Data Structures and algorithms

Semi-Final Examination

WcDonald Order Processing System: Using Qt Creator Application GUI To

To Implement the Operations of stacks and queues.

Members:

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I.   **Chosen Application Theme**

We chose a McDonald themed ordering system that allows the user to enter and add an order and be served to them when there order is finished cooking.

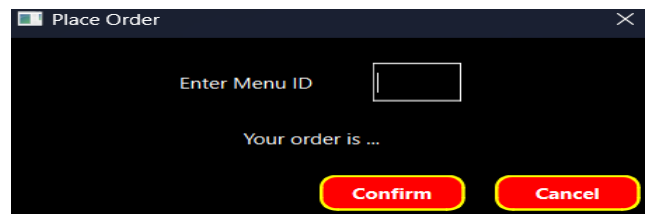# Data Structures and algorithms


II.   Rationale

We Chose the McDonald Themed Ordering System as it is the best way to demonstrate how stacks and queues work in a real-life environment. This kind of Fast-food ordering system is something that people is familiar with and provides the customer a quick and easy way to order their food. In our system, the customer orders are added to a stack that is queued and served in the order they entered, once the order is picked you can't cancel the order (becuz we greedy). This application can help the users to visualize the practical use of data structures in a real-life scenario.

III.   Implemented Application and its features

1. Adding orders:
   - Users can add new orders through this button and enter the item ID.
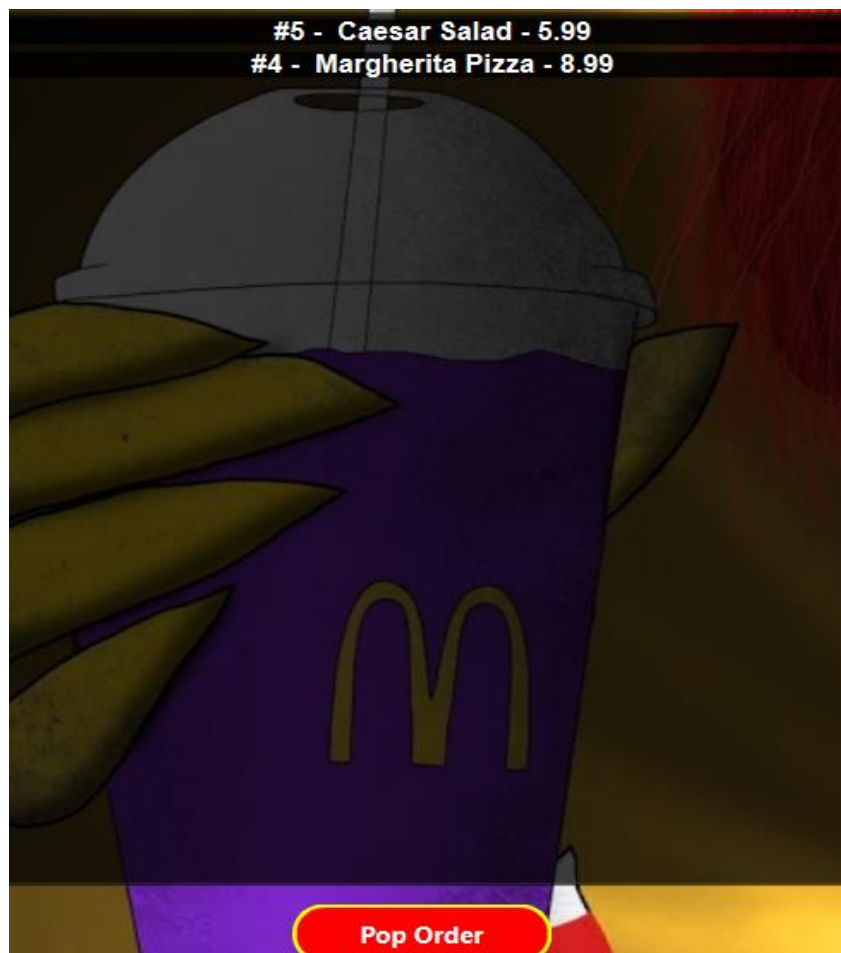   - Our system uses the FIFO principle for serving the orders.
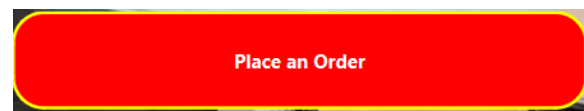
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2. Serving orders (Queue Dequeue Operation):
   - This is where the user can view and serve the orders and the see the last order that has been served

- The first order that the customer chose to get served first.
- u can also clear the completed orders by pressing the pop button.

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IV.   Three cases for the Chosen Application

Test Case 1: Entering an order ID to initiate our programs process

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Test Case 2: by pressing the Serve the next order it allows the user to serve the first Item in the list.

Test Case 3: allows the user to remove the recently served order in the list

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V.   Challenges Faced during the development

1. The Development
- **Stack and queue implementation** – Implementing the logic to manage the order efficiently.
- **Crashes and bugs** – Ensuring the orders are where they are supposed to be and making sure each button works.
- **Debugging** – Some of the widgets are out of place or not correctly shaped that can make the other Gui to look like a mess.

2. Designing
- **Image lay outing** – Lay outing the images, buttons, backgrounds into their correct positions
- **Path file Location** – Struggling to find the correct Path of the image's sources

VI.   Roles and Contributions

Ballesteros, Gabriel – (Head Developer, Co-lead Designer, Documentation)
Gomez, Mike Andrei – (Developer, Lead Designer)
Arriola, Rolf Eluigi – (Developer, Designer, Tester)