



Building Web Applications with Python Flask



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Introduction

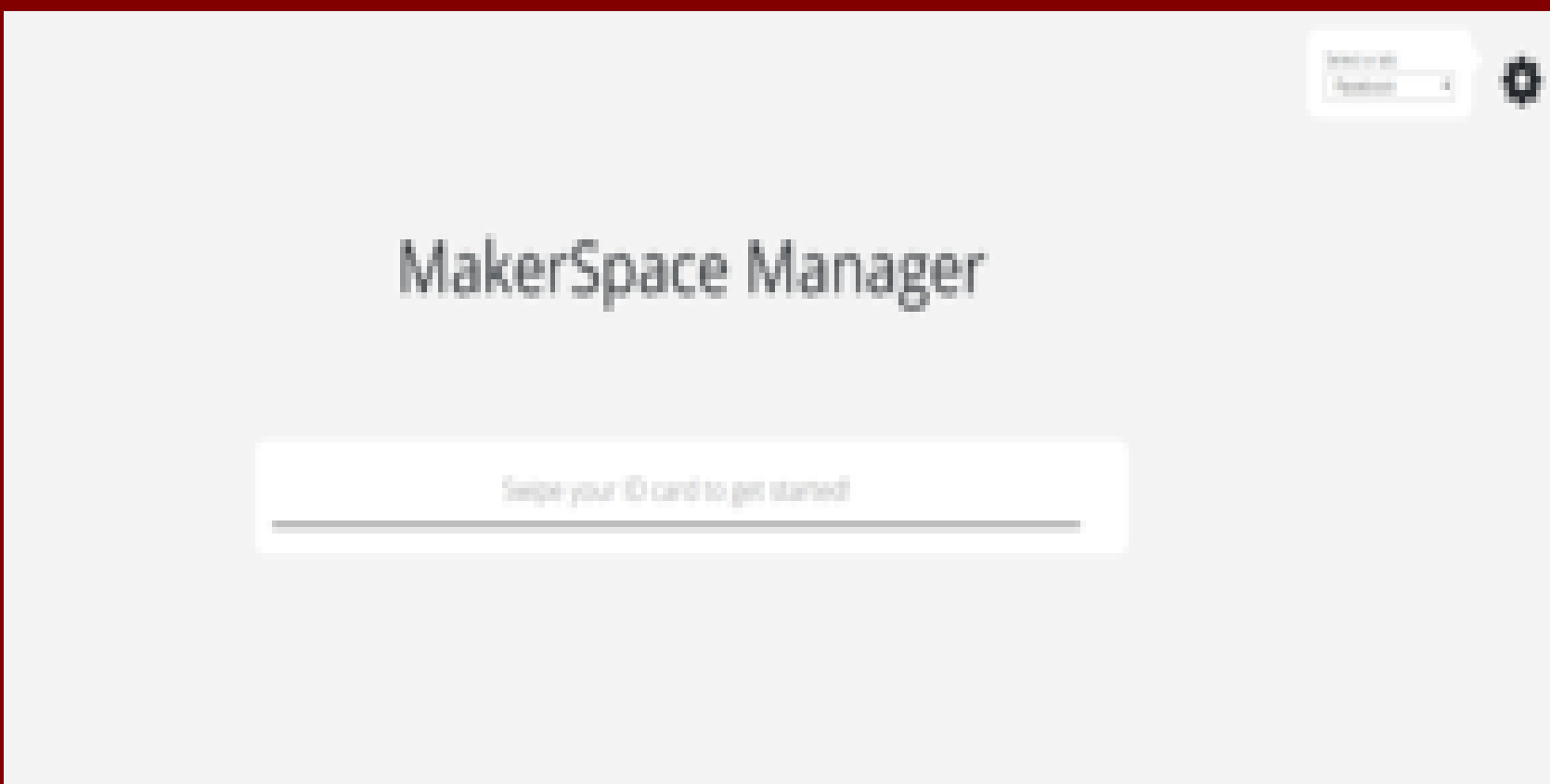
I am a member of the software development team for an organization at UMD called Terrapin Works. Since last summer, I have been working on a project called the Maker Space Management System, which tracks users who swipe into to various labs and makerspaces across campus.

Overview of the MSM Project

- Two main parts – frontend, which was built using the React.js framework and the backend, which was built with python flask
- We used a SQL database hosted in AWS as well as SQL alchemy to wrap the database queries into the python language

Features That I Worked On

- Writing out the backend API by setting up endpoint routes using the restX framework
- Creating the SQL database in AWS and creating the models in SQLAlchemy
- Writing Python methods used to query and filter results from the database
- Using the swipe number of the user to check if they have admin privileges, allowing them access to more features
- Making sure data is properly formatted so that the API can properly communicate with the front end
- Writing test scripts to test behavior of the different endpoint methods



What the log in screen of the MSM system looks like for a user – they swipe their UID and choose which lab/machine they would like to use



An example of the analytics dashboard that the admin of a lab can view

Site Information

Terrapin Works
Software Team
8278 Paint Branch Dr #2123,
College Park, MD 20742
Supervisor: Nathanael Carriere

Discussion

Overall, working on this project has taught me a lot about python and coding in general. This was the first time I used the flask framework in python, and it was the first time that I even created a web application. I learned a lot of new frameworks and technologies, and it has been a great experience.

Future Work

As of now, the first iteration of the system has been deployed and is currently being used by several labs. Moving forward, I will still be working on different feature updates as we get feedback from users and find places for improvement.

Acknowledgments

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