# Section 1 – Description of Project Idea

With the fast pace of social life, people's demand for convenient and efficient catering services is increasing. We may need to consider using some digital technical means to help restaurants efficiently and conveniently maintain their orders, menus, delivery information and other data, aiming at providing a more convenient and efficient way for restaurant administrators, customers and even delivery personnel, which will greatly reduce the time and cost of manual operation and improve work efficiency.

**Description:**

This project attempts to replicate an ordering system commonly used in food and beverages establishments, within a command line interface using Python’s basic functionality and data structures.

For simplicity, a custom map will be made to simulate an estate to simulate a network of houses and food outlets.

The online fast food Platform is a comprehensive mobile application that allows users to browse the menus of multiple restaurants, select and order the desired food, and then select the delivery address. Administrators and deliverers will be responsible for handling orders and food delivery, enabling the integration of online ordering, payment and fast food delivery.

**Objectives:**

* Develop a simple command-line interface with different use cases for different users as illustrated below:

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| **Entity** | **Role in System** |
| Customer | * Add/Remove items to/from cart * Place orders * Create an account with personal information (e.g., name, address, etc.) * Leave feedback on food places. |
| Restaurant Owner | * Add/Remove items within the menu for their own establishment. * Control the state of items in the menu (e.g., price, availability, etc.) |
| System Admin | * Modify any information within the application (e.g., ban customer / restaurants, provide customers with credit/vouchers, etc.) * Able to view customer complaints. |
| Deliverer | * Update status of delivery * Able to contact customer |

* Attempt to replicate the effect as a relational database to store user-related as well as food-establishment related information.
* To generate a sample shortest-path route given the sample map to serve as a guide for deliverers to deliver to customers.
* Recommend a combination of dishes for your users based on their budget.
* Feedback on meals online and guide merchants on improvements.

# Section 2 – Preliminary Use Cases

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| **S/N** | **Use Case** | **Use Case Description/Business Rules** |
| 1 | Customer Roles | * Customers can browse restaurant menus, place orders and pay. * Able to create an account * Able to check out as guest or as a signed-up user with basic information.   Sample Input (Create a new account):  • Name – Bob  • Gender – Male  • Age – 22  • Phone number – 888XXX88  • Address – Binhai Street, S1010XX |
| 2 | System Admin Roles | * Administrators have the highest level of permissions (able to control all information within the application) * Add/delete restaurants based on restaurant account applications. |
| 3 | Restaurant Admin/Owner Roles | * Modify restaurant basic information, such as name, menu, address, current meal preparation queue, the current food sequence to be delivered, etc.   Sample Output:  • Restaurant Name  • Menu details  • Restaurant Address  • Current meal preparation queue  • Current food sequence to be delivered   * Update and modify menu information for their owner restaurant, accept/reject orders, and assign delivery people, etc.   Sample Input (Add menu information):  • Menu Name – Braised Fish  • Price – $19  • Taste – Spicy  • Recommendation score – 95   * Upload their menus to the platform, * Accept or reject orders before prepare food. |
| 4 | Restaurant Logistics Role | * Updating and changing, depending on the stock of ingredients and the price of ingredients. * The menu category includes the food options (may be we can offer customers Package selection) and prices offered by the restaurant time required for dish preparation.   Sample Input(the stock of ingredients):  • Ingredients Name – Tomato  • Ingredients Inventory – 20(kg) |
| 4 | Delivery Person Roles | * The delivery person will be responsible for delivering the food in the order to the address specified by the user. * Their current location, their transportation speed. They can accept/reject orders, view delivery addresses, the quantity of food items that can be carried at one time. |
| 6 | Order Queue (for each restaurant) | * Administrators and delivery people can operate on orders. * The order class will include details of the order, such as the user, the restaurant, selected food, shipping address, order status, and so on. |
| 8 | Sample Map | * For simplicity, a fictional map, consisting of nodes and vertices will be used to simulate a map. * Containing restaurant, delivery address, and deliverer location. * Calculate the distance between different direct positions, optimize delivery routes.   Sample Input:  • Restaurant Address –Binhai Street, S1010XX  • Delivery Address – Starshine Street, S2020XX  Sample Output:  • The shortest distance between Restaurant and Delivery location |
| 9 | Feedback Collection System | * Users can rate the dining experience, which is used to optimize the restaurant's work * All of the contents always include some sentences or the scores of the variety of dishes   Sample Input:  • Comment – Great experience!  • Score of the cuisine(Braised Fish) – 95  • Score of the cuisine(Roast Beef) – 93  • Score of the cuisine(Vegetable Salad) – 96 |

*(Please add more rows if required)*