U-Cater Apps for UPSI Citizens

Software Requirements Specification

Version 3.0

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Mohamad Zulhelmi Bin Mohd Zaini

Lead Software Engineer

Team Members:

Wan Muhammad Syafiq Bin Roslan

Bah Anastasha Kirana A/L Atan

Muhammad Redzuan Bin Musa

Muhammad Fitri Bin Nasrudin

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Lecturer: Dr. Azniah Ismail

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Revision History

Date	Description	Author	Comments
12/12/17	Version 1.0	Mohamad Zulhelmi B. Mohd Zaini	Adding more functional requirements
14/12/17	Version 2.0	Mohamad Zulhelmi B. Mohd Zaini	Improvise use case and logical database

Document Approval

The following Software Requirements Specification has been accepted and approved by the following:

Signature	Printed Name	Title	Date
	Mohamad Zuhelmi B. Mohd Zaini	Lead Software Eng.	15/12/2017
	Dr. Azniah Ismail	Lecturer, MES3023	

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1.0 INTRODUCTION

The U-Cater Application is a system that aims to connect UPSI with the Muallim community. U-Cater Application is one of the efforts to connect the Muallim community with UPSI. Overall, this system basically is an application that uses smartphone platforms that can combines organizer of the events (UPSI student's or staff's) and community in Tanjung Malim only. With this app, it is hoped that the UPSI and the Muallim community will be able to connect Muallim to make the district of Muallim a respected district.

1.1 Purpose

This document contains Software Requirement Specification (SRS) for the U-Cater Application (UCA). This SRS document provides an overview of the entire SRS with purpose, scope, definitions, acronyms, abbreviations, references and overview of the SRS. The purpose of this document is to provide an explanation of the software to be built in the form of a general overview as well as detailed and comprehensive explanations. Besides,this document is to is to collect and analyze all assorted ideas that have come up to define the application, its requirements with respect to stakeholders. Moreover, it also explain on the capabilities required by stakeholders and their needs while defining high-level features. This document will be used as a reference in the development process and as an evaluation material during the software development process . With this SRS document, it is expected that the software

development will be more focused and will not generate ambiguity, especially for the development team.

1.2 Scope

The U-Cater Application is a system that can connecting food sellers around the Tanjung Malim with event organizers in an event. Food sellers who wish to use this application must first be registered with UPSI management to know the terms and ethics after they can use this application. This system focused on the organizer of the event and the food seller that are only been registered with UPSI's management. In general, this software is used when there's are an event or program, the organizer does not have to search for food sellers out there but the food seller who scramble to find them. The organizers do not have to go from another stall to another to ask about food prices according to the budget provided. The objective of establishing an online application include:

- Enabling program organizers to choose the best food sellers around Tanjung Malim which according to their own standards.
- Allows food sellers to choose which events they want to join and make requests to participate in the event

1.3 Glossary

Term	Definition
UCA	Abbreviation for U-Cater Application.
Sprint	The basic unit of development in Scrum. It is a timeboxed effort; that is, it is restricted to a specific duration.
Scrum	Is one of the methodologies in software engineering process

Table 1.3: Glossary for Term and Definition

1.4 References

IEEE. *IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications.* IEEE Computer Society, 1998.

Aaina, Atika, Chin Keat, Syahirah & Syamieza (2016). 'Track It Right' Management System Report, MES 3023, Sem 1 16/17. Unpublished.

Wan , Zulhelmi, Anastaha, Redzuan & Fitri (2017). Fieldwork to Development Application U-Cater,MES 3023, Sem 1 17/18 .Unpublished

1.5 Overview of Documents

This document outlines four chapters which is the introduction, the general desription, specific requirements and the analysis models. The introduction part has been stated in page **1** . The next chapter, which is the general description is about the perspective of the product, the summary of the funtionality that U-Cater Application can perform, the general characteristics of the eventual users of the product,the limitation of the product and the assumptions and dependencies used in the development of U-Cater Application.

The third chapter will discuss about the specific requirements. It describes the external internal requirments. The functionality of the application which is included the use case diagram for every stakeholders with their functionality and also the object of the whole application. The non-functional requirement,inverse requirements,design contraints and logical database requirements is also stated in this chapter. The last chapter discuss about the analysis models which include activity diagram and the class diagram of the application.

2. GENERAL DESCRIPTION

This event at UPSI is very inseparable. it can be said that almost every day there is an event because UPSI is a very active university in organizing events, regardless of events involving UPSI or outside parties. There are almost more than twenty organizations in UPSI and not to mention the events organized by UPSI's staff. we can say that almost every month there will be events that they are doing. It is certain that if an event is to be held, it is necessary to allocate some food so that it can attract more participants to participate in the event. Usually, the organizers will have trouble finding food sellers, they will have to ask from one stall to another to find out the food price offered according to the budget of the organizer. Besides, there is also a food sellers who canceled at the last minute before the event took place and it will inconvenience the event organizers. With this application, there is no problem for organizers looking for food sellers. Of course, many food sellers will scramble to offer their package and food prices to participate in the event. The organizers just need to choose any food sellers who have made a request to participate in the event.

2.1 Product Perspective

The U-Cater Application is a system that allows organizers to select the best food sellers and use their services in the event. The organizer must register before using the application. After registering, the organizer must login to make an announcement about the event to be performed and the annoucement will be deleted after the event was held. In addition, organizers can also view the list of food sellers's

requests to participate in the event. Then, the organizer will choose the best food seller and use their services for the event. For the food seller parts, after the announcement is made, the food sellers will be notified via popup notification from this application . The food sellers can view the announcement and make a request from the announcement to offer their meals to the event with the price they want. This project will be integrated into mobile application so that the user of this can use this application wherever they are as they have the smartphone.

2.1.1 Development Methodology

For developing the project, our team have planned to use Scrum which is an agile software development methodology. Scrum is an iterative approach that have aggresive deadlines so that we can communicate in our team members to know the project's journey from time to time. There are three important core roles in the process which is the product owner,scrum master and scrum team. Along the way, the Scrum Master keeps the team focused on its goal. Using this methodology, we can see the journey of this project to run in a timely manner or not. Besides, scrum teams use inspection throughout an agile project to ensure that the team meets the goals of each part of the process.With daily meetings make it possible to measure individual productivity. This leads to the improvement in the productivity of our team members. Issues are identified well in advance through the daily meetings and hence can be resolved in speedilyThe core of this methodology is a sprints. In scrum, our work is divided into sprints which should be completed within a certain period of time. There are some advantages of Scrum. First advantage is that it is easier to cope with changes because of short sprints and constant feedback. Another advantage is problems can be

handled swiftly due to morning meetings. Also, it makes it possible to create quality products in scheduled time.

2.2 Product Functions

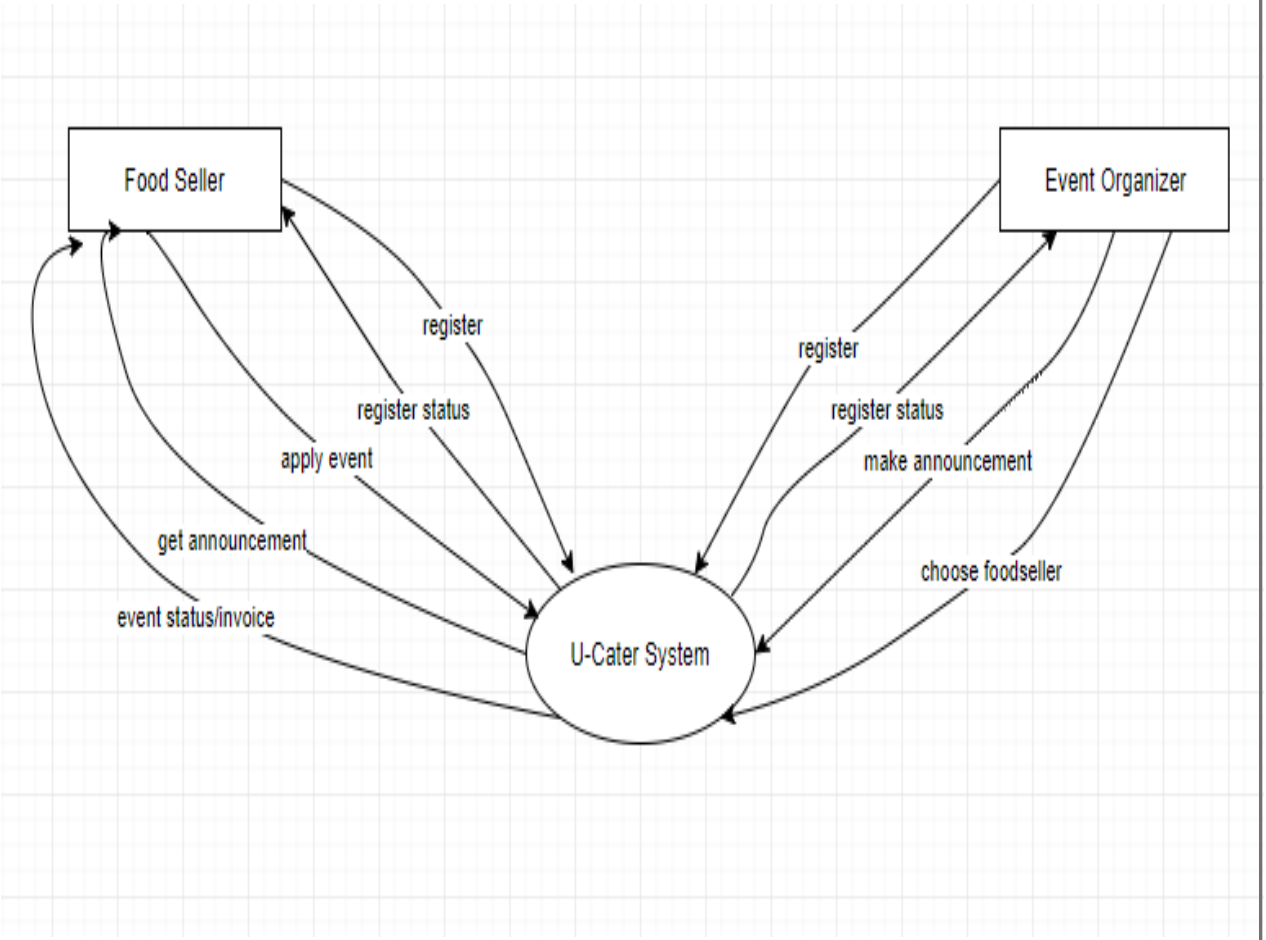


Figure 2.2 : Context Diagram for U-Cater Application.

2.2.1 Make Announcement

An important function in this application is the function of making announcements. For this announcement function,the organizer must login using id and password that have been given by the administrator to use this application. After the announcement made by event organizer, the food sellers will automatically get an popup notification from this application about the announcement that has been made. In the short message will specify the information about the upcoming event theme, the estimates of participants of the event, the date and time of the event will take place.

2.2.2 Apply Event

Food sellers who wish to deal with their service offering must be registered with UPSI management first. This application will link with the management of UPSI to obtain the information of the food sellers. After the announcement made by the organizer, the food sellers will get the notification about the event to be held. In the function of applying this event, food traders will apply to offer their services. In this function, there there will be requested the price offered by food traders.

2.2.3 Choose Event

After the dateline of the application, the event organizer will select any of the food sellers who have applied. The organizer of the event will choose probably in terms of price or reviews from the public

2.3 User Characteristic

2.3.1 Member Users

Administrator

Person who organises any event that require a banquet and have the highest permission to access all the menu include accept and reject offers from food seller.

Food seller

The person who offers his food price to the event organiser in the application and his offer will be accepted or rejected by the organiser.

2.3.2 User Classes

Actor	Label	Description
Organiser	Event organiser	This user manages all of the U-Cater Application by login the system, create, delete, edit, and publish the location of their event, and search the food seller information.
Food seller	Food seller	This user register in the U-Cater Application by enter the particular information needed, and view the location of the event.
Administrator	Admin	The administrator may receive feedback from users about the application through email.Besides, it also provide maintenance for the application.

Table 2.3.2 : User Classes Description

2.3.3 Uses Access Level

	Actor / Use Case	Organiser	Food seller
Event details	Add	✓	
	Edit	✓	
	Delete	✓	
	Search		✓
Location of the particular event	Create	✓	
	Edit	✓	
	Delete	✓	
	Publish	✓	
	View		✓
Food seller	Track	✓	
ID	Login	✓	✓
Administrator	Contact	✓	✓

Table 2.3.3 : User Access Levels of "U-Cater" Application

2.4 General Constraints

This subsection of the SRS provides a general description of any other items that will limit the developer's options for designing the application. Using this application is fairly simple and intuitive. A user familiar with basic browser navigation skills should be able to understand all functionality provided by the application. This include :

a. Hardware limitations – Requires Android version 4.4 or later and also requires iOS 5.0 or later. The application need internet access to browse the application system.
b. Higher-order language requirements – some food seller did not understand English because the application language is in English.
c. Criticality of the application – the application is limited by its operating server in terms of the maximum number of users it can support at a given time.
d. Safety and security considerations – organiser might forget their ID and password. As well food seller who might be forget their user name and password.

2.5 Assumption and Dependencies

Assumptions and dependences in the application are :

i. Each food seller must have their own user name and password.
ii. Organizer use their student or staff ID and password to log in.
iii. Internet connection is necessary.

3. Specific Requirements

In this section, we use software UMLET for make use case diagram and MySQL software to make logical database.

3.1 External Interface Requirements

This section describes the interface requirements for the 'U-Cater' Application. They specify the way the user shall interact with the application as well as define the necessary hardware interfaces required by the software to store and retrieve data.

3.1.1 User Interfaces

The primary design constraint is the mobile platform. Since the application is designated for mobile handsets, limited screen size and resolution will be a major design consideration. Creating a user interface which is both effective and easily navigable will pose a difficult challenge. Other constraints such as limited memory and processing power are also worth considering. U-Cater is meant to be quick and responsive, even when dealing with large groups, so each feature must be designed and implemented with efficiency in mind.

3.1.1.1 Interface of U-Cater Main Menu

Figure 1 : Main Menu page

3.1.1.2 Interface for Organiser U-Cater Application

Figure 2 : Interface for login.

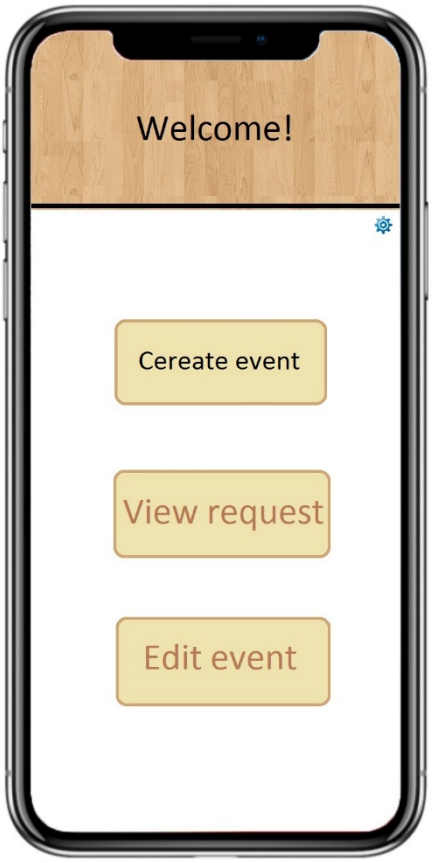


Figure 3 : Interface for organiser to create, view or edit event.

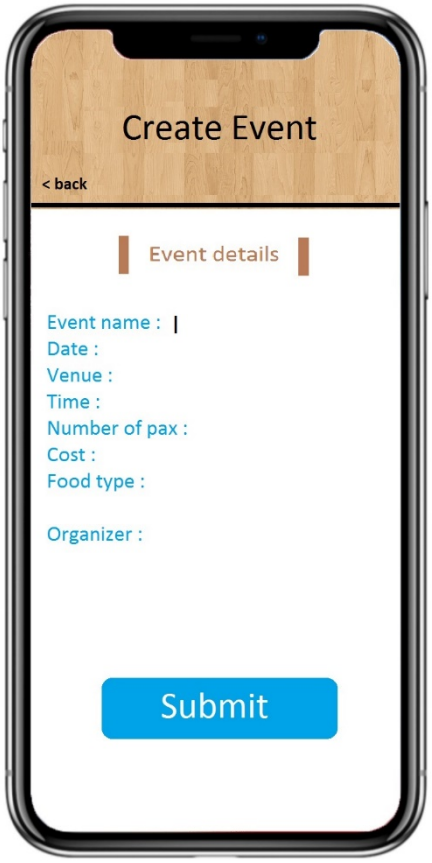


Figure 4 : Create event interface.

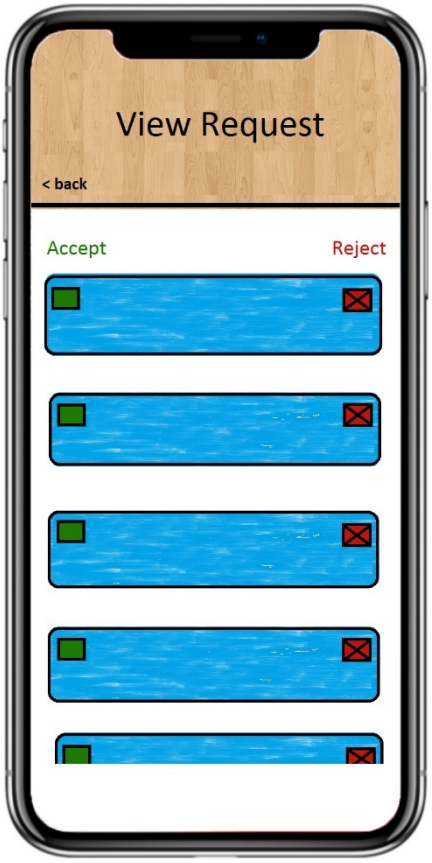


Figure 5 : View request interface.

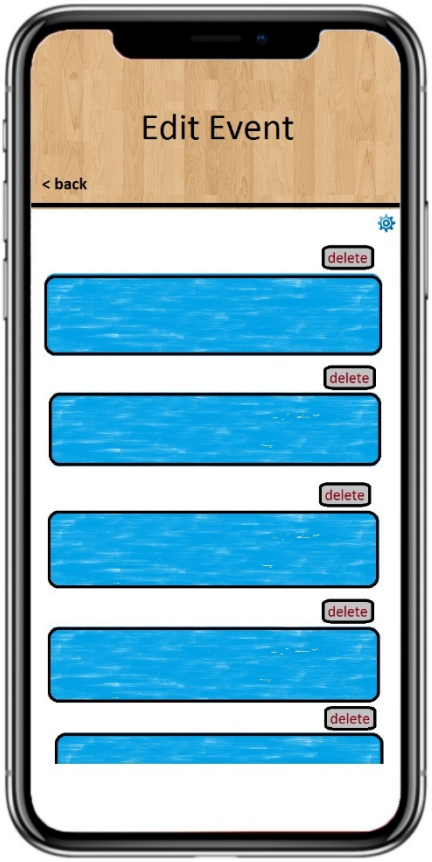


Figure 6 : Edit event interface.

3.1.1.3 Interface for Food Seller U-Cater Application

Figure 7 : Screen for food seller login.

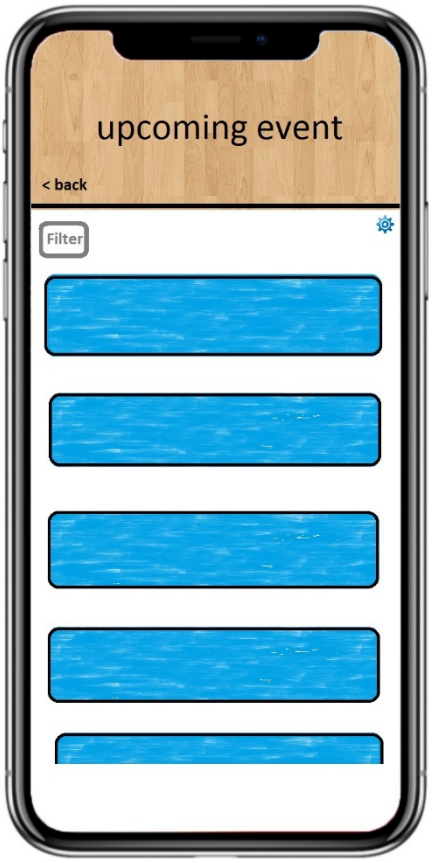


Figure 8 : Food seller interface for upcoming event.

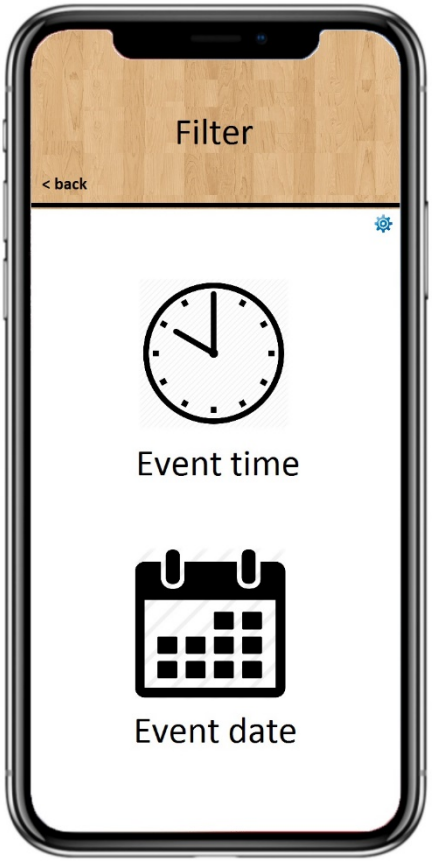


Figure 9 : Filter function.

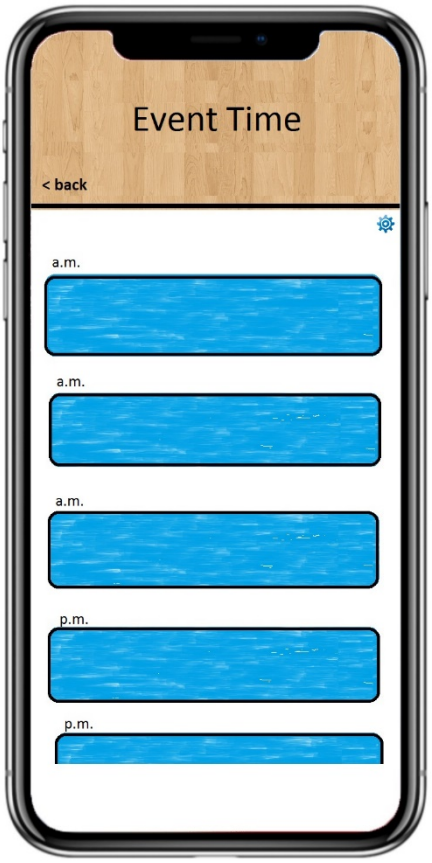


Figure 10 : Filter for event time.

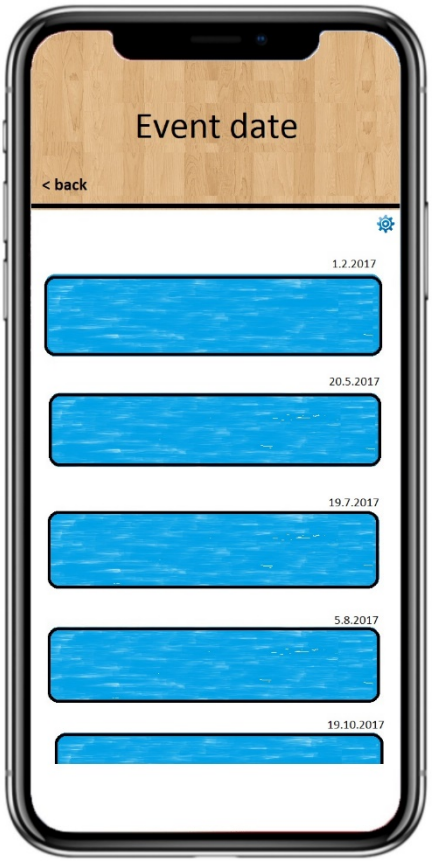


Figure 11 : Filter for event date.

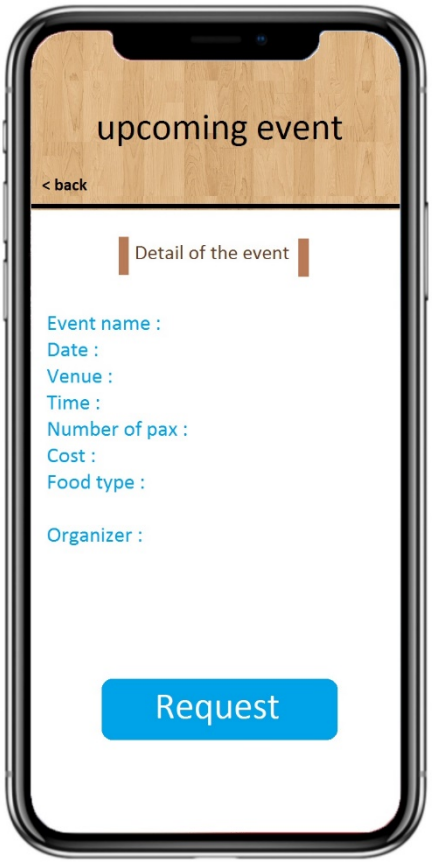


Figure 12 : Screen for view event details.

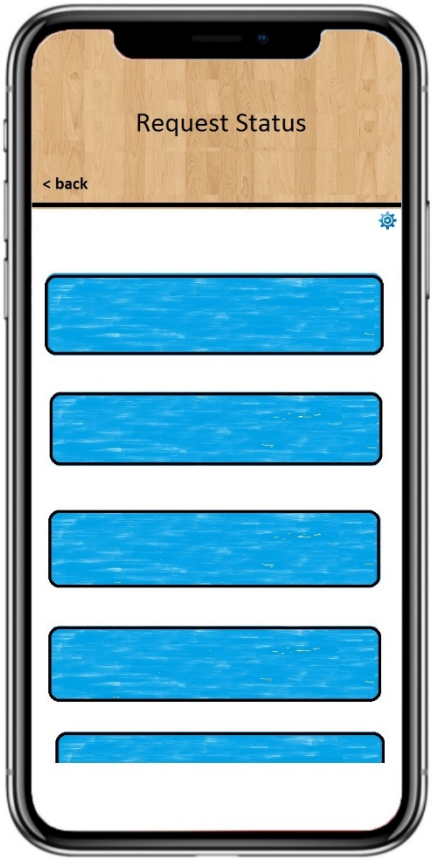


Figure 13 : Interface for request status.

3.1.1.4 Interface for Administrator U-Cater System

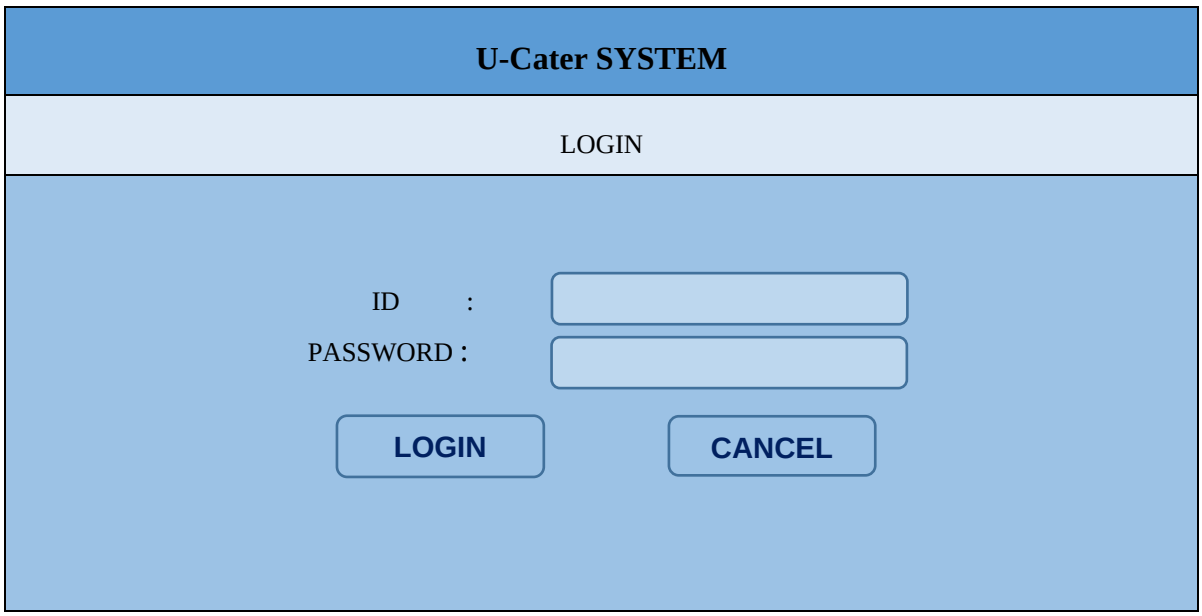


Figure 14 : Screen for login

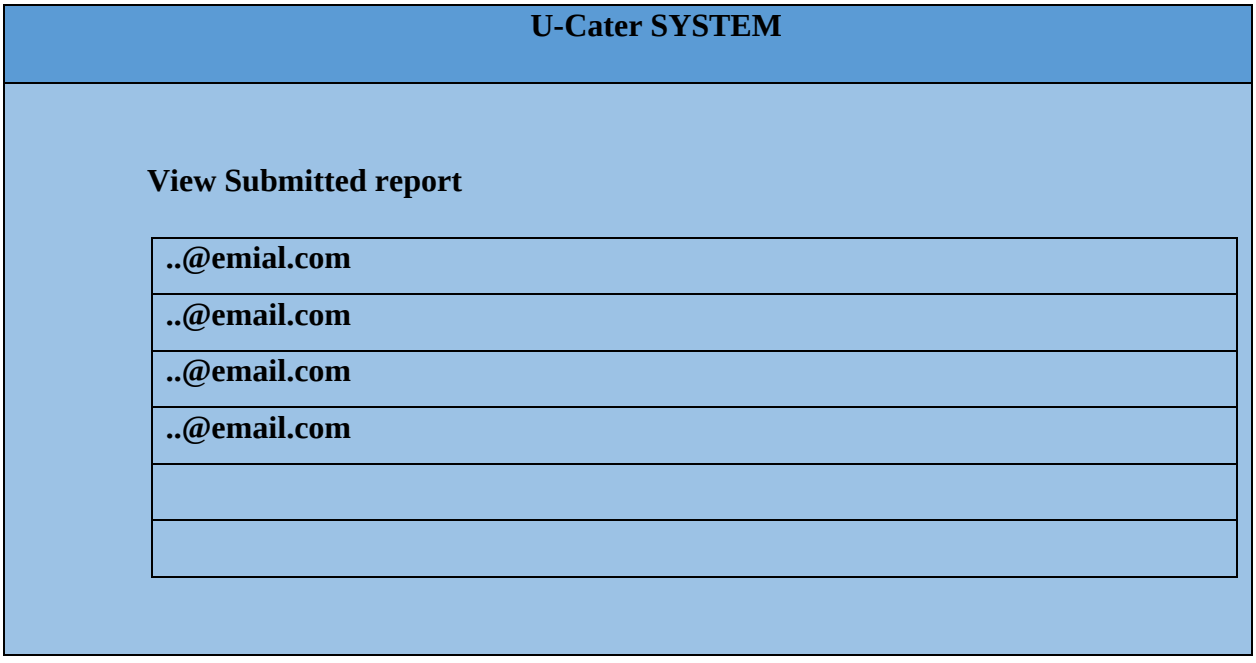


Figure 15 : Screen view report.

3.1.1.5 Interface for setting function in U-Cater Application

Figure 16 : Setting icon.

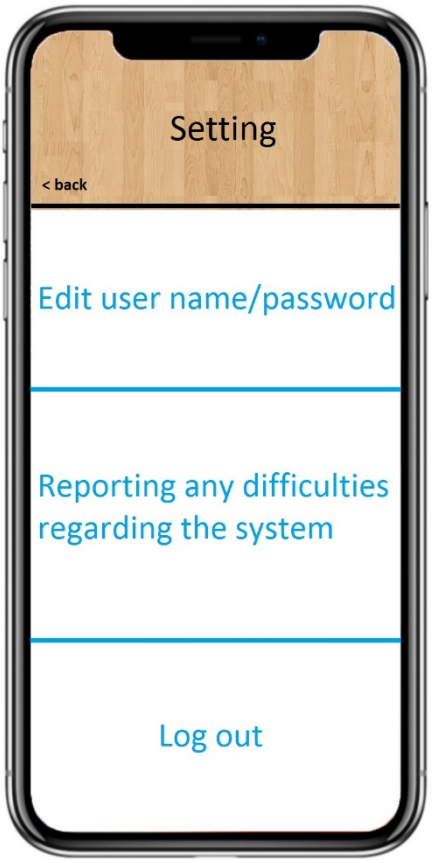


Figure 17 : Setting interface.

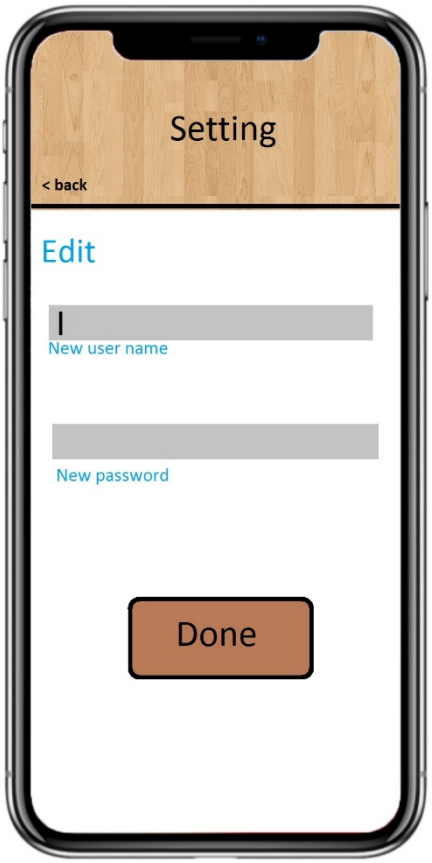


Figure 18 : Edit username and password interface.

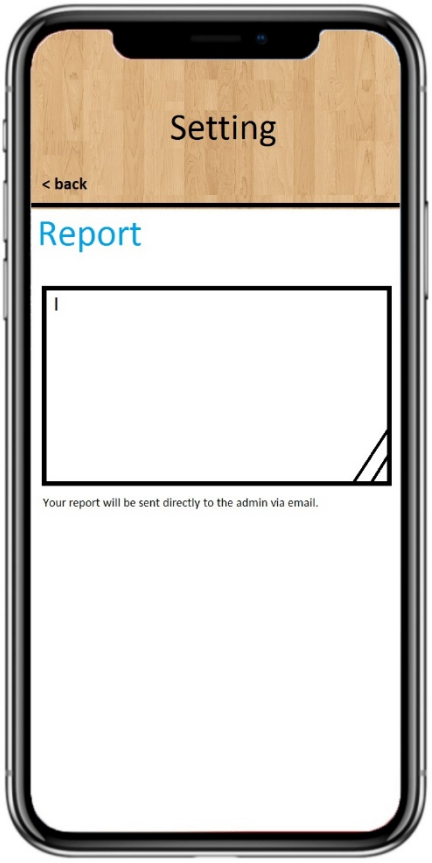


Figure 19 : Report interface.

3.1.2 Hardware Interfaces

U-Cater Application is intended as a mobile application for the Android / iOS platform and hence is solely supported on Android-powered devices. U-Cater Application is being developed specifically for Android 4.4 and iOS 5.0 and all versions released after it. The platform supports push messages that will be used to synchronize data between the local application and the main application server. Information will be sent using TCP/IP and the HTTP protocol.The platform provides abstractions for all network communication interfaces and thus the hardware as well.

3.1.3 Software Interfaces

The U-Cater Application is to be developed under the Android operating systems using the Java JDK (Java Development Kit) and the Android SDK (software development kit) tools. For iOS operating system is to be developed using the iOS SDK which is a software development kit developed by Apple Inc.

3.1.4 Communication Interfaces

The U-Cater Application a will have a network server that is web-based and created using the PHP (Hypertext Processing) language. The product also calls for a database system that stores information and history between the user of this application. The U-Cater Application shall use the HTTP protocol for communication over the internet and for the intranet communication will be through TCP/IP protocol suite.

3.2 Functional Requirements

The official definition of ‘a functional requirement’ is that it essentially specifies something the application should do. Typically, functional requirements will specify a behaviour or function

This information is used to help the reader understand why the requirement is needed, and to track the requirement through the development of the application. In some cases a requirements analyst generates use cases after gathering and validating a set of functional requirements. The hierarchy of functional requirements is: user/stakeholder request → feature → use case → business rule. Each use case illustrates behavioral scenarios through one or more functional requirements. Often, though, an analyst will begin by eliciting a set of use cases, from which the analyst can derive the functional requirements that must be implemented to allow a user to perform each use case. The functional requirements for the U-Cater Application is:

- Request Event
- Login ID (food seller)
- Upload/Create Event
- Delete Event
- Choose Food Seller
- Login ID (organizer)
- Edit Event

3.2.1 Request Event

The food sellers can choose or request the event that was announce from the organizer.To choose the event, the food seller must tap the “Upcoming Event” at the homepage of the application interface. So, the application will be display the details of the event and then, they can choose the event based on their requirement. In the request event, food seller must not request more than 2 event on the same date. The food seller also cannot request more than 1 event on the same time.

3.2.2 Filter Event

The food seller who want to request the event at the time or date the they want, they can use the filter event function. To use this function, the food seller must enter the “Upcoming Event” at the hompage of the application. And the it will display the event. At the right of the “Upcoming Event” page, the filter event is shown. The food seller can tap at it and choose available filter and their desired time and date. The application will display the event base on the chosen filter.

3.2.3 Login Id (Food Seller)

To login into the U-Cater Application, the food seller must registered before login. Food sellers who wish to deal with their service offering must be registered with UPSI management first. This application will link with the management of UPSI to obtain the information of the food sellers. The food sellers must give IC, phone number, address, email, business license and password to the UPSI management. After registered, the food sellers can login into U-Cater application using ID and password.

3.2.4 Upload/Create Event

For upload the event function, the organizer must upload the event into the U- Cater Application. So, it can viewed on the homepage of the software by the food sellers to request the event. The organizer must login to create the event. For the organizer, they must choose the upload event button and wait for 0.3 seconds for the application to display a blank form built in the app. The organizer need to fill in the details in the form such as name of the event, date, time, cost, type of food etc. and then upload it.

3.2.5 Delete Event

For the delete event function, the organizer must login into the U-Cater Application before the event can be deleted. In the homepage, the organizer click at the event that already been upload. The organizer choose to the delete the event. The application will ask for the reconfirmation and the organizer will delete the event. After that, the application will notify the food sellers who has request the event that it is cancelled.

3.2.6 Choose Food Seller

The food sellers that was requested the event, only one that can be chosen by the organizer. The organizer will choose the food seller that request the event by look at the requirement of the food sellers such as stars that was given by another user (organizer), the price (the lower the price, the highest it will be accepted) and etc. So, the remaining of the food sellers that request the event will be declined.

3.2.7 Login Id (Organizer)

Before the organizer to login into the U-Cater app, they must register first. In the registration, the must fill in the form that request the name, IC number, phone number, email, password and matrix number to check if its UPSI student or UPSI staff because the organizer must be in community of UPSI. After registered, they can login. The application will display 2 type of options; Organizer or Food Seller. The user then choose the Organizer. To login, the organizer will be given an ID and a password to be able to login. A checkbox is provided below the password form for the user to check whether it want the application to remember the password or not.

3.2.8 Edit Event

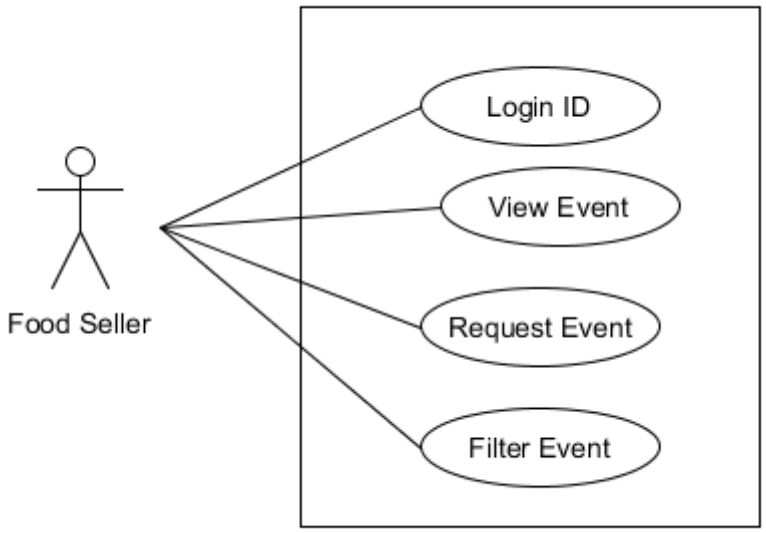
The organizer can edit the event after its already been upload in the U-Cater app. To edit the event, the organizer must enter the event that been upload in the app. Below of the event, the edit button is appear. So, the organizer just tap at the edit button and then the application will display the edit form. The organizer can choose what to edit such as time, date, etc.

3.3 Use Cases

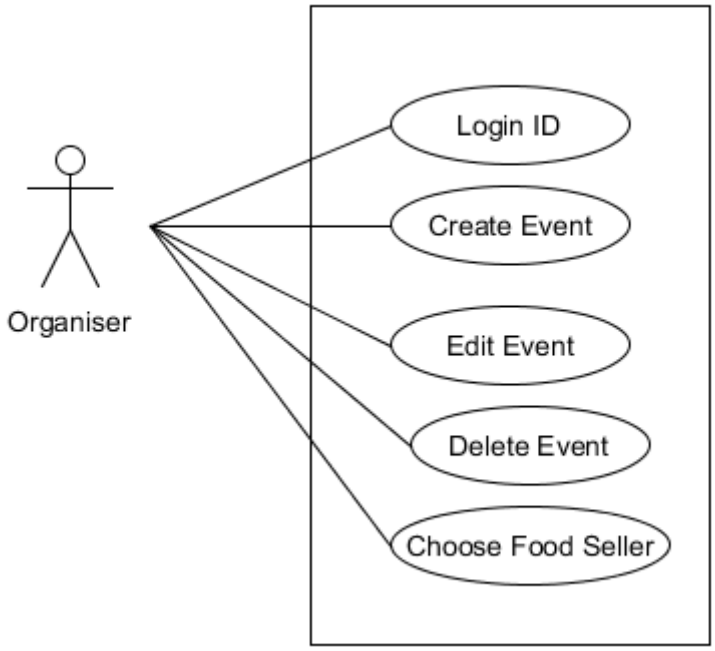
3.3.1 Top Level Use Case for U-Cater Application

3.3.2 Use Case Management

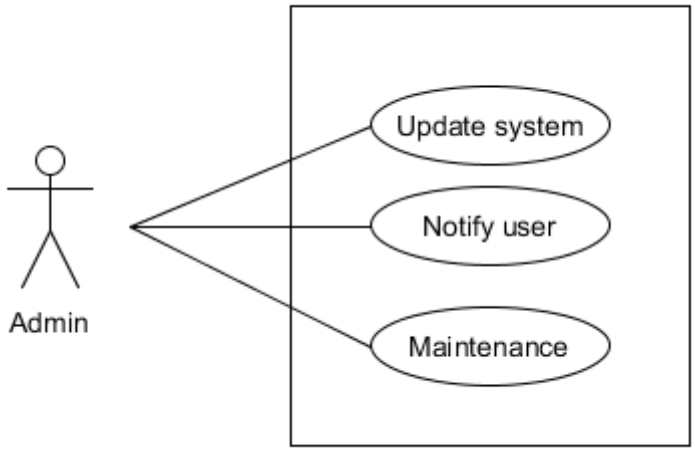
3.3.2.1 Food Seller Use Case



3.3.2.2 Organizer Use Case



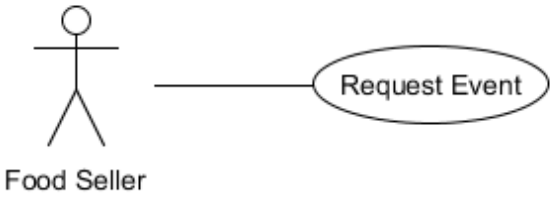
3.3.2.3 Administrator Use Case



Use Case Description

3.3.3 Use Case 1: Request Event

Diagram:

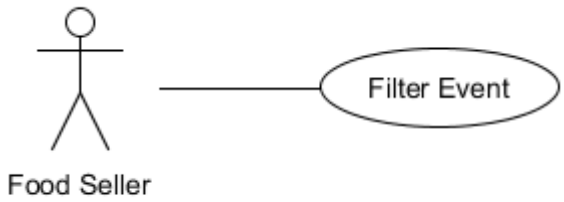


Use Case Name	Request Event
Actors	Food Seller
Description	The Food Seller choose an event, request to be the caterer for the event and wait for the organizer to approve.

Preconditions	Before this use case can be initiated, the Food Seller has already log in the U-Cater application
Step-By-Step	1. The Food Seller view the event from the homepage stated 'Up Coming Event' 2. The Food Seller tap or click the chosen event 3. The application displays the details of the event (Name of Event, Date, Venue etc) 4. The Food Seller request the event
Alternate Steps	N/A
Business Validation/ Rules	1. The Food Seller cannot request more than 2 event on the same date 2. The Food Seller cannot request more than 1 event on the same time
Post condition	The requested event is now pending and needed response from the organizer before proceeding.

3.3.4 Use Case 2: Filter Event

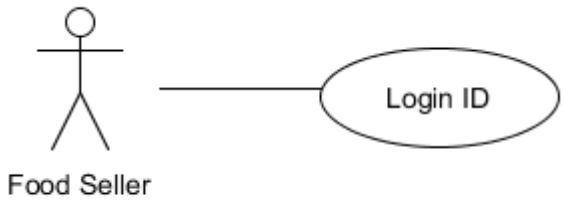
Diagram:



Use Case Name	Filter Event
Actors	Food Seller
Description	The Food Seller filter either the time of the event or date. The choices is then viewed on the timeline.
Preconditions	The event for the chosen date and time must be available or The application will display blank page stated “No Event”
Step-By-Step	1. The Food Seller view the event from the homepage stated ‘Up Coming Event’ 2. The Food Seller choose to filter event either date or time 3. The application displays the choices available to filter 4. The Food seller choose the desired time or date 5. The application displays the event base on the chosen filter
Alternate Steps	Manually view the event time or date in the event details.
Business Validation/ Rules	N/A
Post condition	The filtered event is displayed on the timeline/homepage

3.3.5 Use Case 3: Login Id

Diagram:

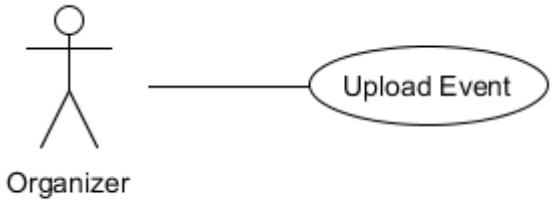


Use Case Name	Login ID
Actors	Food Seller
Description	The Food Seller who has already registered under UPSI Vendor list will be given an ID and password to login to the U-Cater Application.
Preconditions	Must obtain ID and password from admin.
Step-By-Step	1. The application display 2 type of user option; Organizer or Food Seller 2. The User then choose Food Seller 3. The Food Seller enter ID and password that are already given at the start of the application. 4. The Food Seller then click the confirm button to be registered in the application. 5. A checkbox is provided below the password form for the User to check whether it want the application to remember the password and ID.
Alternate Steps	N/A

Business Validation/ Rules	ID and password is given by admin via email
Post condition	Food Seller can now use U-Cater Application

3.3.6 Use Case 4: Upload/Create Event

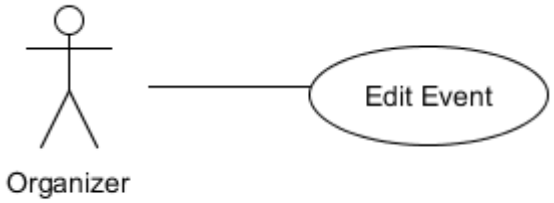
Diagram:



Use Case Name	Upload Event
Actors	Organizer
Description	The Organizer upload event to be viewed on the homepage by the Food Seller to request
Preconditions	Organizer must login before use this function
Step-By-Step	1. The Organizer choose the upload event option 2. The application display a blank form built in it 3. The Organizer need to fill in the details of the event such as Name of Event, Date, Time, Cost etc. then upload 4. The application will view the event on the Food Seller homepage ready to be requested.
Alternate Steps	N/A
Business Validation/ Rules	- Cannot upload event 2 weeks from the date of upload
Post condition	The event appeared on the homepage/timeline

3.3.7 Use Case 5: Edit Event

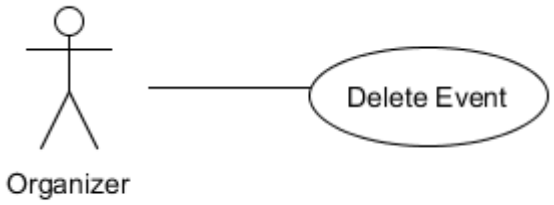
Diagram:



Use Case Name	Edit Event
Actors	Organizer
Description	The event can be edited by The Organizer if there is any change of venue, date etc.
Preconditions	This features can only be initiated before the Organizer approve any Food Seller for the event.
Step-By-Step	1. The Organizer choose event to be viewed. 2. Choose the edit button 3. Change the details in the form 4. The Organizer click confirm for the event to be re-upload. 5. The application will notify the Food Seller of the changes
Alternate Steps	N/A
Business Validation/ Rules	An event is already upload by the organizer
Post condition	Details of the event is changed. Food Seller that already request the event is notified.

3.3.8 Use Case 6: Delete Event

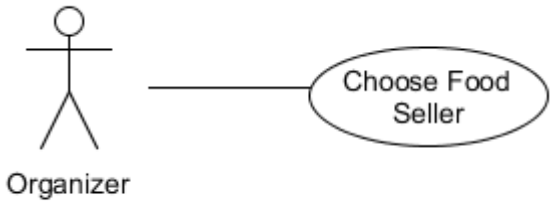
Diagram:



Use Case Name	Delete Event
Actors	Organizer
Description	The Organizer delete event to be removed from the homepage.
Preconditions	The event is already uploaded
Step-By-Step	1. The Organizer click the event that already uploaded 2. The Organizer choose to delete the event. 3. The application will ask for reconfirmation. 4. The Organizer click Yes. 5. The application will then notify the Food Seller who has request the event that it is cancelled.
Alternate Steps	N/A
Business Validation/ Rules	- If the Organizer already choose a Food Seller, the event cannot be deleted. - The event must be deleted at least 2 days before the date.
Post condition	Event on the timeline/homepage disappeared and Food Seller will receive notification.

3.3.9 Use Case 7: Choose Food Seller

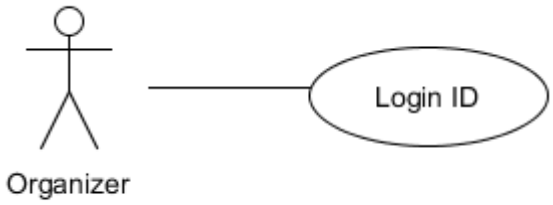
Diagram:



Use Case Name	Choose Food Seller
Actors	Organizer
Description	The Organizer approve which Food Seller that request the event fits the requirement of the event the most. The remaining Food Seller is then declined
Preconditions	At least 1 Food Seller has requested for an event
Step-By-Step	1. The Organizer choose which Food Seller to be the caterer of the event. 2. The Organizer approve/decline the request by the Food Seller 3. The application notify the Food Seller of the result 4. Reference no is created
Alternate Steps	N/A
Business Validation/ Rules	Food Seller is able to follow all details and condition.
Post condition	The Food Seller receive notification that it has been accepted. Pending turn to accepted.

3.3.10 Use Case 8: Login Id

Diagram:



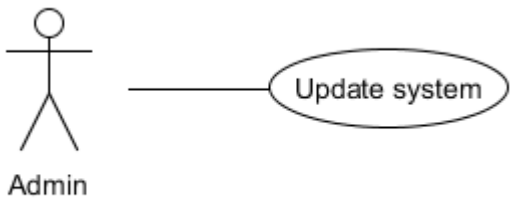
Use Case Name	Login ID
Actors	Organizer
Description	The Organizer will be given an ID and a password to be able to login to the U-Cater Application.
Preconditions	Must obtain ID and password from admin.
Step-By-Step	1. The application display 2 type of user option; Organizer or Food Seller 2. The User then choose Organizer 3. The Organizer enter ID and password that are already given at the start of the Application. 4. The Organizer then click the confirm button to be registered in the application. 5. A checkbox is provided below the password form for the User to check whether it want the application to remember the password and ID.
Alternate Steps	N/A

Business Validation/ Rules	ID and password is given by admin via email
Post condition	Organizer able to manage event

3.3.11 Admin Use Case

USE CASE 8: UPDATE SYSTEM

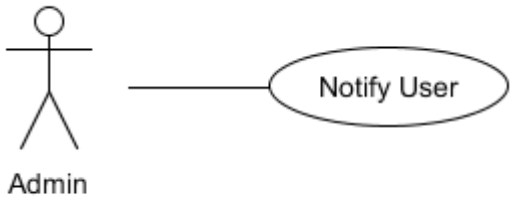
Diagram:



Use Case Name	Update System
Actors	Admin
Description	Administrator update the system, adding new features or fixes bug.
Preconditions	Admin have default ID and password
Step-By-Step	There is no specific step as administrator did not access through U-Cater Application
Alternate Steps	N/A
Business Validation/ Rules	New version does not affect any event, transaction that has already been uploaded.
Post condition	New patch is released and all user will be notified to download.

USE CASE 9: NOTIFY USER

Diagram:



Use Case Name	Notify User
Actors	Administrator
Description	Admin replying to the submitted report from the user and notifying any changes through the U-Cater Application.
Preconditions	- Admin has login - At least 1 report has been submitted by the user
Step-By-Step	1. Open the submitted report by the user 2. Reply to the user from the email
Alternate Steps	N/A
Business Validation/ Rules	The report need to be sent through the application in the problem section by fill in the blank form.
Post condition	User will get notification regarding the problem they submit.

3.4 Classes / Objects

3.4.1 Attribute

	Attribute	Description
1	Login	To login the application for enter and viewing the events.
2	Organizer	To publish the event in the application for food seller to join the services.
3	Food Seller	To view, accept and reject the event published.
4	Accepted Event	To generate the invoice of the event.
5	Event	To show the details of the event.

Table 3.4. 1 : The attributes from the classes

3.4.2 Functions.

	Function	Description
1	ID_Cache	Enter correct ID to enter the application
2	Password_Cache	Enter correct password to enter the application
3	Student_ID	Enter student ID to enter and publish the event in the application.
4	Student_Password	Enter password to enter and publish the event in the application.
5	Staff_ID	Enter staff ID to enter and publish the event in the application.
6	Staff_Password	Enter password to enter and publish the event in the application.
7	FoodSeller_ID	Enter ID to enter and view the event.
8	FoodSeller_Password	Enter correct password to enter and view the event.
9	Reference_No	Reference number of the invoice automatically generate for the event.
10	Time_Accepted	The real time of the invoice generate.
11	Event_Name	The name for the event.
12	Event_Date	The date of the event.
13	Event_Venue	The venue of the event.
14	Event_Time	The time of the event
15	Event_Cost	The price for the food.
16	Event_FoodType	The type of food want for the event.
17	Event_Organizer	The name of the organizer.

3.5 Non-Functional Requirements

In systems engineering and requirements engineering, a non-functional requirement is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors. They are contrasted with functional requirements that define specific behavior or functions. The plan for implementing functional requirements is detailed in the system design. The plan for implementing non-functional requirements is detailed in the system architecture, because they are usually Architecturally Significant Requirements.

Broadly, functional requirements define what a system is supposed to do and non-functional requirements define how a system is supposed to be. Non-functional requirements are in the form of "system shall be <requirement>", an overall property of the system as a whole or of a particular aspect and not a specific function. The system's overall properties commonly mark the difference between whether the development project has succeeded or failed.

3.5.1 Performance

Perfomance is defned as the degree to which a device or application fulfills its specification. The application should be faster and should not be hanging when in use.

The application will be use in event when the registration takes place. The registration take less then 10 seconds to regenerate the application. That application also can control many user in one time without lagging. That application is also simple

and easy to use for the user. This application is using internet, but even in low connection of internet, its can still be use and make it easier to use.

3.5.2 Realibility

Reliability is an attribute of any computer-related component (software, or hardware, or a network, for example) that consistently performs according to its specifications.

Reliability is also the probability of failure-free software operation for a specified period of time in a specified environment.

This application is safe to use to user because the user information is secure from another people that we called hacker. The information only can be see by user and admin. When the application is open, it can't show inappropriate messages or ads that also be a virus that can effect user gadget such as telephone, laptop, tab, and computer.

3.5.3 Security

Security system consisting of a combination of hardware and software that limits the exposure of a computer or computer network to attack from crackers that commonly used on local area networks that are connected to the internet.

In this application, only the admin can viewed the database in the system. This application only accept connections from the Spine Security Proxy (SSP) and authenticate the Spine Security Proxy (SSP) prior to responding to any requests using it's client certificate.. So, it cant be easily hacked by another entities. This application

also require the password and username for the user to open the software. So, another user can't easily open the software. If the user forget their password, they can revive their password thourgh the email.

3.5.4 Maintainability

Maintainability is the measure of ability to successfully repair or fix the product after manufacturing, usually in the field, and over time. System shall be designed to optimise the ability of maintenance personnel to revise or enhance it.

The U-Cater Application is a system that allows organizers to select the best food sellers and use their services in the event and it can be updated by developer if the application has bug and can be extended. The application is easily to repair because the application is built using the component that independent. The application also measures ability to make changes quickly and cost effectively :-

•Extension with new functionality

•Deleting unwanted capabilities

•Adaptation to new operating environments (portability)

3.5.5 Availability

Provider application shall meet the agreed availability targets (service time and/or hours and planned downtime).

The application will be available all the time 24/7 and it will updated time by time with the developer in charge. The application shall meet or exceed 99.99%

uptime. The application shall not be unavailable more than 1 hour per 1000 hours of operation. Less than 20 seconds shall be needed to restart the application after failure 95% of the time. If the internet connection is loss when using the software, the data from before loss the internet connection is be saved into database. So, the process can be continue when the internet connection is available.

3.5.6 **Portability**

Portability is a characteristic attributed to a computer program if it can be used in an operating systems other than the one in which it was created without requiring major rework. Porting is the task of doing any work necessary to make the computer program run in the new environment.

No more than 5% of the system implementation shall be specific to the operating system. No data loss should ensue. The U-Cater Application will be integrated into mobile application,so that the user of this can use this application wherever they are as they have the smartphone. It also can be used in computer, laptop and tab. So, it’s can be used in many types of operating system such as Windows XP, Windows 10 pro, Windows 7 Home and iOS also can use this software. Operating system for smartphone and tab that can used this software is android and iOS.

3.5.7 Usability

Usabilty is the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use.

The U-Cater Application can recover from an error and be able to continue the task. It can reduce error handling of the application. User satisfaction also take into account of usability of the application:-

For example,

•Four out of five users shall be able to book a guest within 5 minutes after a 2-hour introduction to the application.

•Novice users shall perform tasks X and Y in 15 minutes. Experienced users shall perform tasks X and Y in 2 minutes.

•At least 80% of customers polled after a 3 months usage period shall rate their satisfaction with the application at 7 and more on a scale of 1 to 10.

3.6 Inverse Requirements

3.6.1 Registration

In order to use the U-Cater Application, the user has already been provided an ID and password from the administrator to login. No registration function or database is needed.

3.6.2 Online payment

No built-in online payment in the U-Cater Application. The payment of the event must be made by mutual decision from both Food Seller and Organizer via personal, ATM or online banking.

3.7 Design Constraints

The primary design constraint is the mobile platform. Since the application is designated for mobile phone, it has limited screen size and resolution will be a major design consideration. Creating user interface which is both effective and easily navigable will pose a difficult challenge. Other constraints such as limited memory and processing power are also worth considering. U-Cater Application is meant to be quick and responsive, even when dealing with large groups and transactions, so each feature must be designed and implemented with efficiency in mind.

3.8 Logical Database Requirements

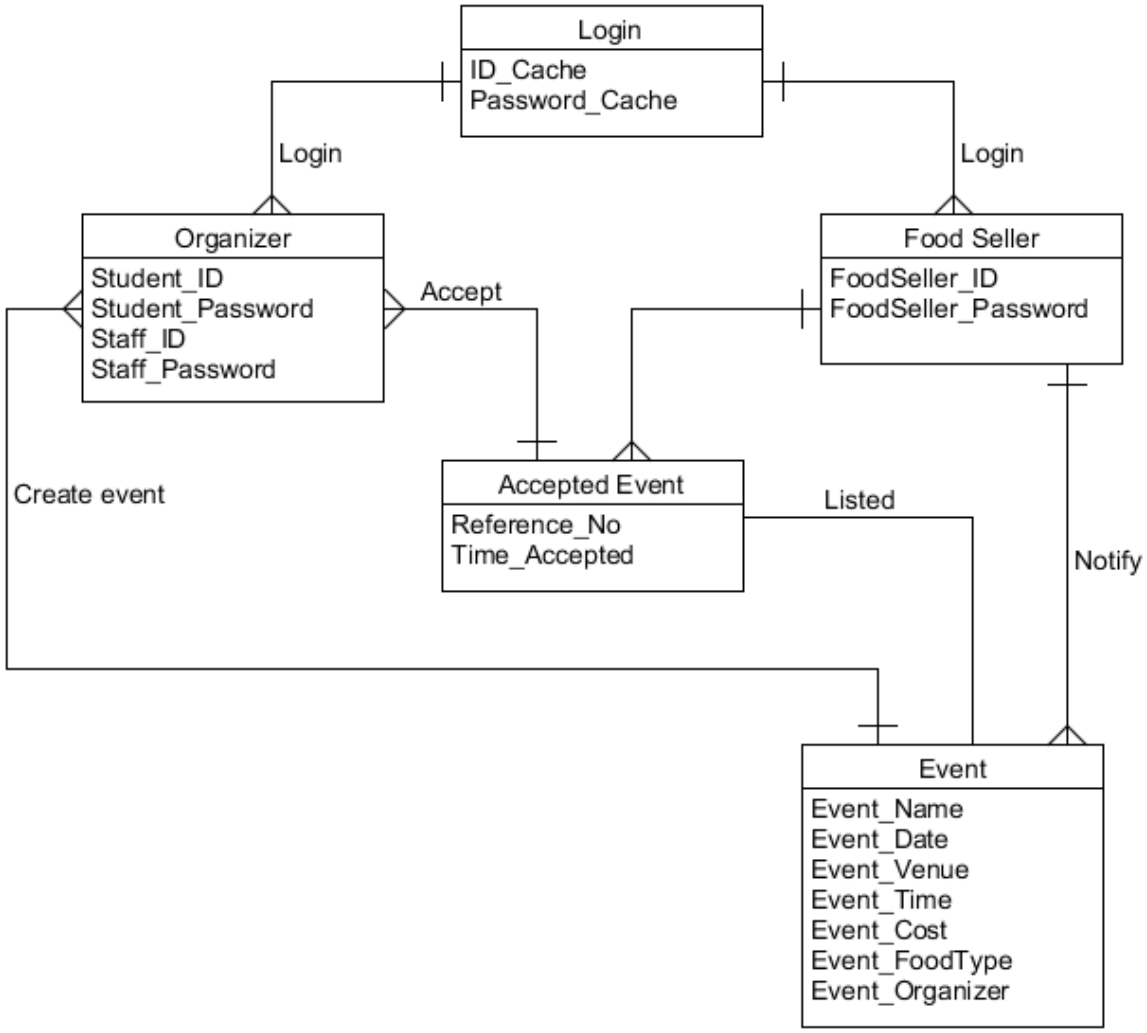


Figure 3.8: Logical Database of U-Cater Application

Relational Model Scheme using Logical Database of U-Cater Application is:

1. Organizer (Student_ID, Student_Password, Staff_ID, Staff_Password)
2. Food Seller (FoodSeller_ID, FoodSeller_Password)
3. Login (ID_Cache, Password_Cache)
4. Event (Event_Name, Event_Date, Event_Venue, Event_Time, Event_Cost, Event_FoodType, Event_Organizer, Pax_No)

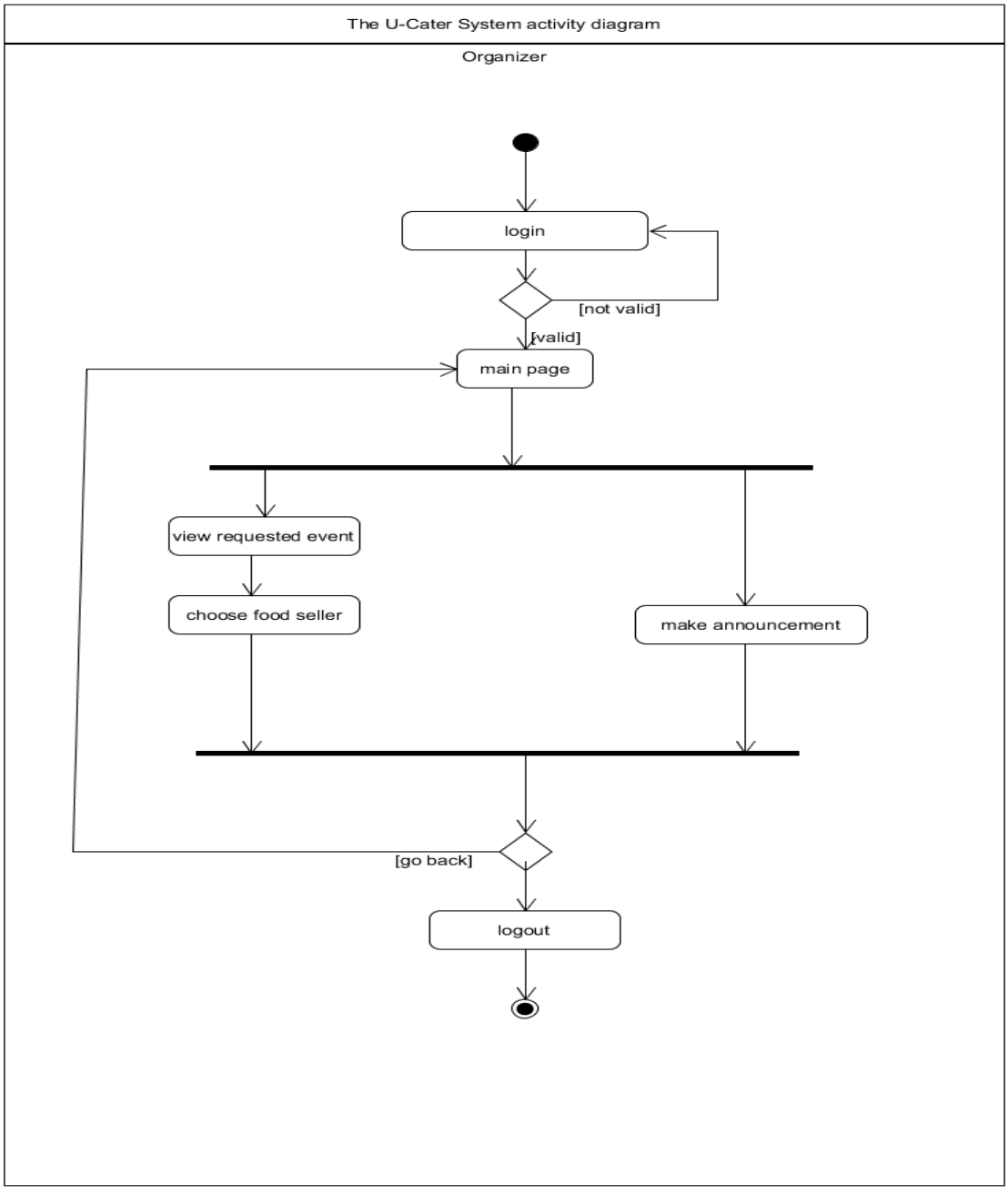
Field	Description
Student_ID	String data type, the length size must be at least 5 characters and above
Student_Password	Integer data type, the length size must be at least 8 character and above
Staff_ID	String data type, the length size must be at least 5 characters and above
Staff_Password	Integer data type, the length size must be at least 8 character and above
FoodSeller_ID	String data type, the length size must be at least 5 characters and above
FoodSeller_Password	Integer data type, the length size must be at least 8 character and above

4. Analysis Models

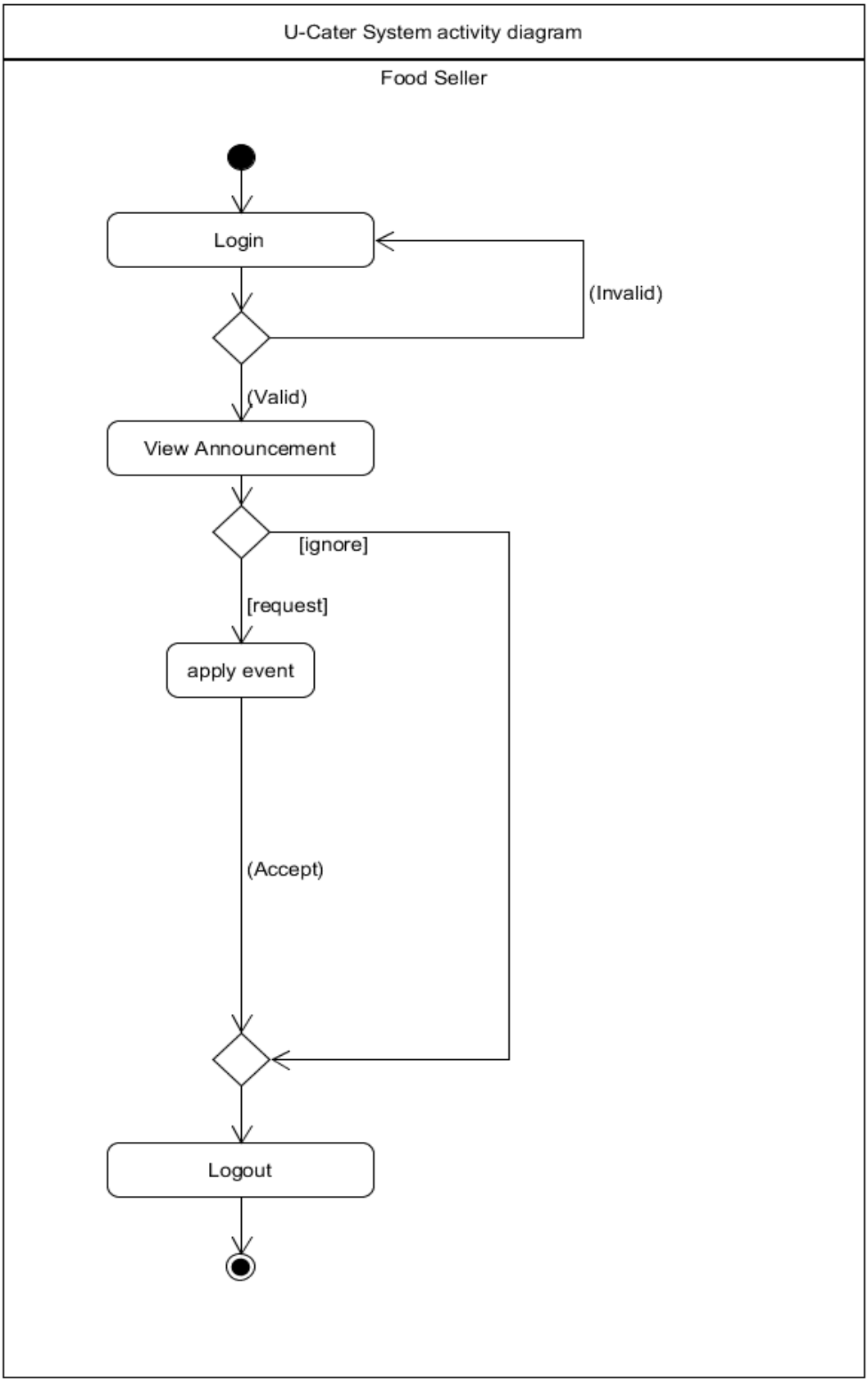
In this section, we are using two types of diagram which is an activity diagram and class diagram

4.1 Activiy Diagrams

4.1.1 Activity diagram for organizer of the event



4.1.2 Activity diagram for food seller



4.2 Class Diagrams

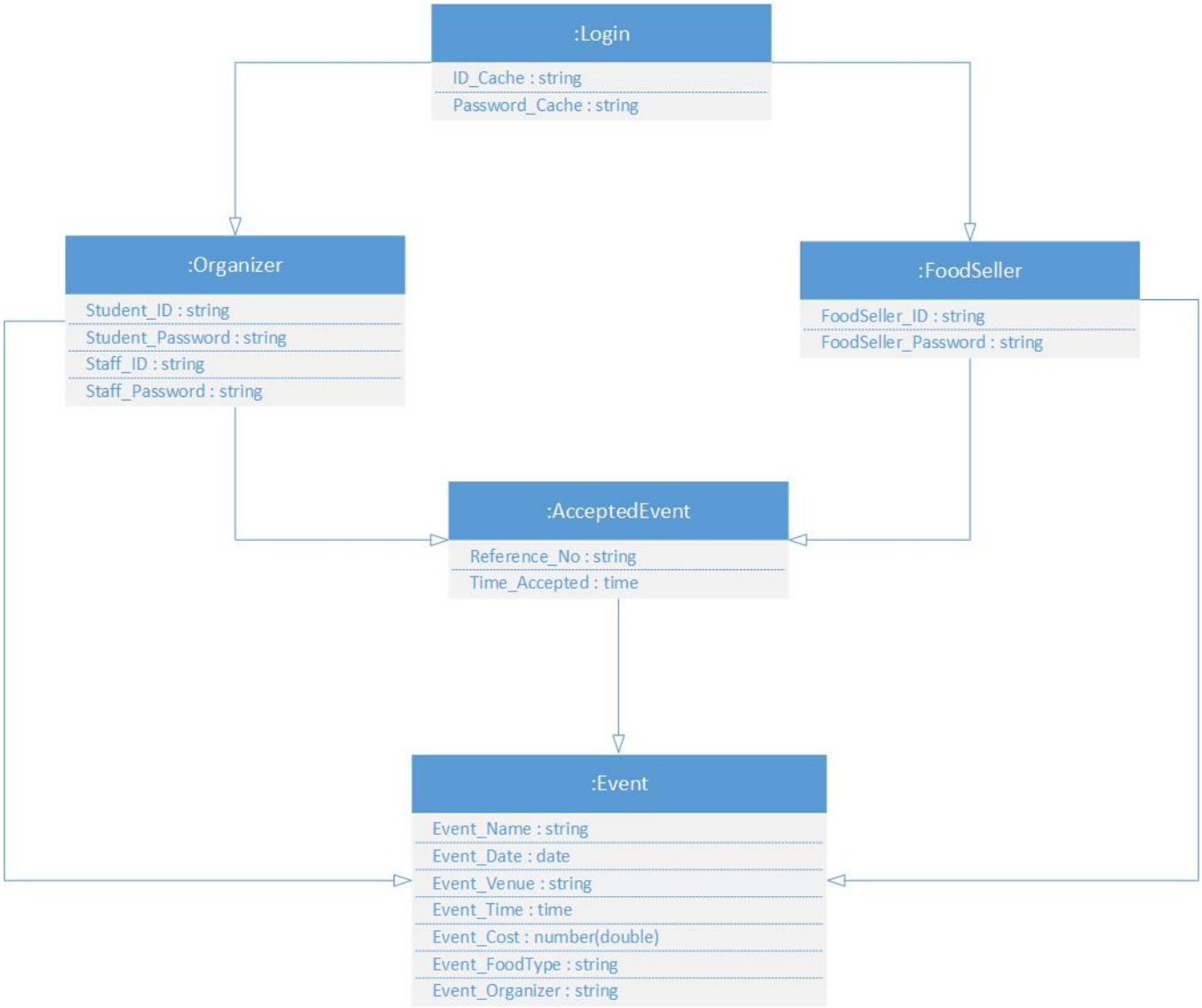


Figure 4.2: Class Diagram for U-Cater Application