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In this project, we aim to create a program to create routes and delivery schedules for a restaurant with a delivery service. We will create a system that implements java graphics and framing to have a simple and appealing user interface. The program will implement the Google Maps API to create efficient routes. It will then implement the Java Mail API to send data as an email.

This project is supplementary software that restaurants can incorporate to their already installed systems to include delivery services. Sample data is passed in at times that would otherwise be provided by the already existing system. Employee information, such as the courier on shift, names, email addresses and telephone numbers has been generated for the sake of demonstrating the performance of the software. The software can be modified to meet the desire of the client. For example, the algorithm implemented in the code organizes the addresses in order from the address closest to the restaurant, then the next address closest to the previous address mentioned and so on. However, other algorithms could base their organization based off the time it takes to travel to each destination rather than the distance between destinations.

System Requirements

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| --- | --- | --- |
| Identifier | Priority | Description |
| req1 | 3 | The system will calculate the total distance between each destination point and home base – internal |
| req2 | 2 | The system will arrange the addresses based off an algorithm (closest, closest to closest, repeat) |
| req3 | 3 | The system will prompt to place orders in specific loads based on the time elapsed since the beginning of the creation of the load |
| req4 | 2 | The system will create a load to hold orders with specific items |
| req5 | 4 | The system will calculate the estimated time of arrival for each order |
| req6 | 4 | The system will calculate the estimated time for the entirety of the load |
| req7 | 3 | The system will present a simple GUI for creating loads and orders |
| req8 | 1 | The system will utilize Google Maps APIs to create a delivery schedule |
| req9 | 5 | The system will utilize Java Mail API to email a receipt to a courier |
| req10 | 2 | The system will check if the address entered is within range for the delivery service |

A list of terms for reference:

Home Base The restaurant the client will appoint to be the delivery pickup location

Courier: The employee that will deliver orders from home base to the customer

Route: The path the courier will take from home base to the customer

Order: The individual purchase by each customer

Load: All the orders the courier takes at the same time, a package of each individual

order

Item: Food choices that customers can add to their order

USER STORIES

|  |  |  |
| --- | --- | --- |
| Identifier | Points | User Stories |
| ST-1 | 10 | As a user, I can close a load before the automatic timer prompts to close it |
| ST-2 | 8 | As a user, I can use the software to create a delivery schedule |
| ST-3 | 6 | As a courier, I can see the estimated time until completion |
| ST-4 | 6 | As a user, I can choose to allow the automatic timer to close the load or continue filling the load with orders |
| ST-6 | 8 | As a courier, I can see which orders are in my load |
| ST-7 | 9 | As a courier, I will receive the delivery schedule information through an email |

REPOSITORY: https://github.com/collinsr729/csc380part2

UML class diagram: