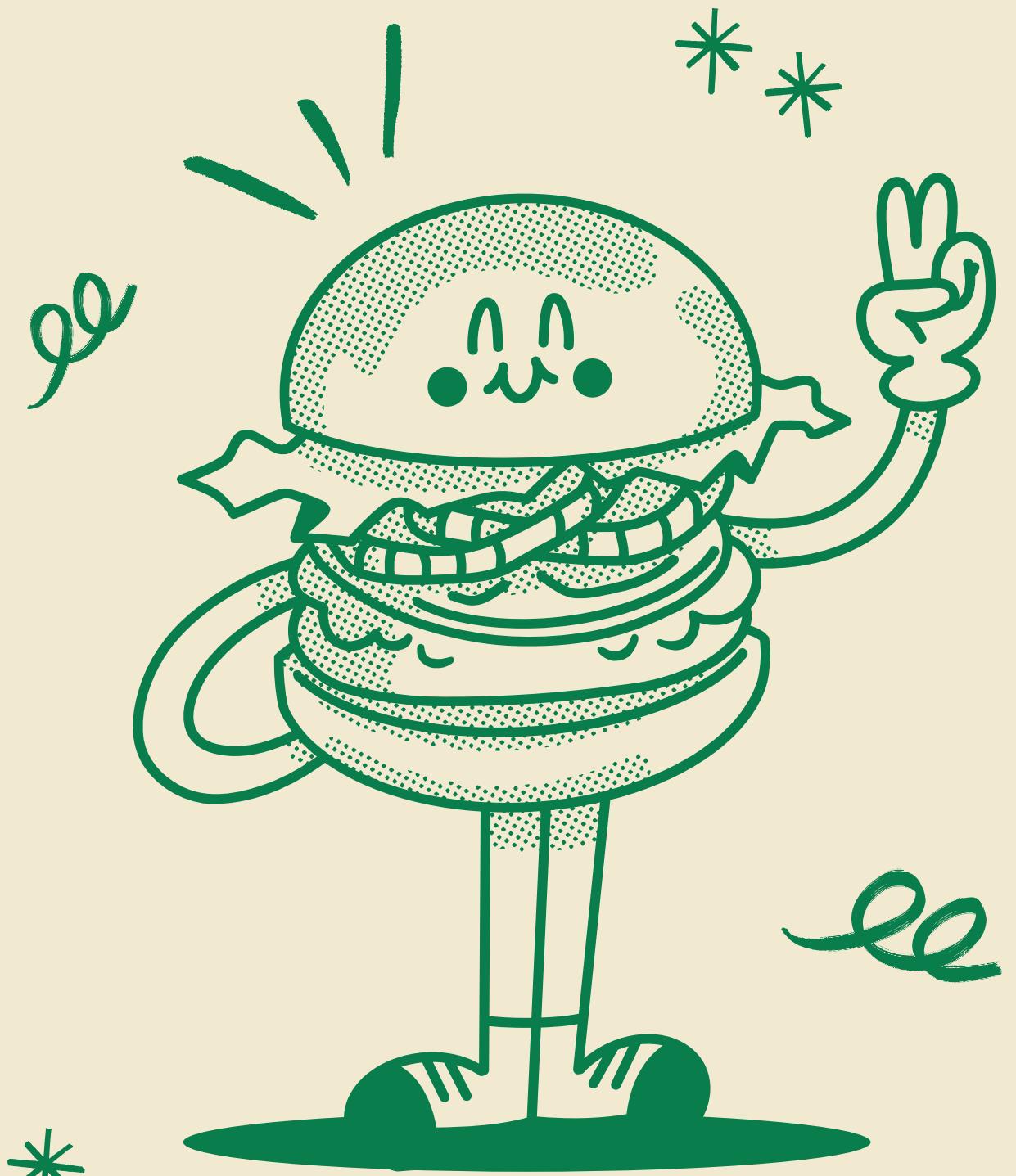
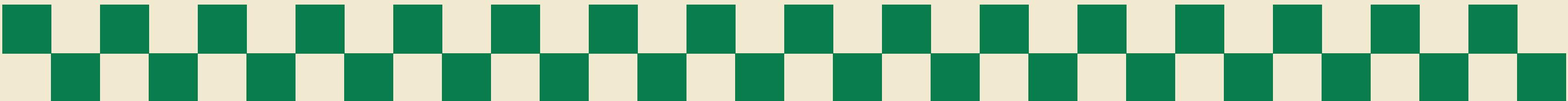


SC2002 Object
Oriented Programming

Fastfood Ordering & Management System (FOMS)

by FDDA Group 1





Introduction to FOMS



1. Main Features

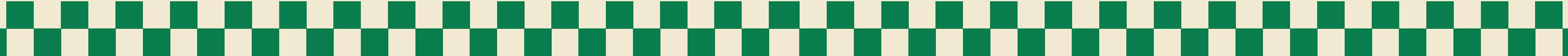
- Order Processing & Management
- Account Management
- Menu Management
- Branch Management
- Staff Management
- Admin Management

2. Security Features

- Passwords are encrypted and stored through hashing, using SHA-256.
- Users are prompted to change default password upon login.
- Password inputs are masked.

3. Data Initialisation & Storage

- Data is first initialised with **csv files** that contains: staff list, menu list and branch list.
- For **Data Persistence**, we created a InMemoryDatabase class, which utilizes hash maps to manage and store instances of different classes.
- **Serialization** is employed to persist the current state to a file upon ending a session. Data is stored in a .ser file.
- Admin will also have the authority to **export current list** into a local **csv file**.





Introduction to FOMS



Welcome to MadDonkeys!

- (1) Browse Menu
- (2) Add to Cart
- (3) Delete from Cart
- (4) View Cart
- (5) Place Order
- (6) Track Order
- (7) Collect Order
- (8) Exit System

Welcome to the STAFF Workspace.

- (1) Display New Orders
- (2) View Order Details
- (3) Process Order
- (4) Change Password
- (5) Log Out

Welcome to the BRANCH MANAGER Workspace.

- (1) Display New Orders
- (2) View Order Details
- (3) Process Order
- (4) Display Staff List
- (5) View Branch Menu
- (6) Add Menu Item
- (7) Edit Menu Item
- (8) Remove Menu Item
- (9) Log Out

Welcome to the ADMIN Workspace.

- (1) Add Staff
- (2) Remove Staff
- (3) Edit Staff
- (4) Display Staff List
- (5) Assign (i.e. Add) Manager
- (6) Promote Staff to Manager
- (7) Transfer Staff/Manager
- (8) Edit Payment Method
- (9) Open Branch
- (10) Close Branch
- (11) Export Staff List
- (12) Log Out

Abstraction

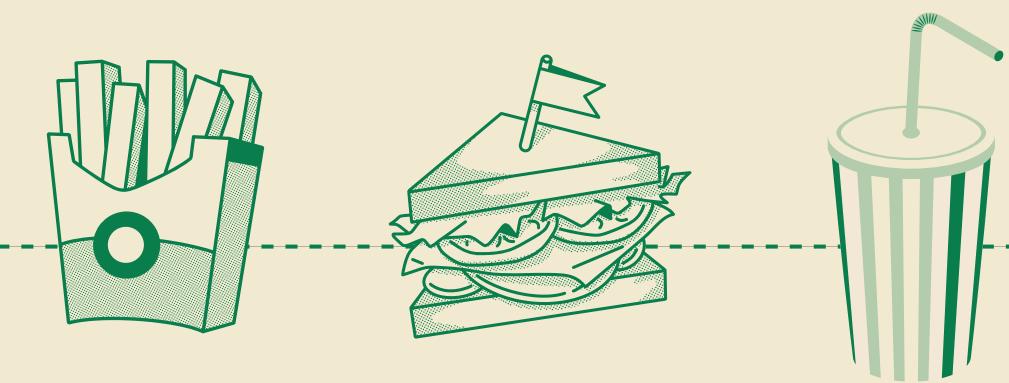
In this project, abstraction is realized through the use of interfaces to define what operations can be performed, without specifying how these operations are internally carried out.



OOP Concepts

Polymorphism

This is done with different types of employees (i.e. Staff, Branch Manager, Admin) that can be managed through common interface or superclass method calls.



Encapsulation

In this project, classes are declared with private attributes and public getters and setters, to ensure that the state of these objects can only be changed in controlled ways.

Inheritance

In this project, a common parent class like Employee can pass on its attributes and methods to child classes like Staff, BranchManager, and Admin.

Design Principles

Single Responsibility Principle

In our project, Account class only handles attributes and behaviours related to user's account, adhering to SRP.

Open-Closed Principle

In our project, Payment system is designed for extension because new payment methods can be added. We defined a common interface ('Payment') such that any new payment method must adhere to.

Liskov Substitution Principle

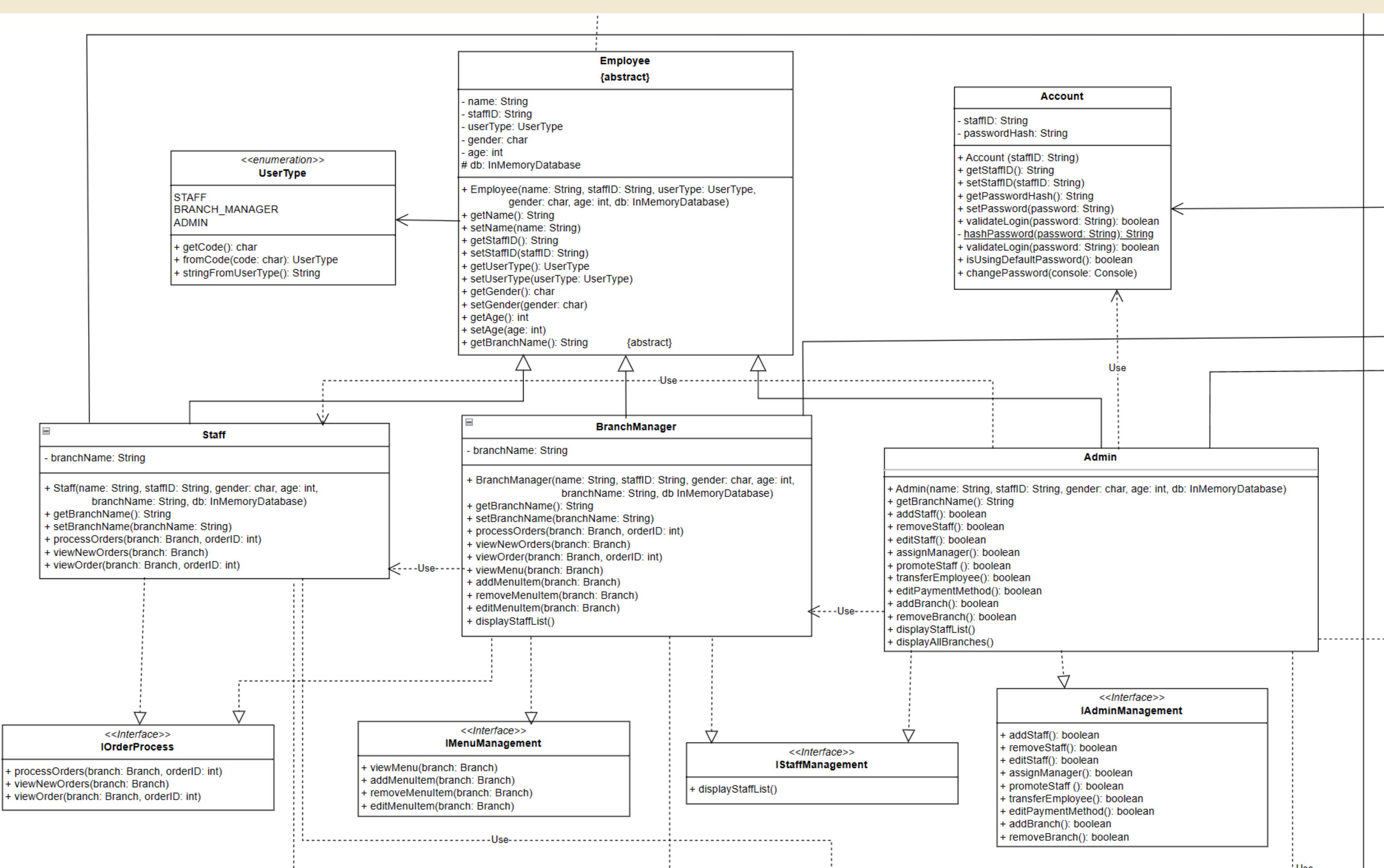
Anywhere an Employee is expected, a Staff, BranchManager, or Admin can be used without issue, which means they adhere to LSP.

Interface Segregation Principle

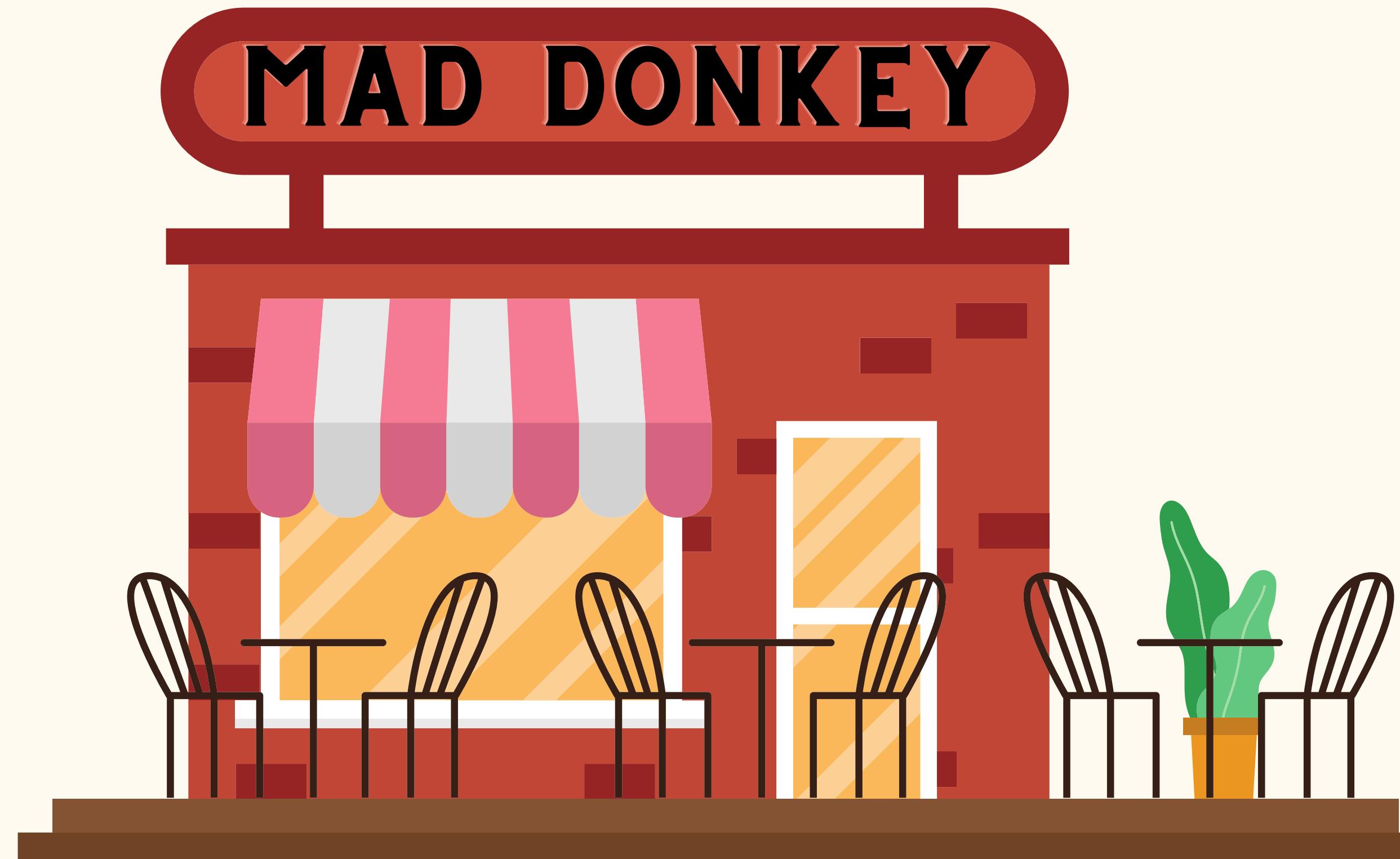
Interfaces like IAdminManagement and IStaffManagement provides specific methods for different user types,

Dependency Inversion Principle

In our project, we have abstractions and interfaces that allows both high-level and low-level modules to depend on.



Customer



Customer's Journey

- 1. Select JP branch, browse branch-specific Menu.**
- 2. Adding to Cart.**
 - a. Select chicken burger with extra sauce. (item 4)
 - b. Select chicken burger with no customisation. (item 4)
 - c. Select cheeseburger with no customisation. (item 6)
- 3. Viewing Cart.**
 - a. Ensure that there are the correct 3 items in the cart.
- 4. Deleting Cart Item.**
 - a. Delete chicken burger with no customisations from cart.
 - b. Ensure that item has been deleted by viewing cart again.
- 5. Placing Order.**
 - a. Select Dine-In
 - b. Select Payment Method to be Bank Card.
- 6. Tracking Order.**
 - a. Ensure that order is created, and status is NEW.
- 7. Check receipt for order No.**

RECEIPT
.....
order no.
9791
dine-in

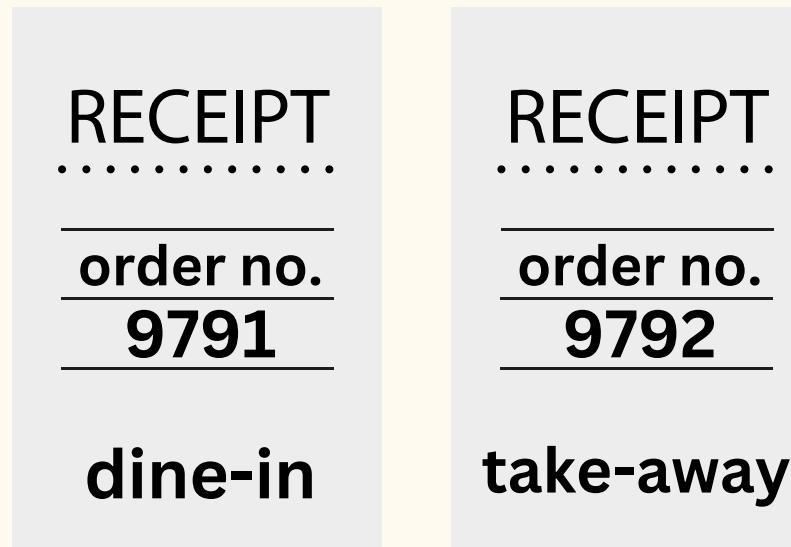


Customer's Journey

1. Placing another order.

- a. Attempt to place order with empty cart.
- b. Place order, with apple pie and ice lemon tea. (item 9 & 11)
- c. Select for takeaway.
- d. Payment will be done using PayPal.

2. Check receipt for order No.



3. Log Out

- a. Serialization occurs and database stored into .ser file



Staff



1. Starting the Day

- a. Successful login into the system as Justin Loh, a staff of JP branch. (**staffID: JustinL, default password: password**)
- b. Prompted to change default password and ensure that system does not allow for reuse of password.
- c. Ensure that new password entries must match.
(New password: Justin49)

1. View New Orders.

2. Order Processing

- a. Order status changes from **NEW** to **PROCESSED** for **Order 9792**.

3. View Current Orders.

- a. Ensure that status has been changed to processed.
- b. Ensure that orders do not appear in 'New Orders'.

4. Update Pick-Up Status

- a. Update the **Order 9791** to pick-up, and wait 15 secs.
- b. Update **Order 9792** to pick-up.

5. Log Out

- a. Serialization occurs and database stored into .ser file.

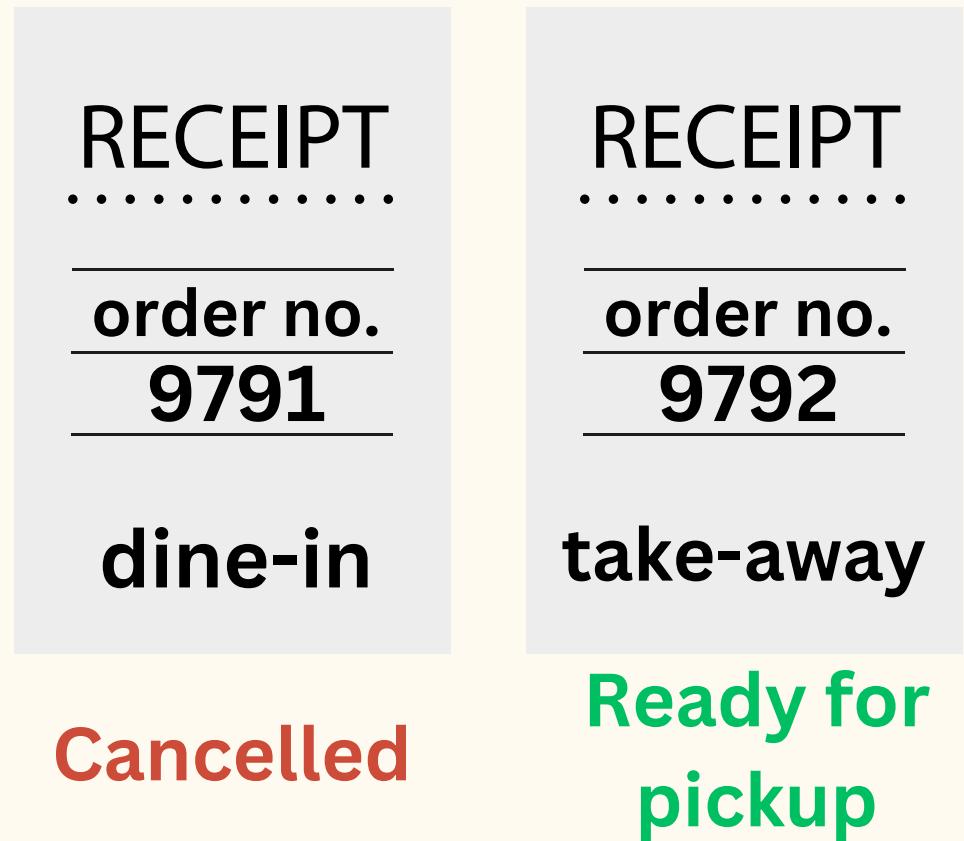
Customer's Journey

1. Tracking Order Status.

- a. Note that Order 9791 has passed pick-up time and has been updated to cancelled.
- b. The Order 9792 is ready for pickup.

2. Collect Order.

- a. Collect the second order (Order 9792).
- b. Ensure that order status changes to 'COMPLETED'.



Branch Manager

1. Starting the Day

a. Successfully logging into the system as JP Branch Manager

Name: ‘Steven Lim’, Staff Login: ‘SteKK’

2. Managing Staff

a. Log into the system to view the list of staff members working at my Branch. This is to ensure that all Staff members are accounted for.

3. Menu Management

a. Received feedback that “Coffee” is no longer popular and decided to remove from Menu. Verify that it is not in Menu after removal.

b. Add Menu Item: “Hash Brown” under Category: “Sides” with Price: “\$2.00”.

c. There is a promotion for “Cheeseburger” today, with the price discounted to “\$3.00”.

d. Add duplicate Menu Item: “Hash Brown”.



Admin

1. Staff Management



- **Add Staff:** JE branch just recruited a new **staff** member. (**Name:** “Newman Chew”, **StaffID:** “NewChew”, **Gender:** ‘M’ & **Age:** 24).
- **Remove Staff:** Staff member “**Newman Chew (NewChew)**” has tendered his resignation from **JE branch** after 1 day. Remove them.
- **Edit Staff:** Staff “**Tay Foo Wei (tayFW)**” has accidentally keyed in the wrong age, and is **22** instead.
- **Display Staff List:** You wish to know how many staff you have. Display the whole list and filter by Branch, Role, Gender, Age.
- **Transfer Staff/Manager:** Staff “**Johnson (Jhn2)**” wishes to transfer from JP to **NTU** as he is studying there.

Admin



2. Manager Management

- **Add Manager:** JP branch just hired a new **Manager**.
 - Their information is **Name**: “Pratham Ranjan”, **StaffID**: “PRanjan”, **Gender**: “F” & **Age**: “32”.
 - Ensure that the manager is added and adheres to quota constraints.
- **Promote Staff:** “Justin Loh (JustinL)” from **NTU** branch was Employee of the Month. Promote to them **Manager** and verify in the staff list.

Admin

3. Company Systems Management



- **Edit Payment Method:** “PayPal” has crashed again. Disable the payment method.
- **Open New Branch:** Open a new branch in new location “**Jurong Lake**” & the branch name is “**JL**”.
- **Close Branch:** The NTU branch is losing money, close the **NTU** branch.
 - Verify that all NTU staff are removed from staff list.
- **Export Staff List:** The company is undergoing an audit by Ministry Of Manpower and they require a list of personnel. **Export** the most updated staff list into a csv.

Customer's Journey

1. Entering FOMS

- NTU is no longer a branch for selection
- JL is a new branch for selection

Jurong Lake



NTU

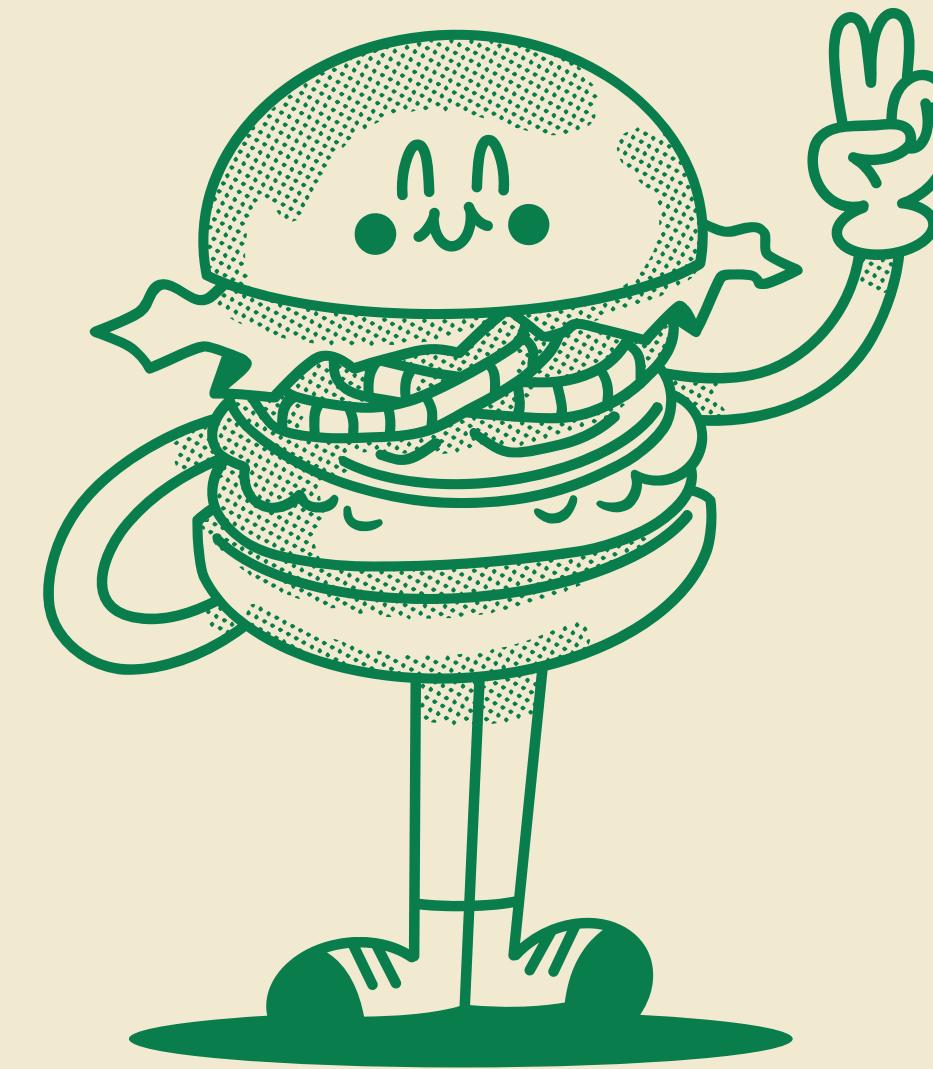


2. Payment

- PayPal is no longer a payment method option available.



Thank you!



Mad Donkeys

FDAA Grp 1

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02