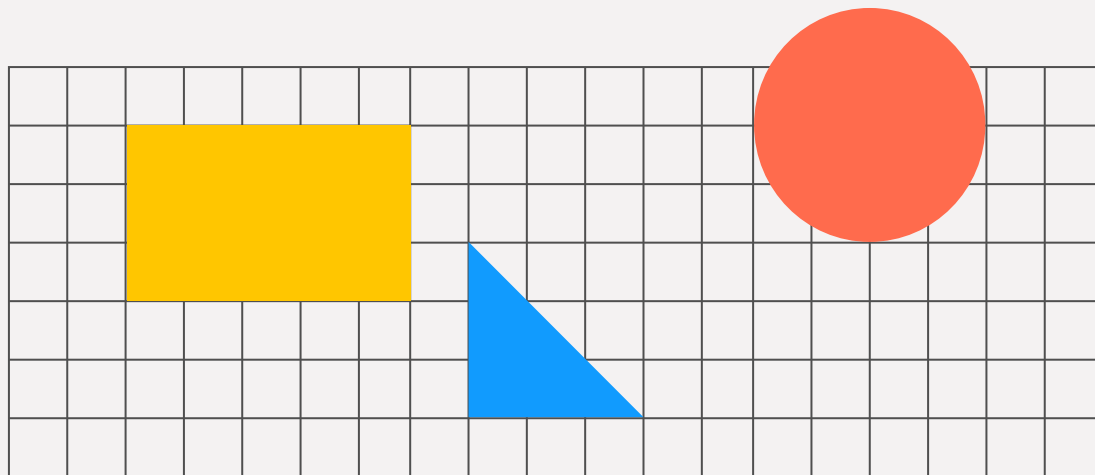


SC2002 PROJECT

Group 6

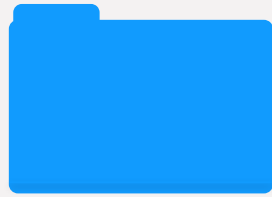
Members:

1. GAY MING KAI
2. LIANG QIAOYUN
3. ADITI VASUDEVAN
4. LEE HAN HUA

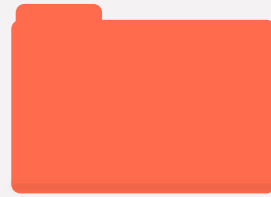




Design
Principles



Additional
Features

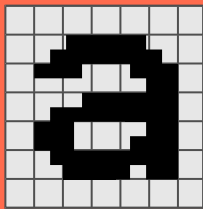


Base Code
Run-Through



Reflection

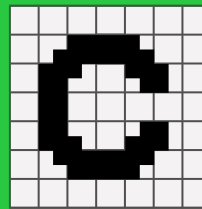
Design Patterns



BCE Framework

Decoupling of classes into

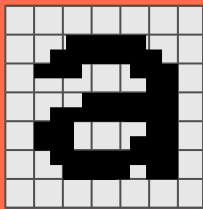
- Boundary
- Entity
- Controller



Factory Pattern

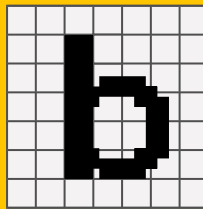
Encapsulate User creation by
processing different user types
without explicit knowledge

SOLID Principles



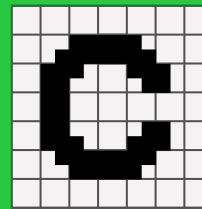
Single Responsibility Principle

Assigned single responsibility to classes of BCE Framework



Open/Closed Principle

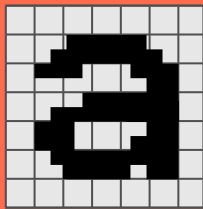
Our code allows for adding of new features in slide 6 without interfering with existing code



Liskov Substitution Principle

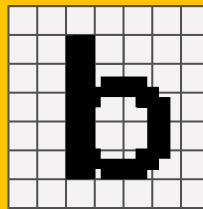
Staff can be substitutable by all its subclasses 'Doctor', 'Pharmacist' and 'Administrator'

SOLID Principles Cont.



Interface Segregation Principle

Implemented interfaces for UserUI and AppointmentUI



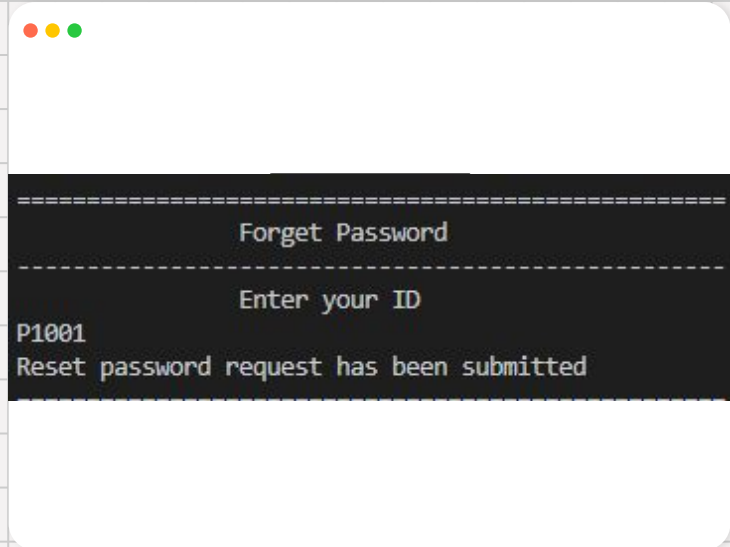
Dependency Injection Principle

depend on the <UserUI> interface instead of individual concrete classes of 'PatientUI', 'DoctorUI'

Additional Features

Forget Password

A reset password request can be made anytime if Users forget their password, an Admin can then approve the request.



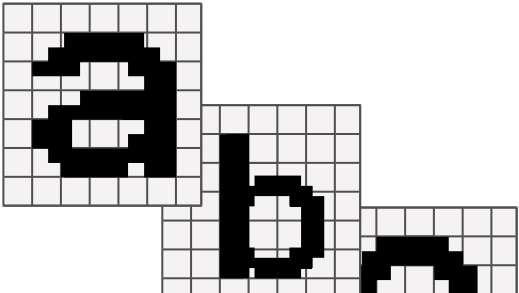
A terminal window with a white background and a black title bar. The title bar has three colored window control buttons (red, yellow, green) on the left. The terminal content is displayed on a black background with white text. It shows a command prompt followed by the command 'Forget Password', a separator line of dashes, a prompt 'Enter your ID', the input 'P1001', and the output 'Reset password request has been submitted'.

```
=====
Forget Password
=====
Enter your ID
P1001
Reset password request has been submitted
=====
```

Additional Features

Password Hashing

SHA3-256 : Password Hashing encrypted with SHA3-256 algorithm to enhance security



```
P1001|Alice Brown|1980-05-14|Female|A+|alice.brown@example.com|5e884898da28047151d0e56f8dc6292773603d0d6aabbdd62a11ef721d1542d8
P1002|Bob Stone|1975-11-22|Male|B+|bob.stone@example.com|5e884898da28047151d0e56f8dc6292773603d0d6aabbdd62a11ef721d1542d8
P1003|Charlie White|1990-07-08|Male|O-|charlie.white@example.com|5e884898da28047151d0e56f8dc6292773603d0d6aabbdd62a11ef721d1542d8
P1004|Antonio|2000-05-06|Male|O|antonio@gmail.com|5e884898da28047151d0e56f8dc6292773603d0d6aabbdd62a11ef721d1542d8
```

Additional Features

Billing

When an appointment is completed, the patient is billed based on appointment and medicine.

```
=====
Bill ID: 2
Appointment ID: 1656734240
Amount: 145
Status: Unpaid
=====
```

```
Do you want to pay the bill (Y/N)?
```


Additional Features

Register New Patient

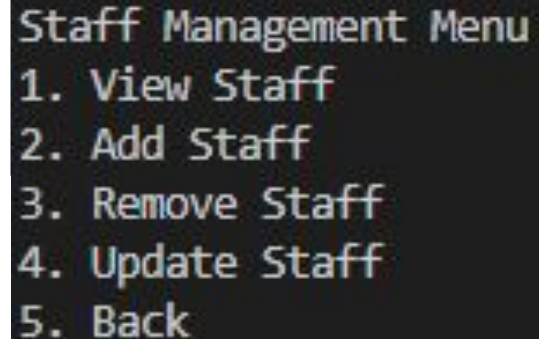
Users can self register at the Hospital Start Page



Additional Features

Backtracking

Allows users to return back to the menu at any point in time

A screenshot of a terminal window displaying a menu. The title is "Staff Management Menu" in a light green monospace font. Below it is a numbered list of five options: "1. View Staff", "2. Add Staff", "3. Remove Staff", "4. Update Staff", and "5. Back". The text is light green on a black background. The terminal window has a white border and three colored window control buttons (red, yellow, green) in the top-left corner.

```
Staff Management Menu
1. View Staff
2. Add Staff
3. Remove Staff
4. Update Staff
5. Back
```

Additional Features

Colour Code

Every different role has a different colour associated to its UI

```
=====
Welcome Sarah Lee
Role: Administrator
=====
```

```
=====
Welcome Mark Lee
Role: Pharmacist
=====
```

```
=====
Welcome John Smith
Role: Doctor
=====
```

```
=====
Welcome Alice Brown
Role: Patient
=====
```

Role: Patient

A screenshot of an IDE (Eclipse) showing a Java program for a Hospital Management System. The program is titled "Hospital_Management_System". The code is in a file named "Hospital.java". The program displays a menu with the following options: 1. Login, 2. Register as a New Patient, 3. Forget Password, 4. Exit. The user is prompted to "Enter an option:" and the cursor is at the start of the input line. The program is running in a terminal window, and the output shows the menu and the prompt. The IDE interface includes a menu bar (File, Edit, Selection, View, Go, Run, Terminal, Help), a toolbar, and a status bar at the bottom showing "Ln 33, Col 56, Spaces: 4, UTF-8, CR/LF, Java".

```
File Edit Selection View Go Run Terminal Help
Hospital_Management_System

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\lhanh\OneDrive\Documents\WU\VS21\SC2002\Assignment\SC2002_Project\Hospital_Management_System> & 'C:\Program Files\Eclipse Adoptium\jdk-17.0.12-hotspot\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,address=127.0.0.1:5044,transport=dt_socket,server=true,jdk.attach.enable=true' -cp 'C:\Users\lhanh\AppData\Roaming\Code\User\workspaceStorage\1f2037ad0ed21ed7ad3857ca4a1ae71redut_java\jdk_1e\Hospital_Management_System_h22kale\bin' Hospital

WELCOME TO HOSPITAL MANAGEMENT SYSTEM

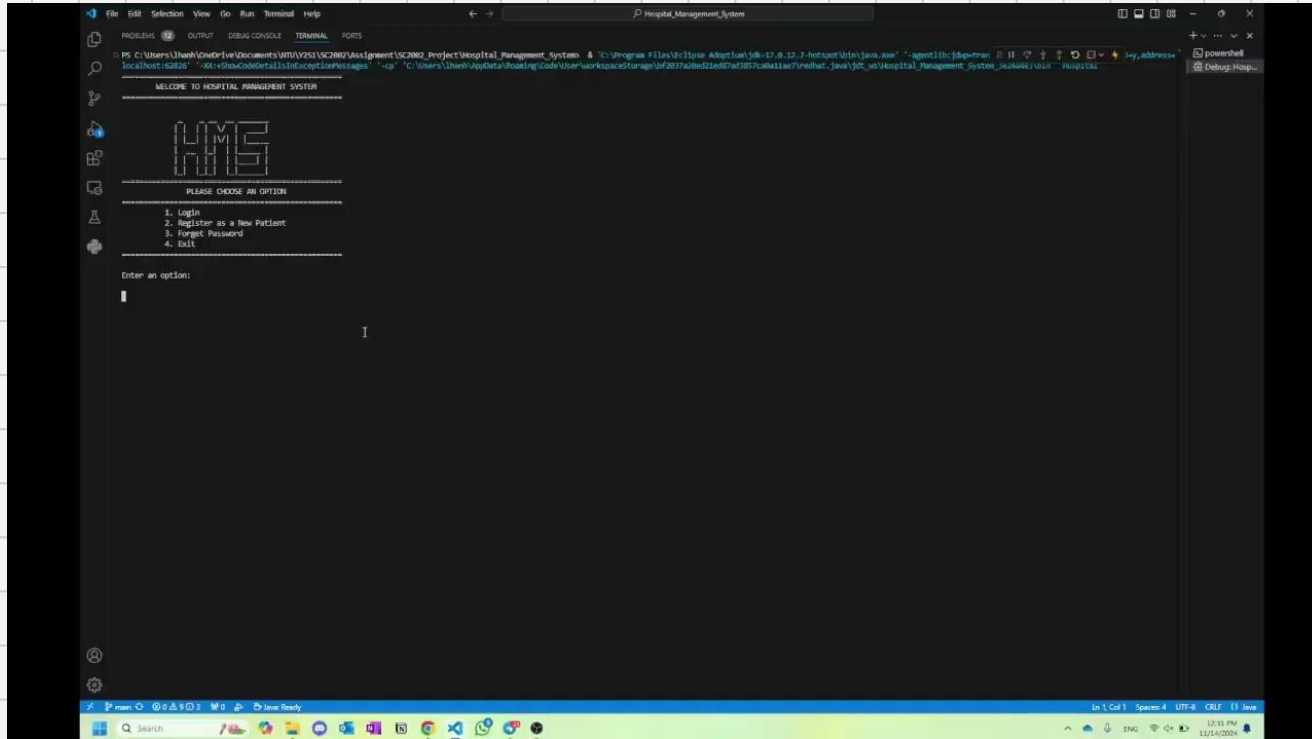
=====
                H M S
                H M S
=====

PLEASE CHOOSE AN OPTION

1. Login
2. Register as a New Patient
3. Forget Password
4. Exit

Enter an option:
|
```

Role: Doctor



The screenshot shows a Java application running in an IDE. The main window displays the following text:

```
WELCOME TO HOSPITAL MANAGEMENT SYSTEM  
=====
```

```
  HMS  
```

```
=====
```

```
PLEASE CHOOSE AN OPTION
```

```
=====
```

```
1. Login  
2. Register as a New Patient  
3. Forget Password  
4. Exit
```

```
=====
```

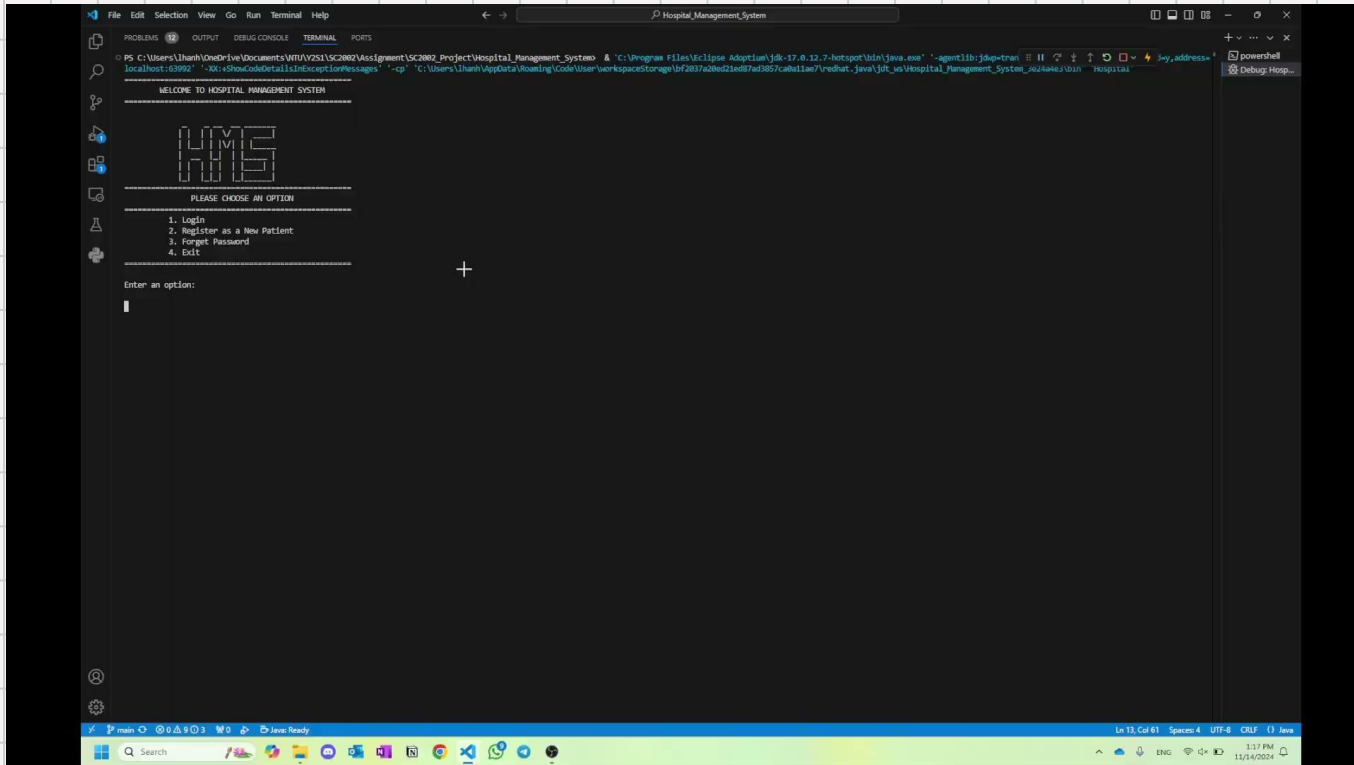
```
Enter an option:  
|
```

The application is running in a Java IDE, and the terminal window shows the following command:

```
PS C:\Users\hshah\OneDrive\Documents\WU\VS2022\Assignment\VS2022_Project\Hospital_Management_System> .\Hospital_Management_System.exe
```

The IDE interface includes a menu bar (File, Edit, Selection, View, Go, Run, Terminal, Help), a toolbar, and a status bar at the bottom.

Role: Pharmacist



```
PS C:\Users\lhanh\OneDrive\Documents\WTA\VS21\SC2002\Assignment\SC2002_Project\Hospital_Management_System> & "C:\Program Files\Eclipse Adoptium\jdk-17.0.12-hotspot\bin\java.exe" "-agentlib:jdwp=transport=dt_socket,address=127.0.0.1:5005,client=true,followSystemProperties=true" -cp "C:\Users\lhanh\AppData\Roaming\Code\User\workspaceStorage\b72037a0bed21ed7a73867cab11a07\redhat_java\jdk_vs\Hospital_Management_System\out\classes" Hospital
```

WELCOME TO HOSPITAL MANAGEMENT SYSTEM

HMS

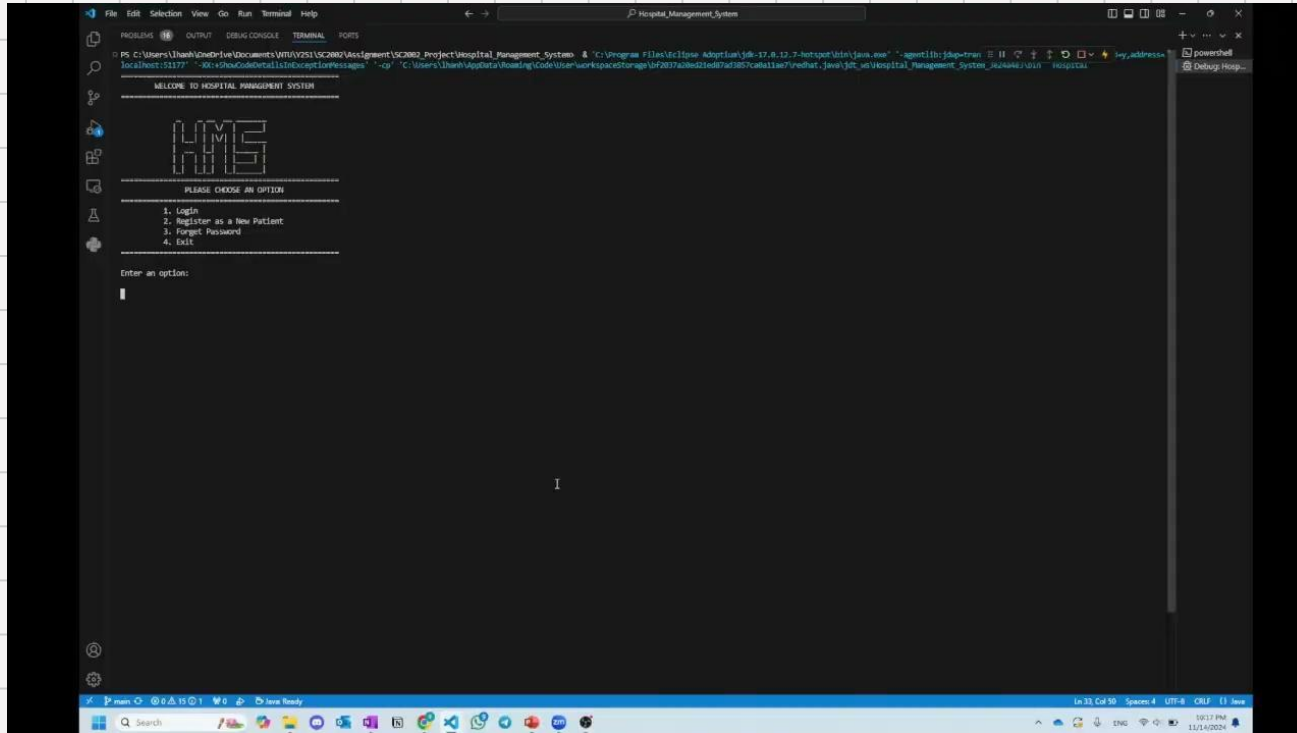
PLEASE CHOOSE AN OPTION

1. Login
2. Register as a New Patient
3. Forget Password
4. Exit

Enter an option:

|

Role: Admin



Reflection

- **Developing UML with varying levels of OOP and BCE knowledge**
 - Solution: Started with a basic skeleton
- **Distribution of Work: interdependencies required close collaboration**
 - Solution: Used pair programming for better code quality
- **Integrating OOP principles**
 - JDK constraints > adding static methods to interface

Key Takeaways:

- > Improved understanding of OOP, design principles, and teamwork
- > Project has potential for a robust HMS