

NU Cafe

Food Ordering System

I want an efficient ordering system to accurately record customer orders, calculate total prices for checkout, show product popularity and sales trends....



**NU Cafe Manager
Lucy**

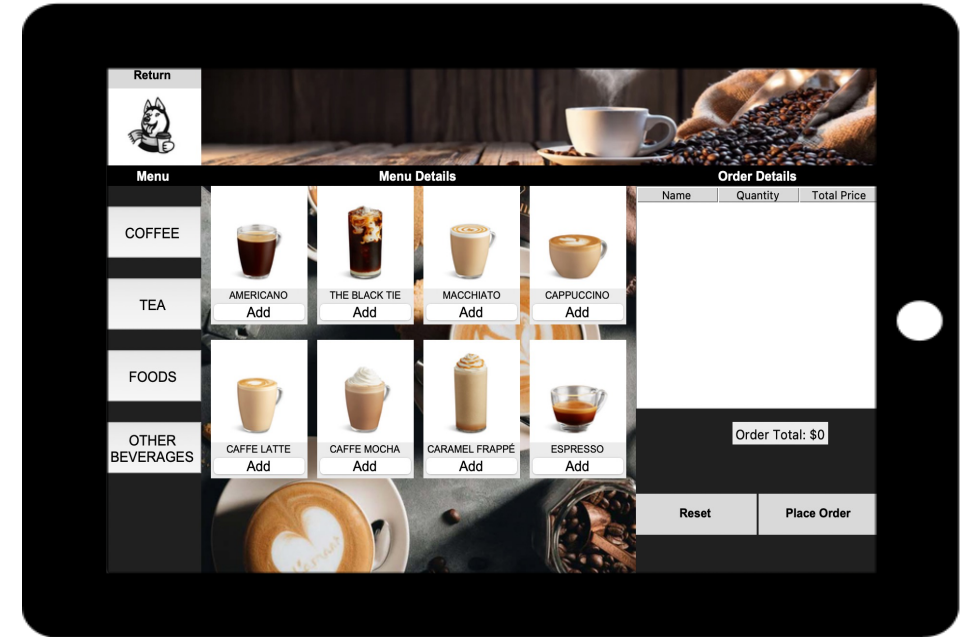
Project Description

An ordering system designed for cafes and restaurants that enables the business to **place orders for customers** and to **manage and analyze sales data**.

Core Features

1. Place orders for customers

- **Menu switch:** switch between different categories
- **Real-time displaying:** display order content and total price in real-time as dishes are added
- **Reset order:** clear all items to reorder
- **Place order:** display pop-up to confirm successful order placement
- **Order data storage:** store order information locally for future analysis



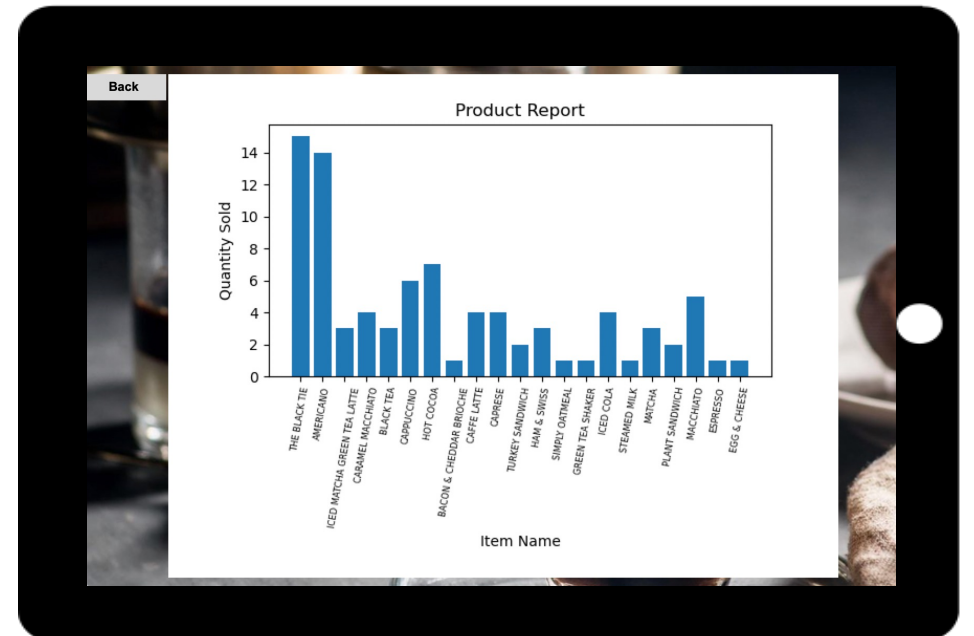
Core Features

2. View Orders

Find order history, including order details and order total to facilitate check-out.

3. Check the business turnover with statistical charts

- **Sales report:** daily orders and sales, historical total sales
- **Order chart:** order quantity change over the past seven days
- **Sales chart:** daily sales over the past seven days
- **Product sales report:** popularity of each product



Tools Applied

GUI: **tkinter**

Image manipulation: **PIL**

Data analysis and manipulation: **pandas**

Data visualization: **Matplotlib**

Date and time: **datetime**



Challenges >> Solutions

Technical problems

- Unable to run PyQt5 in some circumstances
>> switched to tkinter
- Unable to change tkinter widgets background
>> changed interpreter to a suitable version
- Bugs (over 50+, including background pic missing, order button not working)
>> manually debugged, turned to teammates, online searching (e.g., StackOverflow), and ChatGPT

Teamwork challenges

- No experience
>> learned from similar projects online
- First time doing a team project
>> coded together and examined each other's code
- Low efficiency
>> held weekly group meetings
- Difference in personal understanding of final product
>> created product concept design and prototype design to ensure everyone was on the same page

Future Development

- Menu editing function
- Version of ordering system from customer view
- Integration with loyalty programs
- Integration with inventory management
- Enhanced analytics: predictive modeling, clustering, and segmentation

Responsities within group

Name	NUID	Responsibilities
Wenqing Pan	xxxxxxxxx	Team representative, writing functions for placing orders, optimizing business reports, and creating slides and one-page summaries.
Weiwei Zhuo	xxxxxxxxx	designing and optimizing the user interface, implementing functionality module code, and optimizing code structure and syntax.
Rui Lu	xxxxxxxxx	Processing and displaying order forms, analyzing and visualizing order data, optimizing corresponding display content, and optimizing code structure and syntax.