SC2002 OBJECT-ORIENTED DES & PROG
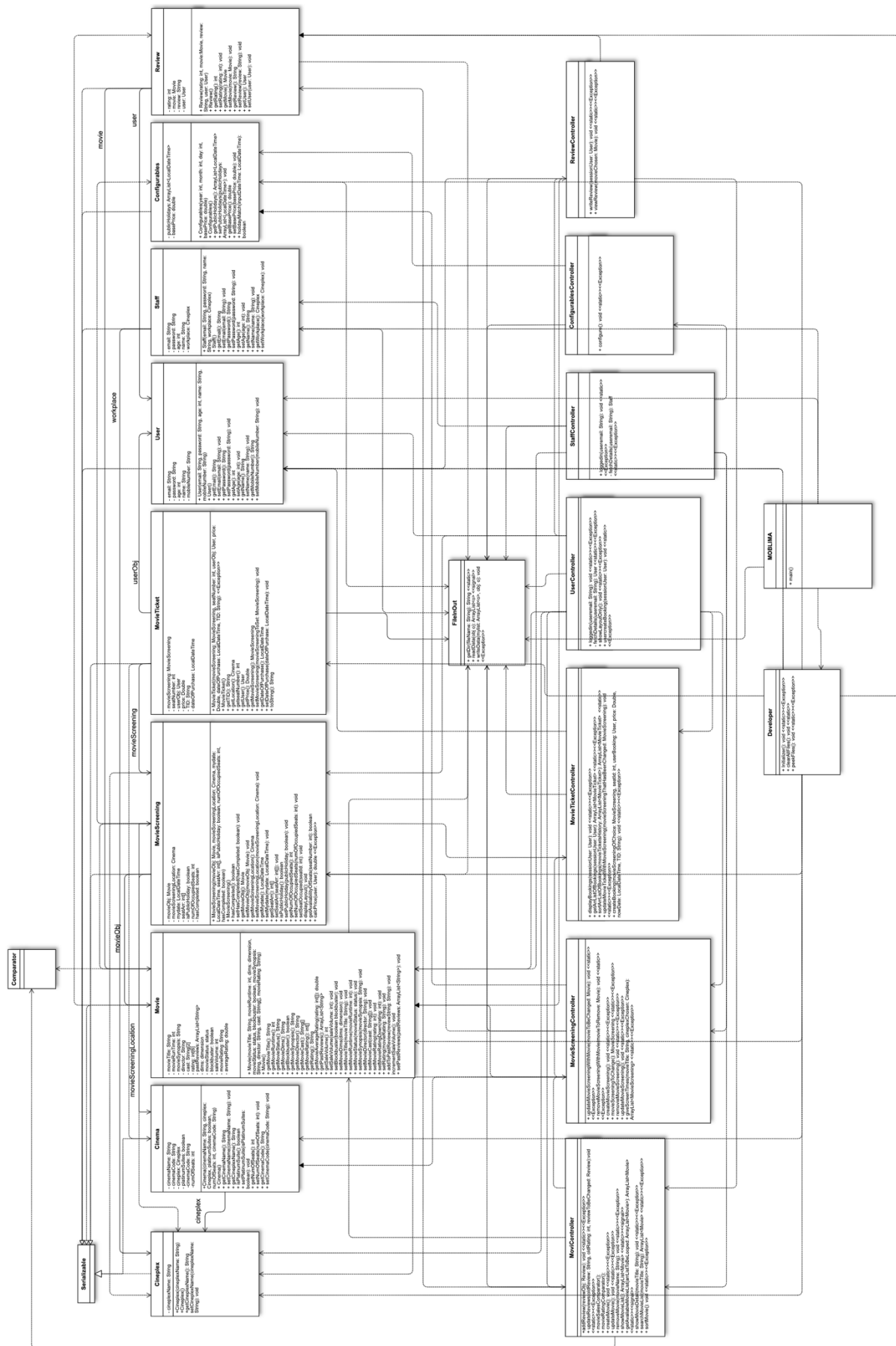
Report

SSP5   Assignment Group 5

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a) UML Class Diagram

b) Screen Captures of test cases

Testcase	Input	Output
Staff Log in	2 admin@admin.com admin	Welcome STAFF ADMIN ! What would you like to do today? 1. Create a movie listing 2. Update a movie listing 3. Remove a movie listing 4. Create a cinema showtime for one movie 5. Update a cinema showtime for one movie 6. Remove a cinema showtime for one movie 7. Configure system settings 8. List Top 5 movies 9. Logout Please enter your choice here: ▉
Configure Base Price to be $10	7 1 10	Please enter your choice here: 7 Please choose a setting to configure 1. Change base price of movie 2. Add a public holiday Enter your choice here: 1 The old base price for a movie is $7.0 What would be the new base price? $10 Base price for a movie successfully changed! Returning to main menu...
Configure holiday date to be 24 Oct 2022	2022,10,24 Y	Which date would you like to declare as a public holiday? Please enter the date in the format [YYYY,MM,DD] 2022,10,24 Declare 24 OCTOBER 2022 a holiday? Input your answer (Y/N): Y
Create movie Called Ajoomma	Ajoomma 90 3 2 1 NC16 A solo trip to Korea becomes a wild adventure for Auntie. He Shuming Hong Hui Fang Jong Dong Hwan	Movie title: Ajoomma Movie Runtime: 90 Movie Status 1. Coming Soon 2. Preview 3. Now Showing 4. End of Showing 3 BlockBuster? 1. True 2. False 2 MovieDimension: 1. 2D 2. 3D 1 Movie Rating: NC16 Movie Sypnosis: A solo trip to Korea becomes a wild adventure for Auntie. Director: He Shuming Cast 1 name: Hong Hui Fang Cast 2 name: Jong Dong Hwan

| Create showtime for Ajoomma, At Cathay JEM, standard 1, 24 Oct 2022 | 4<br>11<br>2<br>2<br>2022,10,24,0,0 | ```
Please enter your choice here: 4
Here is the full list of movies
1. Black Panther
2. Inception
3. Snowpiercer
4. Black Widow
5. Prey for the devil
6. Smile
7. Black Adam
8. Avatar: The Way Of Water
9. Edge of Tomorrow
10. SkyFall
11. Ajoomma
Enter the number corresponding to the movie: 11
Please choose from an existing list of Cineplexes:

1. Cathay Cineplex AMK HUB
2. Cathay Cineplex JEM
3. Cathay Cineplex Cineleisure
Enter the number corresponding to the cineplex: 2
Please choose from an existing list of Cinemas:
1. Platinum Movie Suites
2. Standard 1
3. Standard 2
Enter the number corresponding to the cinema: 2
Please Enter Date and Time  [YYYY,MM,DD,HH,MIN]
2022,10,24,0,0
``` |
| Log Out | 9 | ```
Please enter your choice here: 9
Logging out as staff...
Returning to main menu...
``` |
| User log in | 1<br>oliver@email.com<br>oliver | ```
Welcome USER Oliver Low !
What would you like to do today?
1. Search for movie and view movie details
2. Check seat availability
3. Make a booking
4. View booking history
5. Review a movie
6. View top 5 movies based on (1)Rating (2)Sale Volume
7. Logout
Please enter your choice here: 
``` |
| User view all movies and view details of Ajoomma | 1<br>8 | ```
Please enter your choice here: 1

Here are the full list of movies.
1. Black Panther
Status: Now_Showing
Ratings: 2.4

2. Inception
Status: Now_Showing
Ratings: 2.4

3. Black Widow
Status: Now_Showing
Ratings: 3.4

4. Prey for the devil
Status: Now_Showing
Ratings: 1.6

5. Smile
Status: Now_Showing
Ratings: 2.4

6. Black Adam
Status: Now_Showing
Ratings: 3.0

7. Edge of Tomorrow
Status: Preview
Ratings: 3.0

8. Ajoomma
Status: Now_Showing
Ratings: NA
```<br><br>```
8. Ajoomma
Status: Now_Showing
Ratings: NA

Enter the number corresponding to the movie here: 8

============ Information on Ajoomma ============
Movie Title: Ajoomma
Movie Runtime: 90
Movie Status: Now_Showing
Movie Dimensions: TwoD
Movie Rating: NC16
Director of film: He Shuming
Movie Cast: || Hong Hui Fang || Jong Dong Hwan ||
Movie Synopsis
A solo trip to Korea becomes a wild adventure for Auntie.
Ratings: NA
Reviews: NA
``` |

| View top 5 movies by rating | 6<br>1 | ```
View top 5 movies
1. By Ratings
2. By Sales Volume
1
1. Black Widow
Status: Now_Showing
Rating:  3.40
Sale Volume: 12

2. Black Adam
Status: Now_Showing
Rating:  3.00
Sale Volume: 29

3. Edge of Tomorrow
Status: Preview
Rating:  3.00
Sale Volume: 93

4. Black Panther
Status: Now_Showing
Rating:  2.40
Sale Volume: 78

5. Inception
Status: Now_Showing
Rating:  2.40
Sale Volume: 8
``` | ```
View top 5 movies
1. By Ratings
2. By Sales Volume
2
1. Edge of Tomorrow
Status: Preview
Rating:  3.00
Sale Volume: 93

2. Black Panther
Status: Now_Showing
Rating:  2.40
Sale Volume: 78

3. Smile
Status: Now_Showing
Rating:  2.40
Sale Volume: 68

4. Prey for the devil
Status: Now_Showing
Rating:  1.60
Sale Volume: 64

5. Black Adam
Status: Now_Showing
Rating:  3.00
Sale Volume: 29
``` |
| View top 5 by sales volume | 6
2 | | |
| Purchase ticket for Black Panther in JEM standard 2,<br>Seat 99.<br>Check for weekday pricing | 3<br>2<br>1<br>3<br>99<br>Y | ```
Base price of a movie ticket: SGD10.00
====================================
Your seat is secured!
Ticket price = SGD10.00(Excl of GST)
Goods and Service Tax: +SGD0.70
Ticket price = SGD10.70(Incl of GST)
Proceed (Y/N) ?Y
Ticket purchase successful!
====================================
Here is your ticket ID (JS2202211120155)
Name: Oliver Low
Email: oliver@email.com
Mobile Number: 81234568
====================================
Thank you for using our booking services!
Returning to user menu...
``` | |
| Purchase ticket for Black Panther in JEM, premium suites, seat 90.<br>Check if ticket is premium suit pricing. | 3<br>2<br>1<br>1<br>90<br>Y | ```
Base price of a movie ticket: SGD10.00
Platinum Suite Pricing: +SGD 10.00
====================================
Your seat is secured!
Ticket price = SGD20.00(Excl of GST)
Goods and Service Tax: +SGD1.40
Ticket price = SGD21.40(Incl of GST)
Proceed (Y/N) ?Y
Ticket purchase successful!
====================================
Here is your ticket ID (JP1202211120201)
Name: Oliver Low
Email: oliver@email.com
Mobile Number: 81234568
====================================
Thank you for using our booking services!
Returning to user menu...
``` | |

Purchase ticket for Ajoomma, seat 45 Screening is on public holiday Check if ticket is holiday pricing.	3 2 8 1 45 Y	``` Base price of a movie ticket: SGD10.00 Holiday Pricing: +SGD 3.00 =================================== Your seat is secured! Ticket price = SGD13.00(Excl of GST) Goods and Service Tax: +SGD0.91 Ticket price = SGD13.91(Incl of GST) Proceed (Y/N) ?Y Ticket purchase successful! =================================== Here is your ticket ID (JS1202211120204) Name: Oliver Low Email: oliver@email.com Mobile Number: 81234568 =================================== Thank you for using our booking services! Returning to user menu... ```
Purchase ticket for Black Panther at JEM, standard 1 on weekend. Check if ticket is Weekend pricing.	3 2 1 2 93 Y	``` Base price of a movie ticket: SGD10.00 Weekend Pricing: +SGD 2.00 =================================== Your seat is secured! Ticket price = SGD12.00(Excl of GST) Goods and Service Tax: +SGD0.84 Ticket price = SGD12.84(Incl of GST) Proceed (Y/N) ?Y Ticket purchase successful! =================================== Here is your ticket ID (JS1202211120208) Name: Oliver Low Email: oliver@email.com Mobile Number: 81234568 =================================== Thank you for using our booking services! Returning to user menu... ```
User write review for Ajooma	5 8 5 Very touching!	``` Enter you choice of movie: 8 Please give a rating out of 5: 5 Please type in your review in full below: Very touching! ```
User search for Ajoomma details to check review is written	1 8	``` =============== Information on Ajoomma =============== Movie Title: Ajoomma Movie Runtime: 90 Movie Status: Now_Showing Movie Dimensions: TwoD Movie Rating: NC16 Director of film: He Shuming Movie Cast: || Hong Hui Fang || Jong Dong Hwan || Movie Synopsis A solo trip to Korea becomes a wild adventure for Auntie. Ratings: NA Reviews: 1. Very touching! ```
User log out	7	``` Please enter your choice here: 7 Logging out as user... Returning to main menu... ```

Staff remove movie "Smile"	3 5	Enter the number of the movie to be deleted: 5 Smile successfully deleted! Here are the list of movies available on the system. 1. Black Panther Status: Now_Showing Ratings: 2.8 2. Inception Status: Now_Showing Ratings: 3.4 3. Black Widow Status: Now_Showing Ratings: 1.8 4. Prey for the devil Status: Now_Showing Ratings: 2.4 5. Black Adam Status: Now_Showing Ratings: 2.4 6. Edge of Tomorrow Status: Preview Ratings: 2.0 7. Ajoomma Status: Now_Showing Ratings: NA
Staff remove movie screening for Inception for 2 January.	6 2 1	Enter the number corresponding to the movie screening: 1 Movie Screening Successfully deleted Enter the number corresponding to the movie: 2 1. 2 FEBRUARY WEDNESDAY Location: Cathay Cineplex AMK HUB 2. 2 MARCH WEDNESDAY Location: Cathay Cineplex AMK HUB 3. 2 APRIL SATURDAY Location: Cathay Cineplex JEM 4. 2 MAY MONDAY Location: Cathay Cineplex JEM 5. 2 JUNE THURSDAY Location: Cathay Cineplex JEM 6. 2 JULY SATURDAY Location: Cathay Cineplex Cineleisure 7. 2 AUGUST TUESDAY Location: Cathay Cineplex Cineleisure 8. 2 SEPTEMBER FRIDAY Location: Cathay Cineplex Cineleisure

| Staff update movie for Black Panther to be end of showing. Black panther should be removed from list of available movies. | 2<br>Black panther | ```
Please enter your choice here: 2
Enter title of movie to be updated:
black panther
Current movie status: Now_Showing
Movie status changed to End_Of_Showing
Black Panther successfully deleted!
```<br>```
Here are the list of movies available on the system.
1. Inception
Status: Now_Showing
Ratings: 3.4

2. Black Widow
Status: Now_Showing
Ratings: 1.8

3. Prey for the devil
Status: Now_Showing
Ratings: 2.4

4. Black Adam
Status: Now_Showing
Ratings: 2.4

5. Edge of Tomorrow
Status: Preview
Ratings: 2.0

6. Ajoomma
Status: Now_Showing
Ratings: NA
``` |
| Log out | 9 | ```
Please enter your choice here: 9
Logging out as staff...
Returning to main menu...
``` |
| Child log in | 1<br>kid@email.com<br>kid | ```
Welcome USER Rong !
What would you like to do today?
1. Search for movie and view movie details
2. Check seat availability
3. Make a booking
4. View booking history
5. Review a movie
6. View top 5 movies based on (1)Rating (2)Sale Volume
7. Logout
Please enter your choice here: 
``` |
| Child check avail movies to see if "Black Panther" and "Smile" are removed | 1 | ```
Here are the full list of movies.
1. Inception
Status: Now_Showing
Ratings: 3.4

2. Black Widow
Status: Now_Showing
Ratings: 1.8

3. Prey for the devil
Status: Now_Showing
Ratings: 2.4

4. Black Adam
Status: Now_Showing
Ratings: 2.4

5. Edge of Tomorrow
Status: Preview
Ratings: 2.0

6. Ajoomma
Status: Now_Showing
Ratings: NA
``` |

Child check "Inception" show time to check if 2nd Jan screening is removed. 2nd Jan screening should be removed.	2 1 1 1 (to return to user menu) 0	Movie = Inception 1. 2 FEBRUARY WEDNESDAY Location: Cathay Cineplex AMK HUB Standard 2 2. 2 MARCH WEDNESDAY Location: Cathay Cineplex AMK HUB Standard 3
Child buy ticket for Black Adam, AMK hub standard 2 seat 98. Check for student pricing.	3 1 4 2 98 Y	Base price of a movie ticket: SGD10.00 Student Pricing (25% discount): -SGD2.50 == Your seat is secured! Ticket price = SGD7.50(Excl of GST) Goods and Service Tax: +SGD0.53 Ticket price = SGD8.03(Incl of GST) Proceed (Y/N) ?Y Ticket purchase successful! == Here is your ticket ID (AS2202211120347) Name: Rong Email: kid@email.com Mobile Number: 812345675 == Thank you for using our booking services! Returning to user menu...
Check if seat is occupied	2 1 4 2 0 (to return to user menu)	Here is the cinema layout for the showtime you selected <ENT> <_0> <_1> <_2> <_3> <_4> <_5> <_6> <_7> <_8> <_9> <0_> [00] [01] [02] [03] [04] [05] [06] [07] [08] [09] <1_> [10] [11] [12] [13] [14] [15] [16] [17] [18] [19] <2_> [20] [21] [22] [23] [24] [25] [26] [27] [28] [29] <3_> [30] [31] [32] [33] [34] [35] [36] [37] [38] [39] <4_> [40] [41] [42] [43] [44] [45] [46] [47] [48] [49] <5_> [50] [51] [52] [53] [54] [55] [56] [57] [58] [59] <6_> [60] [61] [62] [63] [64] [65] [66] [67] [68] [69] <7_> [70] [71] [72] [73] [74] [75] [76] [77] [78] [79] <8_> [80] [81] [82] [83] [84] [85] [86] [87] [88] [89] <9_> [90] [91] [92] [93] [94] [95] [96] [97] [x] [99] <EXIT> SCREEN Type anything to return to menu:

c) Design Considerations

Feature 1: Guest Account
The first feature that we intend to introduce is to have a Guest account that does not require the User to log in to our app in order to view basic information such as movies on show, seat availability for different screenings, etc. This is so that people do not have to go through the hassle of logging in to view this information. The booking part will still require the Users to log in though, to authenticate their information, as well as to allow proper booking procedures.

How can our current design cater to Feature 1
Currently, we already have 2 classes dedicated to "People", which are Staff.java and User.java and they are in fact quite similar for the most part. Hence, we can simply create a People interface that is implemented by Staff, User, and the new class "Guest", especially the "loggedin" function which provides the interface unique to each class. By having a generic People interface, we are adhering to the Open-Closed Principle(OCP) as the People module won't be altered in order to suit the needs of the subclasses. However, the subclasses will still be able to use the methods of People by overriding them. This will ensure abstraction, and in doing so, allows for reusability of the "People" interface if a new specialisation of person is required in the future. Doing so also ensures that changes made to 1 class would not cause a ripple effect of changes to all classes that have dependencies on these classes.

Feature 2: Customizable Cinema Seating Plan
We can also have a seat customization feature that is accessible only to Staff. This feature will allow Staff to customize not only the total seats available in the screening of a particular cinema, as well as the type of seats such as Standard, Couple, and Massage seats represented by "S", "C" and " " respectively. This will allow for greater modification to seating arrangements for movie screenings in cinemas by the Staff.

How can our current design cater to Feature 2
In order to achieve this, we can simply create a Seat superclass, i.e. Parent class, that is to be inherited by its child classes (Standard, Couple, Massage). The basic information to be inherited include seatType, seatPlacementInCinema() method to be overriden by child classes. The Parent class will then have its own private attribute totalNumOfSeatsAllowed and provideFinalLayout() function that will display the final seating arrangement of the screening after combining all unique seats. By having an inheritance class, there are better encapsulation methods not to be inherited by child classes that can be declared private. Having such a specific class also ensures that the Single Responsibility Principle (SRP) is followed as each class is responsible for its own feature in the MOBLIMA app, which is also the case for our current implementation already. Hence, this new feature introduction will also not result in a domino effect of changes when a small change to the existing classes is made. As such, reusability is also ensured.

d) Declaration of Original Work form

SC/CE/CZ2002 Object-Oriented Design & Programming
Assignment

APPENDIX B:

Declaration of Original Work for SC/CE/CZ2002 Assignment

We hereby declare that the attached group assignment has been researched, undertaken, completed and submitted as a collective effort by the group members listed below.

We have honored the principles of academic integrity and have upheld Student Code of Academic Conduct in the completion of this work.

We understand that if plagiarism is found in the assignment, then lower marks or no marks will be awarded for the assessed work. In addition, disciplinary actions may be taken.

Name	Course (CE2002 or CZ2002)	Lab Group	Signature /Date
Chee Wen Zhan	SC2002	SSP5	13/11/2022
Cheong Jia Rong	SC2002	SSP5	13/11/2022
Bernard Chiang Zhi Heng	SC2002	SSP5	13/11/2022
Oliver Low Chun Yi	SC2002	SSP5	13/11/2022

Important notes:

1. Name must **EXACTLY MATCH** the one printed on your Matriculation Card.