**Software Requirements Specification for**

**Catch Movie**

**Version 1.0 approved**

**Prepared by SSP 8-Group 4**

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**1. Introduction**

**1.1 Purpose**

1.1.1 The purpose of this document is to present a detailed description of the Android application, “CatchMovie”.

1.1.2 “CatchMovie” aims to provide a platform for users to view and book movie tickets from various cinemas companies such as Cathay, Golden Village and Shaw. The Android application helps users to eliminate the trouble of having to view the movie schedules across different websites, hence providing convenient way to find showtime and cinema that best suits our needs.

**1.2 Document Conventions**

1.2.1 “Android Application” or “Application” or “System” refers to the “CatchMovie” application.

1.2.2 “Users” refers to the users of the “CatchMovie” application.

**1.3 Intended Audience and Reading Suggestions**

1.3.1 This Software Requirements Document is intended for:

- **Developers** to review the project design and implementation to allow for improvement and addition of new features. It sets the guideline for future development. - **Project Managers** to oversee the whole project and making sure that the direction and scope is clear. - **Users** to understand how the application works and how each feature is being used. - **Testers** to use the document as a reference to design their testing strategy and locate bugs. With the help of this document, it becomes much more systematic and organized. - **Marketing Staff** to reference the document and promote the application based on it’s features and usability. - **Documentation Writers** to use as a baseline in referencing and creating a concise document for users.

Introduction Description

Overall External Interface Requirements

Features System Requirements

Other Functional Non- Requirements Other Developers v v v v v v Project v v v v v v Managers Users v v v Testers v v v v v v Marketing Staff v v v v Documentation v v v v v v Writers

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**1.4 Product Scope**

1.4.1 “CatchMovie” is an Android application that provides a unified platform for users to get updated movie information across cinemas in Singapore: Cathay, Golden Village and Shaw.

1.4.2 The application uses publicly available data of movie showtimes obtained via web scraping from *https://www.popcorn.app/sg/*

1.4.3 The application’s simplicity and ease of use allow users to quickly search and compare different movie showtimes across cinemas. Subsequently, it allows users to book movie tickets by redirecting users to the corresponding official cinema website. Additionally, it also allows users to get information on upcoming movies and ongoing promotions across the different cinema platforms.

**2. Overall Description**

**2.1 Product Perspective**

2.1.1 This application is developed to eliminate the trouble of having to view the movie schedules across different cinema websites. With the help of publicly available movie data, we have designed “CatchMovie” for citizens to utilize in their daily life. The brief scope of the project can be found in section 1.4.

**2.2 Product Functions**

2.2.1 Users must be able to login with their gmail account to access all features of this application.

2.2.2 Users must be able to query the system for getting movie information of Now Showing movies compiled across different cinemas in Singapore.

2.2.3 Users must be able to query the system for getting movie information of Upcoming movies in Singapore.

2.2.4 Users must be able to do direct search of movie information by providing movie title and movie date as input.

2.2.5 Users must be directed by the system to the official cinema website for booking of movie tickets.

2.2.6 Users must be able to view ongoing promotions across different cinemas in Singapore.

2.2.7 Users must be able to view his/her profile details based on the gmail account used for login

2.2.8 Users must be able to view support/basic FAQ regarding on how to use the application.

2.2.9 Users must be able to submit a rating for the application.

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**2.3 User Classes and Characteristics**

**2.3.1 Users**

2.3.1.1 The targeted audience of “CatchMovie” are mainly Singaporeans or PRs.

*2.3.1.2* The application is to be used throughout the year.

2.3.1.3 The design of the application is meant to be easy and simple for users to understand and use.

2.3.1.4 It is not expected for users to be technically savvy to fully utilize the application.

**2.3.2 Developers**

2.3.2.1 The developers are responsible for the maintenance of the “CatchMovie” application.

2.3.2.2 The developers are given full access control for the system.

2.3.2.3 The developers are expected to be technically savvy and well-versed in software development to ensure the application is properly maintained.

**2.4 Operating Environment**

The application “Catch Movie” will operate on mobile phones or tablets with Android operating systems and internet connection. The application is developed using Android Studio. Firebase is used for verification of users’ credentials and storing of users’ data. Additionally, myJSON storage is used to store movie details and showtimes.

**2.4.1 IDE**

1) Android Studio Version 3.5.1

**2.4.2 Programming Language**

1) Java Version 11.0.3

**2.4.3 Operating System**

1) Android OS 9 (Pie)

**2.4.4 Web Scraper**

1) Web Scraper from Chrome Extension Version 0.4.2

**2.4.5 Database**

1) Firebase Realtime Database 2) myJSON

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**2.4.6 User Credentials Authentication**

1) Google Firebase Authentication

**2.5 Design and Implementation Constraints**

2.5.1 Due to limitation of the web scraper used, we would only scrape movie information for current day. Therefore, to overcome the constraint we have set up the web scraper to automatically run on a daily basis.

2.5.2 We are only able to retrieve the scraping results as csv files. Hence, we converted the csv files to JSON array and utilized simple JSON storage from *myjson.com*. The application will make HTTP request for fetching the JSON array response body from the url generated by *myjson.com.*

2.5.3 Due to security issues on payment verification, we were not able to implement movie ticket bookings and payments inside “CatchMovie” application itself. Therefore, the application will direct users to official website to proceed with bookings and payments upon choosing the most suitable showtime and cinema.

**2.6 User Documentation**

2.6.1 The application will be delivered with the UML diagrams, use case descriptions and video demo showing the functionality of the application.

**2.7 Assumptions and Dependencies**

**2.7.1 Assumptions**

2.7.1.1 The public data is always available for scraping on *https://www.popcorn.app/sg/*

2.7.1.2 The data from *https://www.popcorn.app/sg/* is always accurate and reliable.

2.7.1.3 Web Scraper is always running and authorized to scrape *https://www.popcorn.app/sg/*

2.7.1.4 The Firebase Authentication and Firebase Realtime Database is always up and running.

**2.7.2 Dependencies**

2.7.2.1 The application must rely on the available data from https://www.popcorn.app/sg/

2.7.2.2 The application is dependent on Web Scraper from Chrome Extension to retrieve movie information data

2.7.2.3 The application is dependent on myJSON to store and retrieve movie information data

2.7.2.4 The application is dependent on Firebase Authentication to verify users’ login.

2.7.2.5 The application is dependent on Firebase Realtime Database to store ratings submitted by user

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**3. External Interface Requirements**

**3.1 User Interfaces**

3.1.1 The LoginUI interface is set to be the default main page upon launching as user is required to login with their account before accessing features of the application.

3.1.2 All interfaces aside from LoginUI have 4 tabs displayed at the bottom of the screen for providing navigation to different pages of the application.

3.1.3 Every interface shares standardized color schemes and layouts that does not change regardless of the device’s dimension or resolution.

3.1.4 Error messages if any will be displayed on the same interface of the page’s input.

3.1.5 LoginUI

Users may click on the login button to login with their valid gmail account through this interface. Login information must be verified subsequently by Firebase Authentication.

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3.1.6 SearchUI

This interface shall allow users to do direct search of movie information by providing movie title and movie date as input. The system must direct the user to the selected movie interface and show detailed information about that movie.

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3.1.7 NowShowingUI

This interface shall display general information of Now Showing movies consisting of movie posters and titles. Users may click on the movie posters/titles. The system must direct the user to the selected movie interface and display detailed information about that movie. Users may click book movie ticket button for a particular showtime. The system must direct the user to the official cinema booking page for that particular showtime.

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3.1.8 UpcomingUI

This interface shall display general information of Upcoming movies consisting of movie posters and titles.

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3.1.9 ProfileUI

This interface shall display general information of user’s profile consisting of profile picture, first name, last name. User may click View Support button and the system must direct user to the Support page (SupportUI). User may click Sign Out button and the system must direct user to LoginUI

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3.1.10 SupportUI

This interface shall display basic FAQ about how to use the application. User may rate the application by clicking the stars and submit button. System shall store rating in Firebase Realtime Database

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3.1.11 PromotionsUI

This interface shall display ongoing promotions across different cinemas in Singapore. Users may click on the promotions posters. The system must direct user to the selected promotion page and display detailed information about that promotion.

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**3.2 Hardware Interfaces**

CatchMovie application will be deployed and built on android devices to allow user to locate their movies without any hassle.

**3.3 Software Interfaces**

3.3.1 The system shall use the Web Scraper from Chrome Extension to pull all relevant information needed by the application.

3.3.2 The system shall use myJSON to store movie information data and retrieve movie information via HTTP request of JSON array.

3.3.3 The system shall use Firebase Authentication to verify user credentials in login phase.

3.3.4 The system shall use Firebase Realtime Database to store ratings given by user.

**3.4 Communications Interfaces**

3.4.1 The system shall use the HTTP protocol for communication over the internet

**4. System Features**

**4.1 User Account Login**

4.1.1 Description and Priority

Users shall be able to login with their gmail account to access features offered by the

application. This feature has high priority.

4.1.2 Stimulus/Response Sequences

4.1.2.1 The precondition of this feature will be that user should have a registered gmail

account in order to login successfully. 4.1.2.2 The user clicks the Login button at LoginUI

4.1.2.3 The system asks the user to fill his/her gmail address and password 4.1.2.4 The system calls Firebase Authentication to verify user credentials

4.1.2.4.1 If the credential is successfully verified, the system brings user into the main functionalities of the application and show ProfileUI 4.1.2.4.2 If the credential is not successfully verified, the system displays “Failed” message and bring users back to LoginUI 4.1.3 Functional Requirements

REQ-1: The system must allow users to enter the system by displaying a login

page upon starting the application.

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REQ-2: Users must be able to click the login button in UI and enter their email

address and password.

REQ-3: The system must be able to validate user credentials through Firebase

Authentication REQ-3.1 If authentication via Firebase is successful, the system must

directs user to ProfileUI REQ-3.2 If authentication via Firebase is not successful, the system must

display “Failed” message and directs user back to LoginUI

**4.2 View Now Showing Info**

4.2.1 Description and Priority

Users shall be able to view detailed information of the Now Showing movies. This feature

has high priority.

4.2.2 Stimulus/Response Sequences

4.1.2.1 The precondition of this feature will be that user should user must have login to

the system.

4.1.2.2 The user clicks the Now Showing Movie button at bottom navigation bar 4.1.2.3 The system directs user to NowShowingUI which displays movie posters and

titles of Now Showing movies 4.1.2.4 The user may click on any of the movie posters or titles to view detailed

information of that movie 4.1.2.5 The system directs user to the selected movie interface and display detailed

information about that movie.

4.2.3 Functional Requirements

REQ-1: The system must allow users to view Now Showing movies anytime by

clicking the Now Showing Movie button at bottom navigation bar

REQ-2: The system must be able to direct user to NowShowingUI and display

movie information consisting of: REQ-2.1: Now Showing movies posters REQ-2.2: Now Showing movies titles

REQ-3: User must be able to click on any of the movie posters or titles to get

detailed information of the particular movie

REQ-3.1: The system must be able to direct user to selected movie page

containing detailed information: REQ-3.1.1 Movie title

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REQ-3.1.2 Movie poster REQ-3.1.3 Movie rating REQ-3.1.4 Language REQ-3.1.5 Synopsis REQ-3.1.6 Directors and casts REQ-3.1.7 Duration REQ-3.1.8 The system should display NA if the data is not

available online

REQ-3.2: The system must allow user to view showtimes across different

cinemas for the selected movie. REQ-3.2.1 The system must be able to display showtimes for today and next 4 days whenever the data is available. REQ-3.2.2 The showtime details must include cinema name and movie format whenever the data is available.

**4.3 View Upcoming Info**

4.3.1 Description and Priority

Users shall be able to view information of the Upcoming movies. This feature has high

priority.

4.3.2 Stimulus/Response Sequences

4.3.2.1 The precondition of this feature will be that user should user must have login to

the system.

4.3.2.2 The user clicks the Upcoming Movie button at bottom navigation bar 4.3.2.3 The system directs user to UpcomingUI which displays movie posters and titles

of Upcoming movies 4.3.2.4 The user may click on any of the movie posters or titles to view detailed

information of that movie 4.3.2.5 The system directs user to the selected movie interface and display detailed

information about that movie.

4.3.3 Functional Requirements

REQ-1: The system must allow users to view Upcoming movies anytime by

clicking the Upcoming Movie button at bottom navigation bar

REQ-2: The system must be able to direct user to UpcomingUI upon user request

and display movie information consisting of: REQ-2.1: Upcoming movies posters REQ-2.2: Upcoming movies titles

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REQ-3: User must be able to click on any of the movie posters or titles to get

detailed information of the particular movie

REQ-3: The system must be able to direct user to selected movie page containing

detailed information:

REQ-3.1 Movie title REQ-3.2 Movie poster REQ-3.3 Movie rating REQ-3.4 Language REQ-3.5 Synopsis REQ-3.6 Directors and casts REQ-3.7 Duration REQ-3.8 The system should display NA if the data is not available

online

**4.4 Book Movie Ticket**

4.4.1 Description and Priority

Users shall be able to book movie tickets from official cinema webpage. This feature has

high priority.

4.4.2 Stimulus/Response Sequences

4.4.2.1 The precondition of this feature is that this use case extends View Now Showing

Info. It is invoked whenever the user decides to book movie tickets after viewing the showtimes for a particular movie. 4.4.2.2 For the selected movie, the system displays detailed showtimes across different

cinemas as described in View Now Showing info. 4.4.2.3 The user may click the book ticket button for his corresponding choice of movie

showtime and cinema

4.4.2.4 The system directs user to the booking page of the official cinema website 4.4.3 Functional Requirements

REQ-1: The system must allow users to click on a particular showtime and cinema

for the selected movie

REQ-2: The system must be able to direct users to the booking page of the official

cinema website REQ-2.1: If the cinema is GV, the system must direct users to https://www.gv.com.sg/GVBuyTickets#/ REQ-2.2: If the cinema is Cathay, the system must direct users to https://www.cathaycineplexes.com.sg/showtimes.aspx REQ-2.3: If the cinema is Shaw, the system must direct users to https://shaw.sg/Showtimes/

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REQ-2.4: If the cinema is Filmgarde, the system must direct users to https://fgcineplex.com.sg/buyticket

**4.5 Search Movie**

4.5.1 Description and Priority

Users shall be able to do direct search for movies by inputting a movie title. This feature

has high priority.

4.5.2 Stimulus/Response Sequences

4.5.2.1 The precondition of this feature will be that user should user must have login to

the system. 4.5.2.2 The user clicks the Search button at bottom navigation bar 4.5.2.3 The system directs user to SearchUI which displays a dropdown list of available

movie titles

4.5.2.4 The user may choose a movie from the dropdown list 4.5.2.5 The system directs user to the selected movie page and displays detailed

information for the movie

4.5.3 Functional Requirements

REQ-1: The system must allow users to initiate search options by clicking the

Search button at bottom navigation bar

REQ-2: The system must be able to direct users to SearchUI and displays a

dropdown list of available movie titles

REQ-3: The user must be able to choose any movie from the dropdown list

REQ-4: The system must be able to display a dropdown list of dates from today to

next 4 days

REQ-5: The user must be able to choose any date from the dropdown list

REQ-6: The system must be able to direct user to the selected movie details page

or movie showtime page depending on users’ input: REQ-6.1: If the user inputs movie title only, the system must direct user to the movie details page for the selected movie. REQ-6.2: If the user inputs both movie title and date, the system must direct user to the movie showtimes page for the selected movie and date, REQ-6.3: If the user inputs date only, the system should not direct user to any page.

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**4.6 View Promotions**

4.6.1 Description and Priority

Users shall be able to view current promotions across different cinemas. This feature has

medium priority.

4.6.2 Stimulus/Response Sequences

4.6.2.1 The precondition of this feature will be that user should user must have login to

the system. 4.6.2.2 The user clicks the Promotions button at bottom navigation bar 4.6.2.3 The system directs user to PromotionsUI which displays ongoing promotions

across different cinemas

4.6.3 Functional Requirements

REQ-1: The system must allow users to view promotions by clicking the

Promotions button at bottom navigation bar

REQ-2: The system must direct users to PromotionsUI which displays ongoing

promotions’ poster and names REQ-3: The user may click on any of the promotions posters or titles to view detailed

information of that promotion REQ-4: The system directs user to the selected promotion interface and display detailed

information about that promotion consisting of:

REQ-4.1: Promotion name REQ-4.2: Promotion description REQ-4.3: Promotion poster

**4.7 View Account Profile**

4.7.1 Description and Priority

Users shall be able to users to view his/her profile details based on the gmail account used

for login. This feature has high priority.

4.7.2 Stimulus/Response Sequences

4.7.2.1 The precondition of this feature will be that user should user must have login to

the system. 4.7.2.2 The user clicks the Profile button at bottom navigation bar 4.7.2.3 The system directs user to ProfileUI which displays his/her profile details

extracted from gmail account used for login

4.7.3 Functional Requirements

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REQ-1: The system must allow users to view his/her profile by clicking the Profile

button at bottom navigation bar

REQ-2: The system must be able to direct users to ProfileUI and display profile

details consisting of: REQ-2.1: First name REQ-2.2: Last name REQ-2.3: Profile picture REQ-2.4: Email address

REQ-3: The system must allow users to exit/log out of the system by clicking Sign

Out button and direct back to LoginUI

**4.8 View Support**

4.8.1 Description and Priority

Users shall be to view help/support regarding how to use the app. This feature has medium

priority.

4.8.2 Stimulus/Response Sequences

4.8.2.1 The precondition of this feature will be that user should user must have login to

the system.

4.8.2.2 The user clicks the View Support button at the ProfileUI 4.8.2.3 The system directs user to SupportUI which displays lists of frequently asked

questions about using the application

4.8.2.4 The user may click on any of the questions inside the list 4.8.2.5 The system expands the list and displays answer to the selected question

4.8.3 Functional Requirements

REQ-1: The system must allow users to view support by clicking View Support

button from ProfileUI

REQ-2: The system must be able to direct users to SupportUI and displays list of

questions REQ-2.1: The user must be able to click on any of the questions inside the

list REQ-2.2: The system must be able to expand the list and display answer

to the selected question

REQ-3: The system must be able to direct user back to ProfileUI anytime by

clicking Back to Profile button

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**4.9 Give App Review**

4.9.1 Description and Priority

Users shall be able to give ratings for the application. This feature has low priority.

4.9.2 Stimulus/Response Sequences

4.9.2.1 The precondition of this feature is that it extends View Support. It is invoked whenever the user decides to give rating for the application inside SupportUI.

4.9.2.2 The user gives rating by clicking the stars scale in SupportUI 4.9.2.3 The system displays acknowledgement message indicating the rating that the

user has just inputted 4.9.2.4 The user clicks the submit button

4.9.2.5 The system displays confirmation message that rating is submitted and directs

user back to ProfileUI 4.9.2.6 The system stores user ratings in Firebase Realtime Database

4.9.3 Functional Requirements

REQ-1: The system must allow user to give rating by clicking a scale from 1-5

REQ-2: The system must be able to display the rating that the user has just

inputted

REQ-3: The system must allow user to submit his/her rating by clicking a submit button

REQ-3.1: The system must be able to show confirmation message upon rating submission

REQ-3.2: The system must be able to direct user back to ProfileUI upon rating submission

REQ-3.3: The system must be able to store ratings given by user in Firebase Realtime Database

**5. Other Nonfunctional Requirements**

**5.1 Performance Requirements**

5.1.1 The application must be able to completely load each of its internal UI within 5 seconds or less.

5.1.2 The application shall be able to return user input/query within 5 second or less.

5.1.3 The system must be able to redirect to respective cinema’s payment page within 5 seconds

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**5.2 Security Requirements**

5.3.1 User credentials for login must be verified

**5.3 Software Quality Attributes**

**5.3.1 Usability**

5.4.1.1 The user must be able to get to a page within 5 clicks from any page.

5.4.1.2 Every text of this program (including error text messages) shall be written in simple English language.

5.4.1.3 The application must permit easy reversal actions between pages

5.4.1.4 The application shall indicate to user where they are at in the process

5.4.1.5 The layout of the application must be consistent throughout

5.4.1.6 The features of the application shall be self-explanatory and intuitive

5.4.1.7 The user should not have to remember more than 5 information

**5.3.2 Reliability**

5.4.2.1 User’s account details displayed in ProfileUI must match with actual details in user’s gmail account

5.4.2.2 The movie information and promotions data must reflect daily changes

**5.3.3 Supportability**

5.4.3.1 A maintenance developer shall be able to rectify any bugs within the system in less than 24 hours.

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**Appendix A: Data Dictionary**

**Term Definition** Now Showing Movies that are currently playing in Singapore Upcoming Movies that are going to be released in later date

**Appendix B: Functional Requirements**

1. The system must allow users to enter the system by displaying a login page upon starting

the application. 1.1. Users must be able to click the login button in UI and enter their email address

and password. 1.2. The system must be able to validate user credentials through Firebase

Authentication 1.2.1. If authentication via Firebase is successful, the system must directs user to

ProfileUI 1.2.2. If authentication via Firebase is not successful, the system must display

“Failed” message and directs user back to LoginUI

2. The system must allow users to query the system for getting movie information. 2.1. Users must be able to query the system for ‘Now showing’ movies.

2.1.1. The system must allow users to view Now Showing movies by clicking

the Now Showing Movie button at bottom navigation bar 2.1.2. The system must be able to direct user to NowShowingUI and display

movie information consisting of: 2.1.2.1. Now Showing movies posters 2.1.2.2. Now Showing movies titles 2.1.3. User must be able to click on any of the movie posters or titles to get

detailed information of the particular movie 2.1.3.1. The system must be able to direct user to selected movie page

containing detailed information: 2.1.3.1.1. Movie title 2.1.3.1.2. Movie poster 2.1.3.1.3. Movie rating 2.1.3.1.4. Language 2.1.3.1.5. Synopsis 2.1.3.1.6. Directors and casts 2.1.3.1.7. Duration

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2.1.3.1.8. The system must display NA if no information is available

online 2.1.3.2. The system must allow user to view showtimes across different

cinemas for the selected movie 2.1.3.2.1. The system must be able to display showtimes for today

and next 4 days whenever the data is available. 2.1.3.2.2. The showtime details must include cinema name and movie

format whenever the data is available.

2.2. Users must be able to query the system for upcoming movies.

2.2.1. The system must allow users to view Upcoming movies by clicking the

Upcoming Movie button at bottom navigation bar 2.2.2. The system must be able to direct user to UpcomingUI and display movie

information consisting of: 2.2.2.1. Upcoming movies posters 2.2.2.2. Upcoming movies titles 2.2.3. User must be able to click on any of the movie posters or titles to get

detailed information of the particular movie 2.2.4. The system must be able to direct user to selected movie page containing

detailed information: 2.2.4.1. Movie title 2.2.4.2. Movie poster 2.2.4.3. Movie rating 2.2.4.4. Language 2.2.4.5. Synopsis 2.2.4.6. Directors and casts 2.2.4.7. Duration 2.2.4.8. The system must display NA if no information is available online

3. The system must allow users to book movie tickets

3.1. The system must allow users to select a particular showtime to proceed with

tickets bookings from the official website 3.2. The system must be able to direct users to the official cinema website

3.2.1. If the cinema is GV, the system must direct users to

https://www.gv.com.sg/GVBuyTickets#/ 3.2.2. If the cinema is Cathay, the system must direct users to

https://www.cathaycineplexes.com.sg/showtimes.aspx 3.2.3. If the cinema is Shaw, the system must direct users to

https://shaw.sg/Showtimes/

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3.2.4. If the cinema is Filmgarde, the system must direct users

https://fgcineplex.com.sg/buyticket

4. The system must allow users to do direct search for movie information

4.1. The system must allow user to initiate search options by clicking the Search

button at bottom navigation bar 4.2. The system must be able to direct users to SearchUI and displays a dropdown list

of available movie titles 4.3. The user must be able to choose any movie from the dropdown list 4.4. The system must be able to display a dropdown list of dates from today to next 4

days 4.5. The user must be able to choose any date from the dropdown list 4.6. The system must be able to direct user to the selected movie details page or movie

showtime page depending on users’ input: 4.6.1. If the user inputs movie title only, the system must direct user to the movie

details page for the selected movie. 4.6.2. If the user inputs both movie title and date, the system must direct user to

the movie showtimes page for the selected movie and date, 4.6.3. If the user inputs date only, the system must not direct user to any page.

5. The system must allow users to view ongoing promotions

5.1. The users must be able to view promotions by clicking the Promotions button at

bottom navigation bar 5.2. The system must be able to direct users to PromotionsUI which displays ongoing

promotions’ poster and names 5.3. The user must be able to click on any of the promotions posters or names to view

detailed information of that promotion 5.4. The system must direct user to the selected promotion interface and display

detailed information about that promotion consisting of: 5.4.1. Promotion name 5.4.2. Promotion description 5.4.3. Promotion poster

6. The system must allow users to view his/her profile details based on the gmail account

used for login 6.1. The user must be able to view his/her profile by clicking the Profile button at

bottom navigation bar 6.2. The system must be able to direct users to ProfileUI and display profile details

consisting of: 6.2.1. First name

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6.2.2. Last name 6.2.3. Profile picture 6.2.4. Email address

7. The system must allow users to view support/help regarding how to use the application

7.1. The user must be able to view support by clicking View Support button from

ProfileUI 7.2. The system must be able to direct user to SupportUI and displays list of questions 7.2.1. The user must be able to click on any of the questions inside the list 7.2.2. The system must be able to expand the list and display answer to the

selected question 7.3. The system must be able to direct user back to ProfileUI anytime by clicking

Back to Profile button

8. The system must allow users to give ratings for the application.

8.1. The system must allow user to give rating by clicking a scale from 1-5 8.2. The system must be able to display the rating that the user has just inputted 8.3. The system must allow user to submit his/her rating by clicking a submit button

8.3.1. The system must be able to show confirmation message upon rating

submission 8.3.2. The system must be able to direct user back to ProfileUI upon rating

submission 8.3.3. The system must be able to store ratings given by user in Firebase

Realtime Database

9. The system must allow users to exit/log out of the system by clicking Sign Out button

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**Appendix C: Use Case Diagram**

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**Appendix D: Use Case Description**

**Use Case Template**

Use Case ID: 1

Use Case Name: Login

Actor: User, Firebase Authentication (Participating Actor)

Description: Existing user login to the system

Preconditions: User should have a registered gmail account in order to login successfully.

Postconditions: The system must brings user into main functionalities of the application and displays ProfileUI

Priority: High

Flow of Events: 1. The user clicks the Login button at LoginUI

2. The system asks the user to fill his/her gmail address

and password 3. The system calls Firebase Authentication to verify

user credentials

4. The system brings user to ProfileUI

Alternative Flows: AF-S4:

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1. If the credential is invalid, , the system displays

“Failed” message 2. The system returns to Step 1

**Use Case Template**

Use Case ID: 2

Use Case Name: ViewNowShowingInfo

Actor: User

Description: User to view detailed information of the now showing movies

Preconditions: The user must have login to the system using the Login use case

Postconditions: The system must display detailed information of the now showing movie depending on user’s choice

Priority: High

Flow of Events: 1. The user clicks the Movie button at bottom

navigation bar 2. The system directs user to NowShowingUI which displays movie posters and titles of Now Showing movies

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3. The user may click on any of the movie posters or

titles to view detailed information of that movie.

4. The system directs user to direct user to the selected movie interface and display detailed information about that movie.

5. The user may click on View Showtimes button to

view showtimes for that movie

6. The system directs user to showtimes page and

display showtimes across different cinemas in Singapore for today and next 4 days

**Use Case Template**

Use Case ID: 3

Use Case Name: ViewUpcomingInfo

Actor: User

Description: User to view information of the upcoming movies

Preconditions: The user must have login to the system using the Login use case

Postconditions: The system must display information of the upcoming movies

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Priority: High

Flow of Events: 1. The user clicks the Upcoming Movie button at bottom navigation bar 2. The system directs user to UpcomingUI which displays movie posters and titles of Upcoming movies 3. The user may click on any of the movie posters or

titles to view detailed information of that movie.

4. The system directs user to direct user to the selected movie interface and display detailed information about that movie.

**Use Case Template**

Use Case ID: 4

Use Case Name: BookMovieTicket

Actor: User

Description: This functionality allows user to book movie tickets from official cinema webpage

Preconditions: This use case extends ViewNowShowingInfo use case. It is invoked whenever the user decides to book movie tickets after viewing the showtimes.

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Postconditions: The system must direct users to the booking page of the official cinema website

Priority: High

Flow of Events: 1. For the selected movie, the system displays detailed

showtimes across different cinemas as described in ViewNowShowingInfo use case. 2. The user may click the book ticket button for his corresponding choice of movie showtime and cinema. 3. The system directs user to the booking page of the

official cinema website depending on the chosen cinema name

Alternative Flows: AF-S3 :

1. If the cinema is GV, the system must direct users to

https://www.gv.com.sg/GVBuyTickets#/ 2. If the cinema is Cathay, the system must direct users to https://www.cathaycineplexes.com.sg/showtimes.asp x 3. If the cinema is Shaw, the system must direct users

to https://shaw.sg/Showtimes/ 4. If the cinema is Filmgarde, the system must direct

users to https://fgcineplex.com.sg/buyticket

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**Use Case Template**

Use Case ID: 5

Use Case Name: SearchMovie

Actor: User

Description: This functionality allows user to do direct search for movies by inputting a movie title

Preconditions: The user must have login to the system using the Login use case

Postconditions: System displays detailed information for the selected movie depending on user’s input

Priority: High

Flow of Events: 1. The user clicks the Search button at bottom

navigation bar

2. The system directs user to SearchUI which displays a

dropdown list of available movie titles and a dropdown list of dates from today to next 4 days

3. The user may choose any movie from the dropdown

list

4. The user may choose any date from the dropdown list

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5. The system directs user to the movie showtime page

and displays showtimes for the selected movie and selected date

Alternative Flows: AF-S5 :

1. If the user chooses movie title only, the system directs

user to the movie details page for the selected movie. The user may proceed to view showtimes by clicking the View Showtimes button. 2. If the user chooses date only, the system should not

direct user to any page.

**Use Case Template**

Use Case ID: 6

Use Case Name: ViewPromotions

Actor: User

Description: This functionality allows user to view the current promotions across different cinemas

Preconditions: The user must have login to the system using the Login use case

Postconditions: System displays all available promotions to user

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Priority: Medium

Flow of Events: 1. The user clicks the Promotions button at bottom

navigation bar 2. The system directs user to PromotionsUI which displays ongoing promotions posters and names 3. The user clicks on any of the promotions

posters/names 4. The system directs user to the selected promotion page and display detailed information for that promotion

**Use Case Template**

Use Case ID: 7

Use Case Name: ViewAccountProfile

Actor: User

Description: This functionality allows user to view his/her profile details based on the gmail account used for login.

Preconditions: The user must have login to the system using the Login use case

Postconditions: System displays user profile details extracted from gmail account used for login

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Priority: High

Flow of Events: 1. The user clicks the Profile button at bottom

navigation bar

2. The system directs user to ProfileUI which displays his/her profile details extracted from gmail account used for login

**Use Case Template**

Use Case ID: 8

Use Case Name: ViewSupport

Actor: User

Description: This functionality allows user to view help/support regarding how to use the app

Preconditions: The user must have login to the system using the Login use case

Postconditions: System displays help/support information to user

Priority: Medium

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Flow of Events: 1. User clicks the View Support button at the ProfileUI

2. System directs user to SupportUI which displays lists

of frequently asked questions about using the application

3. User may click on any of the questions inside the list

4. The system expands the list and displays answer to

the selected question

**Use Case Template**

Use Case ID: 9

Use Case Name: GiveAppReview

Actor: User, Firebase Realtime Database (Participating Actor)

Description: This functionality allows user to give ratings for the application

Preconditions: This use case extends ViewSupport use case. It is invoked whenever the user decides to give rating for the application inside SupportUI.

Postconditions: System displays confirmation message that rating is submitted

Priority: Low

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Flow of Events: 1. User gives rating by clicking the stars scale button (scale 1-5) in SupportUI 2. The system displays acknowledgement message

indicating the rating that the user has just inputted 3. The user clicks the submit button 4. The system displays confirmation message that rating

is submitted and directs user back to ProfileUI 5. The system stores ratings in Firebase Realtime

Database

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**Appendix E: Class Diagram**

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**Appendix F: Sequence Diagram**

**a. Login**

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**b. ViewNowShowingInfo**

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**c. ViewUpcomingInfo**

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**d. BookMovieTicket**

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**e. SearchMovie**

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**f. ViewPromotions**

**g. ViewAccountProfile**

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**h. ViewSupport**

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**i. GiveAppReview**

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**Appendix G: System Architecture**

**Appendix H: Dialog Map**

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**Appendix I: Test Cases**

**a. Black Box Testing**

**Test Case ID: 001**

**Test Priority (Low/Medium/High):** High

**Test Title:** Login

**Description:** To test login authentication

**Pre-Conditions:** -

**Step**

**Test Steps Test Data Expected Results Actual Results**

**Status (Pass/Fail) Notes**

**Status (Pass/Fail) Notes**

1

Upon Sign In button is clicked, Firebase Authentication is activated and the user is prompted to enter his gmail address and password

Upon Sign In button is clicked,

User clicks Sign In button at Login UI

User clicks Sign In button at Login UI

Firebase Authentication is activated and the user is prompted to enter his gmail address and password

Firebase Authentication is activated and the user is prompted to enter his gmail address and password

Firebase Authentication is activated and the user is prompted to enter his gmail address and password

Pass

Pass

Pass

Pass

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2a

User input his gmail address and password

Firebase

Firebase authentication is successful and user is directed to Profile UI inside Catch Movie App Valid gmail address and valid password

authentication is successful and user is directed to Profile UI inside Catch Movie App

Pass

2b

User input his gmail address and password

Invalid gmail address and valid password

Firebase authentication is not successful and displays error message

Firebase authentication is not successful and displays error message

Pass

2c

User input his gmail address and password

Invalid gmail address and invalid password

Firebase authentication is not successful and displays error message

Firebase authentication is not successful and displays error message

Pass

2d

User input his gmail address and password

Valid gmail address and invalid password

Firebase authentication is not successful and displays error message

Firebase authentication is not successful and displays error message

Pass

**Post-conditions:**

User is directed to Profile UI inside Catch Movie App upon successful login

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**Test Case ID: 002**

**Test Priority (Low/Medium/High):** High

**Test Title: Now Showing Movies**

**Description:** To test listing of now showing movies

**Pre-Conditions:** User must be login, user must be in the main menu

**Step Test Steps**

**Test Data Expected Results Actual Results**

**Status (Pass/Fail) Notes**

1

Upon User clicks on Movie logo on bottom navigation

Upon clicking on the Movie tab, a list of now showing movies will be shown. The list contains an image of the movie and the movie title.

clicking on the Movie tab, a list of now showing movies will be shown. The list contains an image of the movie and the movie title.

Pass

**Post-conditions:**

-

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**Test Case ID: 003**

**Test Priority (Low/Medium/High):** High

**Test Title: Upcoming Movies**

**Description:** To test listing of upcoming movies

**Pre-Conditions:** User must be login, user must be in the main menu

**Step Test Steps**

**Test Data Expected Results Actual Results**

**Status (Pass/Fail) Notes**

1

Upon clicking on the Movie tab, a list of now showing movies will be shown. The list contains an image of the movie and the movie title.

Upon clicking on the Movie tab, a list User clicks on

of now showing Movie logo on

movies will be bottom

shown. The list navigation

contains an image of the movie and the movie title.

Pass

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2

Upon selecting upcoming movies, the list will change from Now Showing movies to Up coming movies. The list will contains an image of the movie and the movie title.

Upon selecting

User clicks on the drop down menu at the top of the page and selects upcoming movies

User clicks on the drop down menu at the top of the page and selects upcoming movies

upcoming movies, the list will change from Now Showing movies to Up coming movies. The list will contains an image of the movie and the movie title.

upcoming movies, the list will change from Now Showing movies to Up coming movies. The list will contains an image of the movie and the movie title.

upcoming movies, the list will change from Now Showing movies to Up coming movies. The list will contains an image of the movie and the movie title.

Pass

Pass

Pass

Pass

**Post-conditions:**

-

**Test Case ID: 004**

**Test Priority (Low/Medium/High):** High

**Test Title: Movie Details**

**Description:** To test movie details of a specific movie

**Pre-Conditions:** User must be login, user must be in the main menu

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**Step Test Steps**

**Test Data Expected Results Actual Results**

**Status (Pass/Fail) Notes**

1

Upon clicking on the Movie tab, a list of now showing movies will be shown. The list contains an image of the movie and the movie title.

Upon clicking on the Movie tab, a list User clicks on

of now showing Movie logo on

movies will be bottom

shown. The list navigation

contains an image of the movie and the movie title.

Pass

2

Upon clicking on Upon the movie, more movie details of the

clicking on the movie, more movie details of the

User clicks on a movie from the list, for example, “Maleficient”

movie will be shown such as language, synopsis, director and cast. There will be a “VIEW SHOW TIMES” button at the bottom of the page for user to click.

movie will be shown such as language, synopsis, director and cast. There will be a “VIEW SHOW TIMES” button at the bottom of the page for user to click.

Pass

**Post-conditions:**

-

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**Test Case ID: 005**

**Test Priority (Low/Medium/High):** High

**Test Title: Movie Show Time**

**Description:** To test movie show time of a specific movie

**Pre-Conditions:** User must be login, user must be in the main menu

**Step**

**Test Steps**

**Test Data Expected Results Actual Results**

**Status (Pass/**

**Notes Fail)**

1

User clicks on Movie logo on bottom navigation

Upon clicking on the Movie tab, a list of now showing movies will be shown. The list contains an image of the movie and the movie title.

Upon clicking on the Movie tab, a list of now showing movies will be shown. The list contains an image of the movie and the movie title.

Pass

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2

Upon clicking on the movie, more movie details of the movie will be shown such as language, synopsis, director and cast. There will be a “view show time” button at the bottom of the page for user to click.

Upon clicking on the User

movie, more movie clicks on

details of the movie a movie

will be shown such as from the

language, synopsis, list, for

director and cast. example,

There will be a “VIEW “Maleficie

SHOW TIMES” button nt”

at the bottom of the page for user to click.

Pass

3

User will be able to click on the buttons to view differnt showtime for respective dates

4

User Upon clicks on view show time button at the bottom of the page

clicking on the button, a list of showtime will displayed with the cinema name it will be playing at. There will be buttons on the top indicating the different dates the movie is playing.

Upon clicking on the button, a list of showtime will displayed. With buttons on the top indicating the different dates the movie is playing.

Pass

User clicks on a particular showtime for example “GV Suntec 4:20 PM”

Upon clicking, user will be redirected to the repective cinema booking page. In this case, GV booking page, https://www.gv.com.sg/ GVBuyTickets#/

Upon clicking, user will be redirected to the repective cinema booking page. In this case, GV booking page, https://www.gv.com.s g/GVBuyTickets#/

Pass

**Post-conditions:**

-

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**Test Case ID: 006**

**Test Priority (Low/Medium/High):** Medium

**Test Title:** Search by Search Movie

**Description:** To test search function when user will select just the movie

**Pre-Conditions:** User must be login, user must be in the main menu

**Step Test Steps**

**Test Data Expected Results Actual Results**

**Status (Pass/Fail) Notes**

1

Upon clicking on the Search tab, three buttons display on the screen: Search Movie, Search Date and Search.

Upon clicking on User clicks

the Search tab, on Search

three buttons logo on

display on the bottom

screen: Search navigation

Movie, Search Date and Search..

Pass

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2

Upon User clicks on Search Movie Button

Upon clicking on the Search Movie Button, application displays list of movies which are currently showing.

clicking on the Search Movie Button, application displays list of movies which are currently showing.

Pass

3

User chooses the movie from the list, for example “Joker”

Upon clicking on element of the list, the Search Movie button changes name to the movie name of chosen movie and hide the list .

Upon clicking on element of the list, the Search Movie button changes name to the movie name of chosen movie and hide the list.

Pass

4

Upon User clicks on Search Button

Upon clicking on the Search Button, application redirects to movie description of the movie.

clicking on the Search Button, application redirects to movie description of the movie

Pass

**Post-conditions:**

User is directed to movie description of chosen movie.

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**Test Case ID: 007**

**Test Priority (Low/Medium/High):** Medium

**Test Title:** Search by Search Movie and Search Date

**Description:** To test search function when user will select both the movie and the date

**Pre-Conditions:** User must be login, user must be in the main menu

**Step Test Steps**

**Test Data Expected Results Actual Results**

**Status (Pass/Fail) Notes**

1

User clicks on Search logo on bottom navigation

Upon clicking on the Search tab, three buttons display on the screen: Search Movie, Search Date and Search.

Upon clicking on the Search tab, three buttons display on the screen: Search Movie, Search Date and Search..

Pass

2

Upon User clicks on Search Movie Button

Upon clicking on the Search Movie Button, application displays list of movies which are currently showing.

clicking on the Search Movie Button, application displays list of movies which are currently showing.

Pass

3

User chooses the movie from the list, for example “Joker”

Upon clicking on element of the list, the Search Movie button changes name to the movie name of chosen movie and hide the list .

Upon clicking on element of the list, the Search Movie button changes name to the movie name of chosen

Pass

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movie and hide the list.

4

Upon clicking on the Search Date Button, application displays list of dates from current day till four days.

Upon clicking on

User clicks on Search Date Button

User clicks on Search Date Button

the Search Date Button, application displays list of dates from current day till four days.

the Search Date Button, application displays list of dates from current day till four days.

the Search Date Button, application displays list of dates from current day till four days.

Pass

Pass

Pass

Pass

5

User chooses the date from the list, for example “Thu 14 Nov”

Upon clicking on element of the list, the Search Date button changes name to the date’s name of chosen date and hide the list.

Upon clicking on element of the list, the Search Date button changes name to the date’s name of chosen date and hide the list.

Upon clicking on element of the list, the Search Date button changes name to the date’s name of chosen date and hide the list.

Upon clicking on element of the list, the Search Date button changes name to the date’s name of chosen date and hide the list.

Upon clicking on element of the list, the Search Date button changes name to the date’s name of chosen date and hide the list.

Pass

Pass

Pass

Pass

6

User clicks on Search Button

Upon clicking on the Search Button, application redirects to movie showtime on chosen date of chosen movie.

Upon clicking on the Search Button, application redirects to movie showtime on chosen date of chosen movie.

Upon clicking on the Search Button, application redirects to movie showtime on chosen date of chosen movie.

Upon clicking on the Search Button, application redirects to movie showtime on chosen date of chosen movie.

Upon clicking on the Search Button, application redirects to movie showtime on chosen date of chosen movie.

Pass

Pass

Pass

Pass

**Post-conditions:**

User is directed to Movie Showtime of chosen date of chosen movie.

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**Test Case ID: 008**

**Test Priority (Low/Medium/High):** High

**Test Title:** Give Rating

**Description:** To test rating submission in Firebase Realtime Database

**Pre-Conditions:** User must be login, user must be in the Support UI

**Steps**

**Test Steps**

**Test Data Expected Results Actual Results**

**Status (Pass/Fail) Notes**

1

User clicks the star scale at Support UI

Upon clicking star scale, the app displays a message indicating the rating value that the user just inputted

Upon clicking star scale, the app displays a message indicating the rating value that the user just inputted

Pass

2

Rating is stored at User

Firebase Realtime clicks the

Database. A new Submit

entry is created if the Rating

user had never button

submitted any rating before. The entry is updated if the user

Rating is stored at Firebase Realtime Database. A new entry is created if this was the first rating submission. The entry is updated if the

Pass

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had submitted rating previously.

user had submitted rating previously.

**Post-conditions:** User is directed to Profile UI after rating submission

**Test Case ID: 009**

**Test Priority (Low/Medium/High):** High

**Test Title:** View Support

**Description:** To test viewing FAQ

**Pre-Conditions:** User must be login, user must be in the Profile UI

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**Steps Test Steps**

**Test Data Expected Results Actual Results**

**Status (Pass/Fail) Notes**

**Status (Pass/Fail) Notes**

1

User clicks the View Support button

The app directs user to Support UI and displays lists of questions

The app directs user to Support UI and displays lists of questions

The app directs user to Support UI and display lists of questions

The app directs user to Support UI and display lists of questions

The app directs user to Support UI and display lists of questions

Pass

Pass

Pass

Pass

2

User clicks on the question

The app displays answers to the selected question

The app displays answers to the selected question

The app displays answers to the selected question

The app displays answers to the selected question

The app displays answers to the selected question

Pass

Pass

Pass

Pass

**Post-conditions:**

-

**Test Case ID: 010**

**Test Priority (Low/Medium/High):** High

**Test Title: Promotions**

**Description:** To test listing of now movie promotions

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**Pre-Conditions:** User must be logged in; user must be in the main menu page

**Step Test Steps**

**Test Data Expected Results Actual Results**

**Status (Pass/Fail) Notes**

1

User clicks on Promotion logo on bottom navigation

Upon Promotion Upon logo is clicked, the promotion page loads, showing lists of promotions within different categories of promotions.

Promotion logo is clicked, the promotion page loads, showing lists of promotions within different categories of promotions.

Pass

**Post-conditions:**

-

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**Test Case ID: 011**

**Test Priority (Low/Medium/High):** High

**Test Title: On Click Promotions**

**Description:** To test the display if promotions on click

**Pre-Conditions:** User must be logged in; user must be in the promotion page

**Step Test Steps**

**Test Data Expected Results Actual Results**

**Status (Pass/Fail) Notes**

**Status (Pass/Fail) Notes**

1

Upon scrolling vertically, different categories of promotions are shown to the user as the user scrolls down in the order of “All Current”, “Discounts”, “Movie Perks”, ”Food and Beverages”, and “Partnerships”.

Upon scrolling vertically, different categories of promotions are

User scrolls vertically on the page

User scrolls vertically on the page

shown to the user as the user scrolls down in the order of “All Current”, “Discounts”, “Movie Perks”, ”Food and Beverages”, and “Partnerships”.

shown to the user as the user scrolls down in the order of “All Current”, “Discounts”, “Movie Perks”, ”Food and Beverages”, and “Partnerships”.

shown to the user as the user scrolls down in the order of “All Current”, “Discounts”, “Movie Perks”, ”Food and Beverages”, and “Partnerships”.

Pass

Pass

Pass

Pass

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2

Upon scrolling horizontally, thumbnails and names of different promotions in each category is shown to the user

Upon scrolling User scrolls

horizontally, horizontally

thumbnails and along a

names of different category of

promotions in each promotions

category is shown to the user

Pass

3

User clicks on promotion in promotion list

Upon clicking on Upon promotion, a page pops up and displays the chosen promotion’s image, name, and description.

clicking on promotion, a page pops up and displays the chosen promotion’s image, name, and description.

Pass

**Post-conditions:**

-

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**b. White Box Testing**

**Login**

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**Search Movie**