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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 in order to have a simple and appealing user interface. The program will implement the google maps API to create efficient routes.

System Requirements

|  |  |  |
| --- | --- | --- |
| Identifier | Priority | Description |
| req1 | 3 | The system will calculate the total distance between each destination point and home base |
| req2 | 1 | The system will create the most optimal route for delivery |
| req3 | 4 | The system will designate orders to certain trips based off the time interval the order was placed in |
| req4 | 2 | The system will create a load for the courier (only 3 orders per trip) |
| req5 | 2 | The system will calculate the estimated time of arrival for each order |
| req6 | 1 | The system will calculate the estimated time for the entirety of the load |
| req7 | 4 | The system will estimate the time to cook items to allow for fresh delivery |

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

USER STORIES

|  |  |  |
| --- | --- | --- |
| Identifier | Points | User Stories |
| ST-1 | 10 | As an authorized user (manager or owner), I can manage who can utilize the system |
| ST-2 | 8 | As a courier, I can use the software to create a route of delivery |
| ST-3 | 6 | As a courier, I can see the estimated time until completion |
| ST-4 | 6 | As a courier, I can see the route on a map with each delivery location and home base marked |
| ST-5 | 5 | As an authorized user (manager or owner), I can access the cook times and estimated time of delivery to update them |
| ST-6 | 8 | As a courier, I can see which orders are in my load |
| ST-7 | 9 | As a courier, I will be able to log on using an ID number and password |

REPOSITORY: https://github.com/collinsr729/csc380

SAMPLE CODE

package csc380;

import javax.swing.JOptionPane;

public class Main {

public static void main(String[] args) {

JOptionPane.showMessageDialog(null, "Welcome to the delivery service program.");

String a1 = JOptionPane.showInputDialog(null,"Enter an address:");

Route r = new Route();

r.addPoint(a1);

}

}

package csc380;

public class Route{

public String[] addresses;

public Route() {

addresses = new String[20];

}

public void addPoint(String a1) {

for(int i = 0; i<addresses.length;i++)

if(addresses[i].equals(null)) {

addresses[i] = a1;

break;

}

}

public String calculateRoute() {

// Accesses a map API to get live updates on a route/ or find closest

// address and go in order from the next closest house to that one

return "";

}

}

package csc380;

public class Food {

public void cook(String item) {

//Start a timer when to cook items in order to provide

// fresh food delivery

}

public int cookTime(String item) {

switch(item) {

case "Fries":

return 5;

case "Burger":

return 10;

case "Pizza":

return 15;

case "Steak":

return 20;

default:

return 15;

}

}

}