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Divvy Van Assistant - Scenario II

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Introduction

Divvy Van Assistant is a GUI application for Divvy Van drivers which aims to help them to transport divvy bikes and scooters from one station to another while ensuring optimal travel routes. The main idea is to build a system that will keep track of all the divvy stations and the bikes available at each station. Our goal is to increase the efficiency of the entire system without affecting the day to day activities in and around the city. Our application can be used by other companies with certain modifications but the core principle will remain the same.

Scenario 1 Rundown

Features that were successfully implemented during our first sprint :

1. **GUI User Interface:** A basic user interface for the driver has been developed that displays a login page where the user (Divvy delivery driver) can input their credentials provided to them. Additionally, a tasks section has been added which displays certain information about the tasks the delivery driver must perform.
2. **The Database:** A database was created using MongoDb database, that contains all the information on the credentials of divvy delivery drivers that include their official email, username and password, that was assigned to the user. Furthermore, this database also verifies details that have been entered aren't already present in the database therefore it ensures that there isn't duplication of the data.
3. **Datasets:** A comprehensive dataset that contains information about all the available divvy stations within the city of chicago along with the names and addresses of each of the stations along with the number of bikes that can be docked per station, and the shortest distance from a selected hub location to the respective station. For simplification UIC (SCE) was chosen as hub
4. **Tasks ranking:** Task Ranking is basically done considering few parameters.It is going to be the main computational part of our project.We have used the divvy dataset to analyze few aspects of the core business and based on this analysis we came up with a task ranking class which essentially ranks the available jobs/tasks from high priority to low. Task ranking also depends on the radius selected by the Divvy van driver. Through this task ranking mechanism we hope to increase the efficiency by a significant amount.

Key Features for Second Scenario

Some of the features that we plan to implement during the second sprint :

1. **UI/UX improvements**: For the second scenario we plan to make the existing UI/UX more aesthetically pleasing along with adding some key features that would include things like

"Logo", "Login", "Help", "About", "Designed By (Names)", "Acknowledgement", "Contact Us", And "Exit" button and a forgot password button that enables the delivery drivers to reset their assigned password if they might have forgotten their existing one, all of these new features that we plan to add would significantly improve user experience and would make the application more user friendly and encouraging to use.

2. **Real time data update:** This Updation feature is going to be with respect to our Database. Once a specific task is being completed,our application will be able to update the same information on the database which is going to be in real time. Now with respect to this newly updated information from the database, our task ranking class will rank the task again for either the same radius or for a different radius value ranging from 0.5 miles to 1 mile.
3. **Analysis of a couple more datasets:** We are keen on analyzing a couple more datasets just to be more accurate and precise while ranking the tasks.
4. **Map Display:** For the second release we plan on displaying an interactive map that updates during the starting of the tasks as well as the ending of the specific task.
5. **Database Changes:** We are planning to adding certain sections to the application that would would be displayed after the sign in page some of them would display a series of sections like "Tasks In Progress", "Review Station Database", "Review User Database", "Add New User", And "Generate Reports". All of these new sections that we plan on adding will improve the general useability of the application along with better monitoring capabilities, that includes features like time taken to complete tasks, tasks remaining, current status, etc.
6. **Final Integration:** While we had completed the development of all the features we had initially planned to develop for the first release, we lacked the proper integration of these features into a single system, by doing so we had run into problems towards the end of the sprint when we were working on integrating everything together. To prevent this from happening again we plan to integrate all of the new features immediately and also keep a track of all changes made.

Requirements

Divvy Bike data : Public domain access data , Github Desktop, Python3

Conclusion

Features described in the second scenario will be implemented using technologies like python and the various packages associated with it. We will be working on the System Integration and merging all the different code bases into one branch. Also before the second release, we have a testing phase where we test cases to make sure that all the core features