ECSE 429 – Part A

Exploratory Testing and Unit Testing



**Naomie Lo | naomie.lo@mail.mcgill.ca | 261018690**

**Deniz Emre | deniz.emre@mail.mcgill.ca | 26102993**

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## Deliverables overview

The goal of this charter is:  
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.

The deliverables below cover these four points testing the Thingifier software. In the first part Naomie and Deniz focused on Exploratory testing with postman. Following, we prepared extensive test using pytest to further our understanding of Thingifier’s capabilities.

**Exploratory testing**

1. **Todos**

* Session Notes
* Folder with screenshots

1. **Projects**

* Session Notes
* Folder with screenshots

**Unit Tests**

1. **Todos**

* random\_test.py
* test\_documented.py
* test\_undocumented.py
* test\_unexpected.py
* test\_payloads.py

1. **Projects**

**Other Files**

* Report

## Findings of Exploratory testing

### Todos

In todos…

### Projects

In projects…

## Structure of unit test suite

We decided to split the tests we did with postman into 4 categories: documented, undocumented, payload, and unexpected. In the file, test\_documented.py has the tests for everything in the documentation as well as tests with data a user would likely enter. The later was to test if the documented data work with edge cases we thought of such as trying to delete an instance that does not exist. Within the test\_undocumented.py has the capabilities that are not documented such as PUT, OPTIONS, PATCH, and DELETE. The test\_payload.py focus is checking both the returned code and application logic of JSON and XML formats. The test\_unexpected has ??.

While creating these tests we had to main focuses, to ensure that the initial state of the API is restored at the end of the tests and that there is an ability to run the tests in random order. For the first point, after each test the resource is immediately deleted. Regarding randomization, this was a two part task. First, no module should rely on the ordering. For example, when testing a DELETE API call we need to ensure the instance that we are deleting exists. To avoid dependencies, a resource is created for each module. A helper function, create\_todo() will create a todo instance to perform the test on. The second part of randomization is calling all the modules in random order. A python script, random\_test.py accomplished this. The logic follows importing all the tests and using random.shuffle() while iteratring through them.

The unit tests for project and todos are done separately but follow the same logic. The todos unit tests are located in PART\_A/todos/tests and the projects unit tests are located in PART\_A/projects/tests.

## Source code repository

This testing was documented on GitHub. We chose to use this as it offers the ability for many users to collaborate on a code base. To best organize the project, we have three main folders names “Part A”, “Part B”, “Part C”. The contents of the exploratory test and unit tests live in Part A. With the Exploratory Test folder is the two testing focuses, todos and projects. These folders have the session notes and the respective screenshots from the timed session. A test folder also resides within the todos and projects subfolders. This contains the test files for the respective focus. Please see layout below.

* PART A
* Todos
  + Session\_Notes.txt
  + Screenshots
    - 1.05.png
    - 1.07.png
    - ….
  + Tests
    - random\_test.py
    - test\_documented.py
    - test\_undocumented.py
    - test\_unexpected.py
    - test\_payloads.py
* Projects
  + Session\_Notes.txt
  + Screenshots
    - 1.05.png
    - 1.07.png
    - ….
  + Tests
    - random\_test.py
    - test\_documented.py
    - test\_undocumented.py
    - test\_unexpected.py
    - test\_payloads.py

## Findings of unit test suite

### Todos

In todos…

### Projects

In projects…