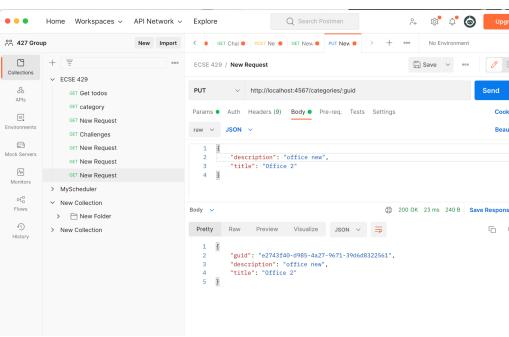
| | | | | | |
|------|--|---|--------|---|---|
| 9:35 | | http://localhost:4567/todos/1 | DELETE | Delete a todo |  |
| 9:36 | | | DELETE | Delete an already deleted todo |  |
| 9:38 | | http://localhost:4567/shutdown | GET | Shutdown the API instance |  |
| 9:39 | | http://localhost:4567/todos | GET | Verify if the previously created todos were cleared |  |
| 9:40 | | http://localhost:4567/categories/:guid | POST | Create a category with guid, description and title |  |

| | | | | | |
|------|--|---|------|--|---|
| 9:44 | | http://localhost:4567/todos/:guid/categories | POST | Create a relationship between a todo and category | <pre>{ "doneStatus": "true", "guid": "6625daf7-10b8-47fd-b154-856b63e6badb", "description": "1234 Desc", "title": "For new home", "categories": [{ "guid": "0e02a015-7ffc-40f8-b376-43e6b02911e1" }] }</pre> |
| 9:46 | | | POST | Create another relationship between a new todo and the previously created category | <pre>{ "doneStatus": "true", "guid": "6625daf7-10b8-47fd-b154-856b63e6badb", "description": "1234 Desc", "title": "For new home", "categories": [{ "guid": "0e02a015-7ffc-40f8-b376-43e6b02911e1" }], "doneStatus": "true", "guid": "2af96343-ab2a-433e-9bc3-3cd938489566", "description": "1234 Desc", "title": "For new home 2", "categories": [{ "guid": "0e02a015-7ffc-40f8-b376-43e6b02911e1" }] }</pre> |

| | | | | |
|------|--|-----|---|--|
| 9:50 | | GET | Get all category GUIDs related to a todo (currently only 1) |  |
| 9:51 | | GET | Same as previous request except with an additional category |  |

| | | | | | |
|------|--|---|--------|---|---|
| 9:54 | | http://localhost:4567/categories/:id | DELETE | <p>Delete a category successfully</p> <p>Delete same category -> error message</p> |  <pre> 1 [2 { 3 "guid": "0e02a015-7ffc-40f8-b376-43e6b02911e1", 4 "description": "1234 Desc", 5 "title": "Home New" 6 }, 7 { 8 "guid": "40024708-10ca-4547-87dc-72049da38f99", 9 "description": "1234 Desc", 10 "title": "Home New" 11 }, 12 { 13 "guid": "e2743f40-d985-4a27-9671-39d6d8322561", 14 "description": "", 15 "title": "Office" 16 }, 17 { 18 "guid": "50060596-1cb2-4335-8346-c56418000fcc", 19 "description": "1234 Desc", 20 "title": "Home New" 21 } 22] 23 24 </pre>  <pre> 1 { 2 "errorMessages": [3 "Could not find any instances with categories/_049a1656-3308-414c-a8da-2d5bd318f63" 4] 5 </pre> |
| 9:56 | | http://localhost:4567/todos/:guid/categories/:relatedguid | DELETE | <p>Remove the relationship between deleted category and todo</p> |  <pre> 1 </pre> |

| | | | | |  <pre> 33 "description": "1234 Desc", 34 "title": "For new home", 35 "categories": [36 { 37 "guid": "0e02a015-7ffc-40f8-b376-43e6b02911e1" 38 } 39], 40 [41 { 42 "doneStatus": "true", 43 "guid": "2af96343-ab2a-433e-9bc3-3cd938489566", 44 "description": "1234 Desc", 45 "title": "For new home 2", 46 "categories": [47 { 48 "guid": "0e02a015-7ffc-40f8-b376-43e6b02911e1" 49 } 50] 51 } 52], 53] </pre> | | | | | | | | | | | | | | |
|---------------------------------------|----------------------------------|----------|--|--|---|-------------|-------|--------------------------------------|--------------|---------|--------------------------------------|-----------|----------|---------------------------------------|-----------|----------|--------------------------------------|--------------|---------|
| 9:59 | http://localhost:4567/todos | GET | <p>Remove the second relationship between deleted category and todo</p> <p>note: for todo ending with 66, no more categories -> correct</p> |  <pre> 28], 29 }, 30 { 31 "doneStatus": "true", 32 "guid": "6625d5df7-10b8-47ed-b154-856b63e6badb", 33 "description": "1234 Desc", 34 "title": "For new home", 35 "categories": [36 { 37 "guid": "0e02a015-7ffc-40f8-b376-43e6b02911e1" 38 } 39], 40 [41 { 42 "doneStatus": "true", 43 "guid": "2af96343-ab2a-433e-9bc3-3cd938489566", 44 "description": "1234 Desc", 45 "title": "For new home 2" 46 } 47], 48] </pre> | | | | | | | | | | | | | | | |
| 10:02 | http://localhost:4567/categories | POST | Create a new category without input GUID |  <table border="1"> <thead> <tr> <th>guid</th> <th>description</th> <th>title</th> </tr> </thead> <tbody> <tr> <td>0e02a015-7ffc-40f8-b376-43e6b02911e1</td> <td>New Cat Desc</td> <td>New Cat</td> </tr> <tr> <td>2af96343-ab2a-433e-9bc3-3cd938489566</td> <td>1234 Desc</td> <td>Home New</td> </tr> <tr> <td>6625d5df7-10b8-47ed-b154-856b63e6badb</td> <td>1234 Desc</td> <td>Home New</td> </tr> <tr> <td>0e02a015-7ffc-40f8-b376-43e6b02911e1</td> <td>New Cat Desc</td> <td>New Cat</td> </tr> </tbody> </table> <pre> POST /categories { "description": "New Cat Desc", "title": "New Cat" } </pre> <pre> { "guid": "0e02a015-7ffc-40f8-b376-43e6b02911e1", "description": "New Cat Desc", "title": "New Cat" } </pre> | guid | description | title | 0e02a015-7ffc-40f8-b376-43e6b02911e1 | New Cat Desc | New Cat | 2af96343-ab2a-433e-9bc3-3cd938489566 | 1234 Desc | Home New | 6625d5df7-10b8-47ed-b154-856b63e6badb | 1234 Desc | Home New | 0e02a015-7ffc-40f8-b376-43e6b02911e1 | New Cat Desc | New Cat |
| guid | description | title | | | | | | | | | | | | | | | | | |
| 0e02a015-7ffc-40f8-b376-43e6b02911e1 | New Cat Desc | New Cat | | | | | | | | | | | | | | | | | |
| 2af96343-ab2a-433e-9bc3-3cd938489566 | 1234 Desc | Home New | | | | | | | | | | | | | | | | | |
| 6625d5df7-10b8-47ed-b154-856b63e6badb | 1234 Desc | Home New | | | | | | | | | | | | | | | | | |
| 0e02a015-7ffc-40f8-b376-43e6b02911e1 | New Cat Desc | New Cat | | | | | | | | | | | | | | | | | |

| | | | | | |
|-------|--|--|------|---|---|
| 10:04 | | | POST | Create a new category with a non-valid GUID (using the wrong API call) |  |
| 10:06 | | http://localhost:4567/categories/:guid | PUT | Put request to change description and title |  |
| 10:09 | | | PUT | Put request for non-existent category, should be created; was not created |  |
| 10:10 | | | PUT | Updated description of category with existing id |  |

raw JSON Body

200 OK 14 ms 631 B Save Response

Pretty Raw Preview Visualize JSON

```
1 "title": "Home New Category 2",
2 "description": "1232A Desc"
3
4
5
6
7
8
9 "guid": "0feba8af5-0652-4143-9284-190de7606e96",
10 "description": "New Cat Desc",
11 "title": "New Cat"
12 },
13 {
14 "guid": "480024700-10ca-4547-87dc-72049da38f99",
15 "description": "1234 Desc",
16 "title": "Home New"
17 },
18 {
19 "guid": "e2743f40-d985-4a27-9671-39d6d8322561",
20 "description": "Office New",
21 "title": "Office 2"
22 },
23 {
24 "guid": "50060596-1cb2-4335-8346-c56418000fcc",
25 "description": "1234 Desc",
26 "title": "Home New"
27 }
28 ]
29 }
```