

SWE 216

Software Requirements Specification (SRS) Template

The document in this file is an annotated outline for specifying software requirements, adapted from the IEEE Guide to Software Requirements Specifications (Std 830-1993).

Tailor this to your needs, removing explanatory comments as you go along. Where you decide to omit a section, you might keep the header, but insert a comment saying why you omit the data.

Software Requirements Specification

for

KEngage

Version 1.0 approved

Prepared by Group 5

King Fahd University for Petroleum and Minerals

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Revision History

Name	Date	Reason For Changes	Version

Contributions:

Section 1: Common work

Section 2:

1. Introduction

1.1 Purpose

KEngage is a mobile application that aims to increase KFUPM students participation in extra-curricular activities by offering events scheduling and arranging services managed by eligible KFUPM members to anyone who is interested.

1.2 Document Conventions

REQ Software Requirement

This SRS document is using the IEEE Standard for requirement engineering. For more information, you can refer to the link that is provided in the reference section.

1.3 Intended Audience and Reading Suggestions

Intended Audience:

- 1- Client
- 2- Users
- 3- Software Developers
- 4- Hardware Developers
- 5- Testers
- 6- Marketing staff
- 7- Project Managers
- 8- Requirements Analyst

For clients, users, marketing staff, project managers and requirement analysts this document should be read in a sequential way without skipping any section. For software developers and testers, they should dedicate most of their reading time to the detailed requirement section. For hardware developers they should focus on the external interface requirement section.

1.4 Project Scope

KEngage is a mobile application for KFUPM members who are interested in organizing and participating in extra-curricular activities and events. It provides scheduling and arrangement services. Managers, instructors, and members can create accounts in the mobile application via their KFUPM e-mails. Any User can edit their profile picture, expertise, areas of interest or any other information. Organizers could create events by specifying area, topic, location, date and time, rate and type of instruction. Learners can search for current and upcoming events, check if their friends are also registered in the event. After attending the event, learners can rate and report any adverse comment about the event. Unlike the current emailing system, KEngage will make the process more organized, easier and it will increase student's engagement in such events.

1.5 References

1. The IEEE standard for Requirement engineering <https://standards.ieee.org/>
2. The Communication & Information Technology Commision of Saudi Arabia (CITC) <https://www.citc.gov.sa/en/Pages/default.aspx>
3. King Fahd University of Petroleum and Minerals (KFUPM) <http://www.kfupm.edu.sa/Default.aspx>
4. Android operating system <https://www.android.com/>
5. IOS operating system <https://www.apple.com/ios/ios-15/>
6. Java programming language <https://www.java.com/en/>
7. Swift programming language <https://developer.apple.com/swift/>
8. HP WebInspect http://www.hp.com/hpinfo/newsroom/press_kits/2011/risk2011/HP_WebInspect_data_sheet.pdf
9. IOS Human Interface Guidelines [Themes - iOS - Human Interface Guidelines - Apple Developer](#)
10. Material Design [Introduction - Material Design](#)

2. Overall Description

2.1 Product Perspective

KEngage will be a follow-on to the current KFUPM emailing system that is being used to inform learners about available events. KEngage will allow “event managers” to organize extra-curricular events in a much more accessible and smoother way. “Learners” will be able to engage and interact with more accessibility in a centralized entity for extra-curricular activities. KEngage main goal is to increase students’ engagement rate in such activities.

2.2 Product Features

With KEngage, the relevant users will get extra-curricular scheduling and arrangement services. The aim of KEngage is to increase the participation of students in the events by providing them with many distinguished features. KEngage users can create accounts whether it is an Even Manager, Instructor or Member. It provides general features and special features for the type of user. One of the general services that it provides to all users the ability to change profile details and information and search for available events. As for special features, KEngage enables event managers to control event information, such as event type, location, date, and others. Users will be able to search for events and their information. The result will depend on the criteria entered by the user. There are many search criteria, and it will be possible for the user to manage options for those criteria. The learners, who are the students participating in the event, will also be able to see if their friends have registered for the event or not. The friends of the learners will be provided by the user himself.

KEngage gives the option for learners to rate the event after it has ended by criteria pre-defined by event managers. In addition, it provides learners the ability to report any negative comments about the event. Event managers will be able to look at it.

2.3 User Classes and Characteristics

- Event managers who use KEngage to organize extracurricular events of types.
- Instructors who use KEngage to follow-up with the events they'll be instructing in.
- Learners/Typical Students who use KEngage to search, participate, and rate such events.

2.4 Operating Environment

KEngage will be a follow-on to the current KFUPM emailing system with new event scheduling system for learners, instructors, and event managers. KEngage is a mobile application, and it shall be available for IOS mobiles and Android mobiles. KEngage is available with 1.0 version. KEngage must track KFUPM-email. KEngage shall be interoperable with KFUPM portal data base.

2.5 Design and Implementation Constraints

1. The application must follow all the policies and regulations that is imposed by the Communication & Information Technology Commision of Saudi Arabia (CITC) for mobile applications development.
2. The application must be compatible with all the interfaces that are required to communicate with any KFUPM database.
3. The application must support both English and Arabic language.

2.6 User Documentation

The user document components:

- User manual
- Online support team
- Tutorials
- Short instruction inside the program

Delivery formats:

- internet
- Hard copies
- quick response code inside the program

2.7 Assumptions and Dependencies

1. The application shall follow the software development standards for mobile applications. Java shall be used for developing the android app and Swift shall be used for developing the IOS app.
2. The application would run on mobile phones that have a minimum of 1GB of RAM and 100MB of free storage.
3. The user would have a minimum download speed of 500kb/s and a minimum upload speed of 100kb/s.

3. System Features

3.1 Creation of Accounts

3.1.1 Description and Priority

This feature should enable users to create accounts as event managers or instructors or members (learners). This feature is a high priority.

3.1.3 Functional Requirements

- REQ-1: KEngage system shall allow event managers, instructors, and learners to create a new account.
- REQ-2: KEngage system shall authenticate the created accounts with their users' identities.
- REQ-3: KEngage system should link the created account with the university portal data base.

3.2 Edit Profile Details

3.2.1 Description and Priority

KEngage system shall allow users to change their profile details after creating an account. The priority of this feature is medium.

3.2.2 Functional Requirements

- REQ-1: KEngage system shall allow users to view their current profile details before changing it
- REQ-2: KEngage system shall allow users to select the details to change
- REQ-3: KEngage system shall allow users to confirm the change in detail before completion

3.3 Creation and Specification of Event Details

3.3.1 Description and Priority

KEngage system shall allow event managers to create events and specify some important details about them.

3.3.2 Functional Requirements

REQ-1: KEngage system shall allow event managers to create and list events on the KEngage application.

REQ-2: KEngage system shall allow event managers to specify the type, board area, topic, location, date and time, rate, type of instruction, and the eligible classes for this event.

REQ-3: KEngage system shall provide the event manager with a confirmation panel to confirm all the details before the creation of the event.

3.4 Cancel Event Registration

3.4.1 Description and Priority

KEngage system shall allow users to cancel their registration in events.

3.4.2 Functional Requirements

REQ-1: KEngage system shall show the currently registered events for the user

REQ-2: KEngage system shall allow users to choose any of the registered events and cancel its registration

3.5 Learners Search for Events

3.5.1 Description and Priority

This feature should enable learners to search for events and check whether it is available or not.

3.5.2 Functional Requirements

REQ-1: KEngage system shall allow learners to search for events.

REQ-2: KEngage system shall check for availability of events.

3.6 Learners Search for Friends

3.6.1 Description and Priority

This feature should enable learners to search for friends and check whether they are registered in same events or not.

3.6.2 Functional Requirements

REQ-1: KEngage system shall allow learners to search for friends.

REQ-2: KEngage system shall check if friends are registered for same events or not.

3.7 Learners Rate Events

3.7.1 Description and Priority

This feature should give the option for learners to rate the event after it ended by some pre-defined criteria.

3.7.2 Functional Requirements

- REQ-1: KEngage system shall show the event's rating criteria to the learners
- REQ-2: KEngage system shall show the points that need to be rated to the learners
- REQ-3: KEngage system shall specify the important points that must be rated and the optional rating points
- REQ-4: KEngage system shall allow the learners to rate every point
- REQ-5: KEngage system shall allow the learners to confirm all rated points before it will be sent

3.8 Learners Feedback Report

3.8.1 Description and Priority

This feature should enable learners to write adverse comments on the event and might suggest some ways of improvement.

3.8.2 Functional Requirements

- REQ-1: KEngage system shall give the user the ability to write comments on events
- REQ-2: KEngage system shall check if the user attended the event or not. Then allow him to write a comment if he attended.

3.9 Remind for Registered Events

3.9.1 Description and Priority

This feature should remind users about upcoming events that they have registered for.

3.9.2 Functional Requirements

- REQ-1: KEngage system shall check if an upcoming event is going to occur in 24,12 or 1 hour.
- REQ-2: KEngage system shall send notification messages to users who are registered in the upcoming event

3.10 Notify of Related Upcoming Events

3.10.1 Description and Priority

KEngage system shall notify users about upcoming events that are similar to previous events that they have participated in or events that are related to their interests and academic major.

3.10.2 Functional Requirements

- REQ-1: KEngage system shall track users' participation in events in order to identify related upcoming events
- REQ-2: KEngage system shall categorize each event into a certain criterion to match related events with the user interests
- REQ-3: KEngage system shall allow users to disable or change their notification preferences

REQ-4: KEngage system shall notify users about upcoming related events by pop up notifications by default while allowing for SMS and Email notifications based on the user preference

3.11 Register Events

3.11.1 Description and Priority

KEngage system shall allow the users to register for offered events.

3.11.2 Functional Requirements

REQ-1: KEngage system shall show the details of the event chosen.

REQ-2: KEngage system shall show the recommended requirements for the event chosen.

REQ-3: KEngage system shall allow users to register for the chosen event.

3.12 Get Certification

3.12.1 Description and Priority

KEngage should give “Learners” the ability to get official certification of their participation in any event. The priority of this feature is medium

3.12.2 Functional Requirements

REQ-1: KEngage system shall show participants names to the instructor

REQ-2: KEngage system shall notify instructors to approve certifications issuing for learners at the end of the event

REQ-3: KEngage shall notify learners once the certification is issued for them

REQ-4: KEngage shall allow learners to download the certification document

3.13 Add Friends

3.13.1 Description and Priority

This feature should allow KEngage users to easily add friends through searching or viewing the list of participants for an event.

3.13.2 Functional Requirements

REQ-1: KEngage system shall allow users to add friends through searching for them by name or KFUPM ID

REQ-2: KEngage system shall allow users to select and add friends by viewing the list of current participants for an event

3.14 View Events

3.14.1 Description and Priority

This feature should allow users to view the main details of events

3.14.2 Functional Requirements

REQ-1: Clicking on an event should direct the user to the “View Events” interface

3.15 Show Event Details

3.15.1 Description and Priority

This feature should allow users to view additional minor details about an event

3.15.2 Functional Requirements

REQ-1: Clicking on “Show More Details” button in the “View Events” interface should expand primary details of the event to show secondary details

3.16 Event Deletion

3.16.1 Description and Priority

This feature should allow event managers to completely cancel and delete events from the system.

3.16.2 Functional Requirements

REQ-1: KEngage system shall allow event managers to delete events from the system

REQ-2: KEngage system shall show a confirmation panel to the event manager before proceeding to delete the event

REQ-3: KEngage system shall send notification messages to the event participants when the event is deleted

3.17 Edit Event Specification

3.17.1 Description and Priority

KEngage system shall allow “Managers” to edit any event’s specification

3.17.2 Functional Requirements

REQ-1: The system shall allow the manager to edit any required or unrequired specification in the event

REQ-2: The system shall notify the participants of the event about the new update of the event

3.18 Log In

3.18.1 Description and Priority

KEngage system shall allow “Users” to log in to their accounts

3.18.2 Functional Requirements

REQ-1: KEngage system shall allow users to log in using username and password

REQ-2: KEngage system shall allow users to log in to the account in one device only

3.19 Log Out

3.19.1 Description and Priority

KEngage system shall allow “Users” to log out of their accounts

3.19.2 Functional Requirements

REQ-1: KEngage system shall allow users to log out easily

3.20 Forget Password Option

3.20.1 Description and Priority

KEngage system shall allow “Users” to reset their passwords in case they forgot it

3.20.2 Functional Requirements

REQ-1: KEngage system shall show “Forget Password?” option under the “Username” & “Password” field

REQ-2: KEngage system shall use the user’s email as a way to reset the password

3.21 Dealing with Add Requests

3.21.1 Description and Priority

KEngage system shall allow “Users” to accept or deny their add requests

3.21.2 Functional Requirements

REQ-1: KEngage system shall show all add requests to the user

REQ-2: KEngage system shall allow user to accept the add request

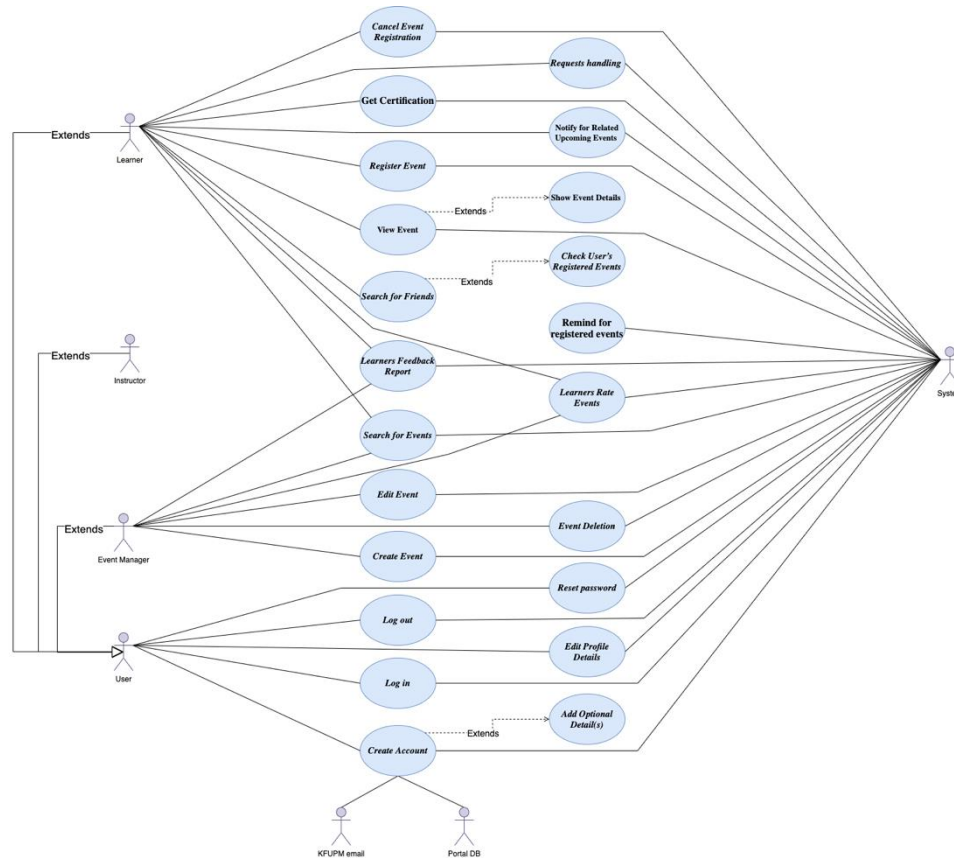
REQ-3: KEngage system shall allow user to deny the add request

4. Detailed Requirements

Work Distribution (Phase 2)

Name	4.1 Use Case Diagram	4.2 FR & Use Cases	4.3 UML Activity Diagram	4.4 Class Diagram	4.5 NFRs
Mustafa AlSadah	Done by:	3.1, 3.12, 3.13		Done by: Mustafa Alsadah	COMMON
Fadel Al Abbas		3.3, 3.5, 3.6, 3.11, 3.17, 3.18, 3.19, 3.20, 3.21			
Mohmmad Al Ramis		3.2, 3.4, 3.10			
Abdulrahman Alhathal		3.14, 3.15, 3.16			
Mohammed Alromih		3.7, 3.8, 3.9			

4.1 UML Use case Diagram



4.2 Functional Requirements

4.2.1 Requirement ID1: Creation of Accounts

Priority	High
Effort	2 weeks
Risk	Medium
Use Case(s)	UC-01
Description	<i>This feature should enable users to create accounts as event managers or instructors or members (learners).</i>
Notes	(if any)

4.2.1.1 UC-1.0: Create Account

Use Case ID:	1.0
Use Case Name:	Create account
Created By:	Mustafa
Date Created:	3 / 4 / 22
Actors:	User, System, Portal DB, KFUPM e-mail

Description:	<i>This feature should enable users to create accounts as event managers or instructors or members (learners).</i>
Trigger:	Clicking the “Sign-Up” button
Preconditions:	The user doesn’t have account in Kengage The user has a valid KFUPM ID The user has an active KFUPM e-mail
Post conditions:	A new Kengage account is created for the user with the proper authorities
Normal Flow:	1- The user clicks “Sign-Up” from the welcoming page 2- KEngage opens the registration form wizard 3- The user enters his KFUPM ID 4- The user presses “Next” 5- The Kengage authenticate the user via sending email to his KFUPM e-mail 6- The user confirms the authentication via opening the sent email and press “Confirm Registration” hyperlink within a 10 minutes duration 7- The link redirects the user to KEngage app 8- Kengage fetches the user personal information from KFUPM portal database 9- KEngage autofills the form with the fetched data 10- The user presses “Next” 11- KEngage show a “Password set-up” window 12- The user Enter his desired password 13- The user Enter his desired password for a second time in the password confirmation field 14- The user presses “Register” 15- KEngage sends an email to the user KFUPM e-mail with a registration confirmation letter 16- KEngage directs the user to homepage
Alternative Flows:	6a. The user does not confirm registration within the 10 minutes period: 1- KEngage shows an alert pop-up with the message “Authentication period has been finished, please try again or press cancel to cancel your registration process.” 1a. The user presses the “Try again button” 1- Go back to NF.5 1b. The user presses the “Cancel button” 1- KEngage destroys the registration wizard 2- KEngage redirects the user to the home page
Dependencies (Includes and extends relationships)	UC-1.0
Frequency of Use:	1/5

4.2.2 Requirement ID1: Edit Profile Details

Priority	Medium
Effort	2 Weeks
Risk	Medium

Use Case(s)	UC-02
Description	<i>KEngage system shall allow users to change their profile details after creating an account. The priority of this feature is medium.</i>
Notes	None

4.2.2.1 UC-2.0: Edit Profile Details

Use Case ID:	2.0
Use Case Name:	Edit Profile Details
Created By:	Mohammad Al Ramis
Date Created:	4/4/2022
Actors:	KEngage system, KEngage users
Description:	KEngage system shall allow users to change their profile details after creating an account. The priority of this feature is medium.
Trigger:	Clicking on the edit profile details button in the application
Preconditions:	The user has an account in KEngage
Post conditions:	The user can change his account details
Normal Flow:	1- The user clicks on the edit profile details button in the application 2- The system allows the user to change his/her profile details 3- The user changes any profile details he wants and clicks on the confirmation button 4- The system shows the user a confirmation panel for the action 5- The user confirms the action 6- The system saves the changes and returns the user to the main interface
Alternative Flows:	4a- If the user chooses to not confirm the action, the system will not edit the profile details and will return the user to the edit profile details interface
Dependencies (Includes and extends relationships)	None
Frequency of Use:	4/5

4.2.3 Requirement ID1: Creation and Specification of Event Details

Priority	High
Effort	3 weeks
Risk	High
Use Case(s)	UC-3.0, UC-3.1
Description	<i>KEngage system shall allow event managers to create events and specify some important details about them.</i>
Notes	None

4.2.3.1 UC-3.0: Create Event

Use Case ID:	3.0
Use Case Name:	Create Event
Created By:	Fadel Al Abbas
Date Created:	10/04/2022
Actors:	KEngage system, Event Managers
Description:	The manager can create a new event

Trigger:	Click on “Create Event”
Preconditions:	1.The user has a “Manager Account” in KEngage
Post conditions:	1. The event is created successfully
Normal Flow:	<ol style="list-style-type: none"> 1. The manager clicks on “Create Event” 2. The manager types the event name 3. The manager chooses a due date from a drop-down Calander 4. The manager types the description 5. The manager chooses and types the optional details (Requirement(s), Location(s), Manager(s), etc.) 6. The manager clicks create 7. The system creating the event 8. The system generates a unique code for the event 9. The system shows a message “Event has created successfully” 10. The system notifies users that a new event has been created 11. The system will show a page with the event details
Alternative Flows:	<ol style="list-style-type: none"> 3a. The manager chooses a past date: <ol style="list-style-type: none"> 1. The system will show an error message 5a. The manager does not choose or type any of the optional details: <ol style="list-style-type: none"> 1. Continue 7a. There is another event that has the same name <ol style="list-style-type: none"> 1. The system will show an error message with three choices (Edit, Create (EVENT NAME) #n, Cancel), where n is a positive integer number >1 <ol style="list-style-type: none"> 1a. The manager chooses “Edit”: <ol style="list-style-type: none"> 1. Go back to 2 in normal flow 1b. The manager chooses “Create (EVENT NAME) #n”: <ol style="list-style-type: none"> 1. The system will edit the name to (EVENT NAME) #n 2. Continue from 7 in normal flow 1c. The manager chooses “Cancel”: <ol style="list-style-type: none"> 1. The system will go back to 1 in normal flow
Dependencies (Includes and extends relationships)	None
Frequency of Use:	5/5

4.2.3.2 UC-3.1: Add Optional Detail(s)

Use Case ID:	3.1
Use Case Name:	Add Optional Detail(s)
Created By:	Fadel Al Abbas
Date Created:	10/04/2022
Actors:	KEngage system, Event Managers
Description:	The manager can add a new optional detail(s)
Trigger:	Click on the detail
Preconditions:	1. The manager is still on the page shown right after creating the event
Post conditions:	1. The detail(s) is/are added
Normal Flow:	<ol style="list-style-type: none"> 1. The manager clicks on the optional detail (Requirement(s), Location(s), Manager(s), etc.) that he/she wanted to add 2. The manager chooses/types the optional detail 3. The manager clicks “Save” 4. The system shows a successful message

Alternative Flows:	3a. There is more to add: <ol style="list-style-type: none"> Click “Add More” Go back to 2 in normal flow 3b. There is a conflict in the detail with another detail or event: <ol style="list-style-type: none"> The system will show an error message with two choices (Edit, Cancel) <ol style="list-style-type: none"> The manager chooses “Edit”: <ol style="list-style-type: none"> Go back to 2 in normal flow The manager chooses “Cancel”: <ol style="list-style-type: none"> The system will return to the page that was shown after the event creation
Dependencies (Includes and extends relationships)	UC-3.0
Frequency of Use:	5/5

4.2.4 Requirement ID1: Cancel Event Registration

Priority	High
Effort	1 Week
Risk	Low
Use Case(s)	UC-04
Description	<i>KEngage system shall allow users to cancel their registration in events.</i>
Notes	None

4.2.4.1 UC-4.0: Cancel Event Registration

Use Case ID:	4.0
Use Case Name:	Cancel Event Registration
Created By:	Mohammad Al Ramis
Date Created:	4/4/2022
Actors:	KEngage System, Event Participants
Description:	<i>KEngage system shall allow users to cancel their registration in events.</i>
Trigger:	User clicking on cancel registration button for the event
Preconditions:	1- The user has an account in KEngage 2- The user is currently registered for the targeted event to cancel
Post conditions:	The user cancels his/her registration for the event
Normal Flow:	1- The user chooses the desired event to cancel his/her registration 2- The user clicks on the cancel registration button for the event 3- The system shows the user a confirmation panel for the action 4- The user confirms the action
Alternative Flows:	3a- If the user chooses to not confirm the action, the system will not cancel the registration and will return the user to the main interface
Dependencies (Includes and extends relationships)	UC-1.0 UC-3.0
Frequency of Use:	5/5

4.2.5 Requirement ID1: Learners Search for Events

Priority	Medium
Effort	2 weeks
Risk	Low
Use Case(s)	UC-5.0
Description	<i>This feature should enable learners to search for events and check whether it is available or not.</i>
Notes	

4.2.5.1 UC-5.0: Search for Events

Use Case ID:	5.0
Use Case Name:	Search for Event
Created By:	Fadel Al Abbas
Date Created:	08/04/2022
Actors:	KEngage System, KEngage Users, Event Managers
Description:	Allows the user to search for the events
Trigger:	Clicking on the search bar
Preconditions:	None
Post conditions:	1. The user finds the event he/she was looking for (if any)
Normal Flow:	1. The user clicks on the search bar 2. The user types the event name or code 3. The event(s) that have matched the name/code will show up 4. The user taps on the event he/she wants
Alternative Flows:	3a. There are no events that match the name/code, but there is a similar name/code: <ol style="list-style-type: none"> 1. The system shows similar events 2. The user taps on the event he/she wants 3b. There are no events that match the name/code, and there is no similar name/code: <ol style="list-style-type: none"> 1. The system shows a message "Not found"
Dependencies (Includes and extends relationships)	None
Frequency of Use:	5/5

4.2.6 Requirement ID1: Learners Search for Friends

Priority	Low
Effort	2 weeks
Risk	Low
Use Case(s)	UC-6.0, UC-6.1
Description	<i>This should enable learners to search for friends and check whether they are register in same events or not</i>
Notes	

4.2.6.1 UC-6.0: Search for Friends

Use Case ID:	6.0
Use Case Name:	Search for Friends
Created By:	Fadel Al Abbas
Date Created:	10/04/2022
Actors:	KEngage System, KEngage User
Description:	The user wants to search for other users
Trigger:	Clicking on the search bar in the “Friends” section
Preconditions:	1. The user has an account in KEngage
Post conditions:	1. The user finds the user he/she was searching for (if the user exists)
Normal Flow:	1. The user chooses “Friends” section 2. The user clicks on the search bar 3. The user type the other user name or ID 4. The matched user(s) show up 5. The user clicks on the user he was searching for
Alternative Flows:	4a. There are no users that matches the name/ID, but there is a similar name/ID: 1. The system shows similar users 2. The user taps on the user he/she was searching for 4b. There are no users that matches the name/ID, and there is no similar name/ID: 1. The system shows a message “Not found”
Dependencies (Includes and extends relationships)	None
Frequency of Use:	3/5

4.2.6.2 UC-6.1: Check User’s Registered Events

Use Case ID:	6.1
Use Case Name:	Check User’s Registered Events
Created By:	Fadel Al Abbas
Date Created:	10/04/2022
Actors:	KEngage System, KEngage User
Description:	See the events a specific friend registered in
Trigger:	Click on the user
Preconditions:	1. The user has an account in KEngage
Post conditions:	1. The user sees the events that the friend registered in
Normal Flow:	1. The user clicks on the friend 2. The user clicks on the “Events” section in the profile 3. All events that the friend participated in will show up
Alternative Flows:	2a. The friend has hidden the events (private mode): 1. The system will show a message “The event list is hidden due to this user's privacy settings” 3a. The friend didn't participate in any events before: 1. The system will show a message “The user hasn’t participated in any event”
Dependencies (Includes and extends relationships)	UC-6.0 UC 15.0
Frequency of Use:	3/5

4.2.7 Requirement ID1: Learners Rate Events

Priority	Medium
Effort	1 week
Risk	Low
Use Case(s)	7.0
Description	<i>This feature should give the option for learners to rate the event after it ended by some pre-defined criteria.</i>
Notes	none

4.2.7.1 UC-7.0: Learners Rate Events

Use Case ID:	7.0
Use Case Name:	Learners Rate Events
Created By:	Mohammed Alrumaih
Date Created:	12/04/2022
Actors:	KEngage System, KEngage Users, Event Managers
Description:	KEngage system shall show the event's rating criteria to the learners
Trigger:	1. After the event finishes
Preconditions:	1. The event shall be finished
Post conditions:	1. The manager of the event receives the ratings
Normal Flow:	1. After the events happen pop up window should appear to the user 2. Display the stars out of five 3. Include a recommendation section 4. The user presses the submit button 5. The KEngage System will receive the ratings
Alternative Flows:	1.1 the user will press the close button to close the ratings window
Dependencies (Includes and extends relationships)	none
Frequency of Use:	5/5

4.2.8 Requirement ID1: Learners Feedback Report

Priority	Medium
Effort	1 week
Risk	Low
Use Case(s)	8.0
Description	<i>This feature should enable learners to write adverse comments on the event and might suggest some ways of improvement.</i>
Notes	none

4.2.8.1 UC-8.0: Learners Feedback Report

Use Case ID:	8.0
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Use Case Name:	Learners Feedback Report
Created By:	Mohammed Alrumaih
Date Created:	12/04/2022
Actors:	KEngage System, KEngage Users, Event Managers
Description:	This feature should enable learners to write adverse comments on the event and might suggest some ways of improvement.
Trigger:	1. Enter the comments for events
Preconditions:	1. The event has ended 2. The user attends the event
Post conditions:	1. Check for inappropriate comments and delete them
Normal Flow:	1. After the user attends the event the feedback section will appear 2. Click on the comment section 3. The user will write his comment 4. Send his comment
Alternative Flows:	3.1 the user writes inappropriate comments the system will reject the comment and delete it
Dependencies (Includes and extends relationships)	none
Frequency of Use:	4/5

4.2.9 Requirement ID1: Remind for registered events

Priority	High
Effort	1 Week
Risk	Medium
Use Case(s)	9.0
Description	<i>This feature should remind users about upcoming events that they have registered for.</i>
Notes	

4.2.9.1 UC-9.0: Remind for registered events

Use Case ID:	9.0
Use Case Name:	Remind for registered events
Created By:	Mohammed Alrumaih
Date Created:	16/04/2022
Actors:	KEngage System, KEngage Users
Description:	This feature should remind users about upcoming events that they have registered for.
Trigger:	24, 12 or 1 hours Before the event
Preconditions:	The event is after 24 hours, 12 hours or 1 hour
Post conditions:	none
Normal Flow:	1. Check if the event is after 24 hours, 12 hours or 1 hour 2. the KEngage system shall send a notification to users who are registered in the upcoming event
Alternative Flows:	No alternative flows

Dependencies (Includes and extends relationships)	UC-6.1 UC-15
Frequency of Use:	5/5

4.2.10 Requirement ID1: Notify for Related Upcoming Events

Priority	Medium
Effort	1 Week
Risk	Low
Use Case(s)	UC-01
Description	<i>KEngage system shall notify users about upcoming events that are similar to previous events that they have participated in or events that are related to their interests and academic major.</i>
Notes	None

4.2.10.1 UC-10.0: Notify for Related Upcoming Events

Use Case ID:	10.0
Use Case Name:	Notify of Related Upcoming Events
Created By:	Mohammad Al Ramis
Date Created:	4 / 4 / 22
Actors:	KEngage System, Event Participants, Event Managers
Description:	KEngage system shall notify users about upcoming events that are similar to previous events that they have participated in or events that are related to their interests and academic major.
Trigger:	The creation of an event that is related to some KEngage users
Preconditions:	1- The user has an account in KEngage that contains information about his/her major or his/her interests 2- The user has not disabled this feature from the application.
Post conditions:	The user receives a notification about the upcoming related event by one or all of the following methods: Pop up, Email, SMS
Normal Flow:	1- A new event gets created in the application by the event managers 2- The system matches the category of the event with some users 3- The system sends notifications to users who have not disabled notifications from the application
Alternative Flows:	None
Dependencies (Includes and extends relationships)	UC-1.0 UC-3.0
Frequency of Use:	4/5

4.2.11 Requirement ID1: Register Events

Priority	High
Effort	3 weeks
Risk	High
Use Case(s)	UC-11.0

Description	<i>KEngage system shall allow the users to register for offered events</i>
Notes	None

4.2.11.1 UC-11.0: Register Event

Use Case ID:	11.0
Use Case Name:	Register Event
Created By:	Fadel Al Abbas
Date Created:	10/04/2022
Actors:	KEngage System, KEngage User
Description:	The user can register to events
Trigger:	The existence of such an event that the user is interested in
Preconditions:	1. The user has an account in KEngage 2. The user fits the event requirements
Post conditions:	1. The user is registered successfully if the event is available
Normal Flow:	1. The user clicks on the event 2. The system shows all events details, requirements, number of participants, event's result (if done), etc. 3. The user clicks on register 4. The system registers the user and adds it to the participants list 5. The system shows a message "You have registered on (EVENT NAME) event successfully"
Alternative Flows:	4a. The event has completed the number of its participants: 1. The system shows a message "The participants number is full" 4b. The event's due date has passed: 1. The system shows a message "The event is over"
Dependencies (Includes and extends relationships)	UC-15.0
Frequency of Use:	5/5

4.2.12 Requirement ID1: Get Certification

Priority	Medium
Effort	1-week
Risk	Low
Use Case(s)	UC-12.0
Description	KEngage should give "Learners" the ability to get an official certification of their participation in any event.
Notes	-

4.2.12.1 UC-12.0: Get Certification

Use Case ID:	12.0
Use Case Name:	Get Certification
Created By:	Mustafa Alsadah
Date Created:	11/4/2022
Actors:	Learners, Instructors, System
Description:	KEngage should give "Learners" the ability to get an official certification of their participation in any event.

Trigger:	The user presses “Download Certification” at the “my records” page
Preconditions:	The learner has successfully completed the event and its activities. The Instructor of the event has approved certification issuing.
Post conditions:	The learner downloads the certification document of the event in which he participated.
Normal Flow:	<ol style="list-style-type: none"> 1. The learner navigates to the “my records” page 2. The learner scrolls/navigates to the card corresponding to the event he completed 3. The learner presses “Download Certification” 4. The learners choose the preferred document type (.pdf or .docx) 5. KEngage downloads the document file to the “downloads directory” in the learner’s device
Alternative Flows:	<ol style="list-style-type: none"> 4a. If the learner does not choose a preferred type: <ol style="list-style-type: none"> 1- KEngage selects “.pdf” as the document type 2- Go to NF.5 5a. If the learner’s device is full of storage: <ol style="list-style-type: none"> 1- KEngage shows an alert with the message “Sorry, your device is running out of storage, please free up some space and try again” 2- Go to NF.1
Dependencies (Includes and extends relationships)	None
Frequency of Use:	4/5

4.2.13 Requirement ID1: Add Friends

Priority	High
Effort	1-week
Risk	Medium
Use Case(s)	UC-13.0
Description	This feature should allow KEngage users to easily add friends through searching or viewing the list of participants for an event.
Notes	None

4.2.13.1 UC-13.0: UC Name2

Use Case ID:	13.0
Use Case Name:	Add Friends
Created By:	Mohammad Al Ramis
Date Created:	4/16/2022
Actors:	KEngage system, KEngage Users
Description:	This feature should allow KEngage users to easily add friends through searching or viewing the list of participants for an event.
Trigger:	Clicking on the add button for a KEngage user object
Preconditions:	Both the user and his/her friend have an account in KEngage
Post conditions:	The user who used this feature should be able to quickly check if one of his/her friends is participating in an event

Normal Flow:	1. The user finds his friends account in the application via either searching for his/her name or ID or by finding his user object while viewing the list of participants for an event 2. The user clicks on the add button for his/her friend 3. KEngage system adds the friend to the user's friend list
Alternative Flows:	None
Dependencies (Includes and extends relationships)	UC-1.0 UC-6.0 UC-14.0 UC-15.0
Frequency of Use:	4/5

4.2.14 Requirement ID1: View Events

Priority	High
Effort	2 Weeks
Risk	Medium
Use Case(s)	UC-14
Description	<i>KEngage shall view the existing events</i>
Notes	None

4.2.14.1 UC ID2: View events

Use Case ID:	14.0
Use Case Name:	View Events
Created By:	Abdulrahman Alhathal
Date Created:	12/04/2022
Actors:	KEngage System, KEngage User
Description:	User can view event
Trigger:	View the existence of such an event that the user is interested in
Preconditions:	1. The user has an account in KEngage
Post conditions:	1. There are events that exist
Normal Flow:	1. User click on event list 2. Click on event
Alternative Flows:	None
Dependencies (Includes and extends relationships)	None
Frequency of Use:	5/5

4.2.15 Requirement ID1: Show Event Details

Priority	Medium
Effort	1 Week
Risk	Low
Use Case(s)	UC-15
Description	<i>KEngage should give more details about showing event</i>
Notes	None

4.2.15.1 UC ID2: Show event details

Use Case ID:	15.0
Use Case Name:	Show Event Details
Created By:	Abdulrahman Alhathal
Date Created:	12/04/2022
Actors:	KEngage System, KEngage User
Description:	System can show more details in viewing event
Trigger:	View the existence of such an event that the user is interested in and showing more detail
Preconditions:	1. The user has an account in KEngage
Post conditions:	1. The event exists
Normal Flow:	1. Show event list 2. Click on event 3. Click on show more details
Alternative Flows:	3a. There are no details 1. View the exact event
Dependencies (Includes and extends relationships)	UC-14
Frequency of Use:	4/5

4.2.16 Requirement ID1: Event Deletion

Priority	High
Effort	2 weeks
Risk	High
Use Case(s)	UC-16
Description	<i>KEngage should delete event</i>
Notes	Send notifications to those who registered for the event

4.2.16.1 UC-16.0: Delete event

Use Case ID:	16.0
Use Case Name:	Delete event
Created By:	Abdulrahman Alhathal
Date Created:	14/04/2022
Actors:	KEngage system, Event Managers
Description:	Event manager can delete an existing event
Trigger:	The deletion of such an event that existing
Preconditions:	1.The user has a “Manager Account” in KEngage
Post conditions:	1. The event is deleted successfully
Normal Flow:	1. The manager clicks on the event 2. The system shows all events details, requirements, number of participants, event’s result (if done), etc. 3. The manager clicks on delete 4. The system shows the event manager a confirmation panel before proceeding to delete the event

	5. The system sends notifications to the participants list 6. The system shows a message “You have deleted (EVENT NAME) event successfully”
Alternative Flows:	4a. If the event manager chooses to not confirm the deletion of the event, return the event manager to the “View Event” interface of the same event
Dependencies (Includes and extends relationships)	UC-5.0 UC-14.0 UC-15.0
Frequency of Use:	3/5

4.2.17 Requirement ID1: Edit Event Specifications

Priority	High
Effort	2 weeks
Risk	High
Use Case(s)	UC-17.0
Description	<i>KEngage system shall allow “managers” to edit any event’s specification</i>
Notes	None

4.2.17.1 UC-17.0: Edit Event

Use Case ID:	17.0
Use Case Name:	Edit Event
Created By:	Fadel Al Abbas
Date Created:	14/04/2022
Actors:	KEngage System, Event Managers
Description:	The Manager Can Edit The Event
Trigger:	The User is a Manager of The Event
Preconditions:	1. The user has a “Manager Account” in KEngage
Post conditions:	1. The Event is Updated 2. The Event’s Participants Get Notified
Normal Flow:	1. Click on the event 2. Click on “Edit” 3. Edit the primary details (Event Name, Due Date, Description) or the optionally ones (Requirement(s), Location(s), Manager(s)) or both 4. Click on “Save & Close” 5. A confirmation window will show up 6. Click on “Yes” 7. The changes will be saved and updated 8. The participants will be notified about the update 9. Show successful message
Alternative Flows:	6a. The edited name is not available due to another event having the same name: 1. The system will show an error message with three choices (Edit, Create (EVENT NAME) #n, Cancel), where n is a positive integer number >1 1a. The manager chooses “Edit”: 1. Go back to 3 in normal flow 1b. The manager chooses “Create (EVENT NAME) #n”: 1. The system will edit the name to (EVENT NAME) #n

	2. Continue from 5 in normal flow 1c. The manager chooses “Cancel” 6b. The manager chooses a past date: 1. The system will show an error message with two choices (Edit, Cancel) 1a. The manager chooses “Edit”: 1. Go back to 3 in normal flow 1b. The manager chooses “Cancel”: 1. The system will go back to 1 in normal flow 6c. The manager chooses “No”: 1. Go back to 3 in normal flow
Dependencies (Includes and extends relationships)	UC-3.1 UC-14.0
Frequency of Use:	3/5

4.2.18 Requirement ID1: Log in

Priority	High
Effort	1 Week
Risk	High
Use Case(s)	UC-18.0
Description	<i>KEngage system shall allow “Users” to log in to their accounts</i>
Notes	None

4.2.18.1 UC-18.0: Log in

Use Case ID:	18.0
Use Case Name:	Log in
Created By:	Fadel Al Abbas
Date Created:	15/04/2022
Actors:	KEngage System, KEngage Users
Description:	The user can log in to his/her account
Trigger:	The user already has an account in KEngage
Preconditions:	1. The user has a “Manager Account” in KEngage
Post conditions:	1. The user logged in successfully 2. The account logged out of the other device (If any)
Normal Flow:	1. Open the application 2. Enter the username 3. Enter the password 4. Click on “Log in” 5. The system will authorize it 6. The account will be logged out from any other device 7. The account will be logged in
Alternative Flows:	5a. The username is wrong: 1. The system will show an error message with two choices (Try Again, Cancel) 1a. The user chooses “Try Again”:

	1. Go back to 2 in normal flow 1b. The user chooses "Cancel": 1. The system will go back to 1 in normal flow 5b. The password is wrong: 1. The system will show an error message with two choices (Try Again, Cancel) 1a. The user chooses "Try Again": 1. Go back to 3 in normal flow 1b. The user chooses "Cancel": 1. The system will go back to 1 in normal flow 6a. There is no device that logged in with the same account: 1. Continue (Go to 7 in the normal flow)
Dependencies (Includes and extends relationships)	UC-19.0
Frequency of Use:	1/5

4.2.19 Requirement ID1: Log out

Priority	Low
Effort	1 Week
Risk	Medium
Use Case(s)	UC-19.0
Description	<i>KEngage system shall allow "Users" to log out their accounts</i>
Notes	None

4.2.19.1 UC-19.0: Log out

Use Case ID:	19.0
Use Case Name:	Log out
Created By:	Fadel Al Abbas
Date Created:	15/04/2022
Actors:	KEngage System, KEngage Users
Description:	The user can log out from his/her account
Trigger:	The user already has an account in KEngage
Preconditions:	1. The user already logged in
Post conditions:	1. The user logged out successfully
Normal Flow:	1. Open the application 2. Click on the "User Icon" on the top 3. The drop-down list will show up 4. Click on log out 5. A confirmation will show up 6. Click on "Yes" 7. The account will be logged out
Alternative Flows:	6a. The user clicks on "Cancel": 1. Go to 1 in normal flow
Dependencies (Includes and extends relationships)	None

Frequency of Use:	1/5
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4.2.20 Requirement ID1: Forget Password

Priority	Low
Effort	1 Week
Risk	Low
Use Case(s)	UC-20.0
Description	<i>KEngage system shall allow "Users" to reset their passwords in case they forgot it</i>
Notes	None

4.2.20.1 UC-20.0: Reset password

Use Case ID:	20.0
Use Case Name:	Reset password
Created By:	Fadel Al Abbas
Date Created:	15/04/2022
Actors:	KEngage System, KEngage Users
Description:	The user can reset his/her password
Trigger:	The user already has an account in KEngage
Preconditions:	1. The user already has an account in KEngage
Post conditions:	1. The user reset his/her password successfully
Normal Flow:	1. Click on "Forgot the password?" 2. The user enters his/her email 3. The system will send a random number of 6 numbers to the user's email 4. The user enters the number that has been sent 5. The system will authorize it 6. The system will change the password 7. The system will show a successful message
Alternative Flows:	2a. There is no account with the email entered: 1. The system will show an error message with two choices (Try Again, Cancel) 1a. The user chooses "Try Again": 1. Go back to 2 in normal flow 1b. The user chooses "Cancel": 1. The system will go back to 1 in normal flow 5a. The authorization process failed: 1. The system will show an error message with two choices (Try Again, Cancel) 1a. The user chooses "Try Again": 1. Go back to 5 in normal flow 1b. The user chooses "Cancel"
Dependencies (Includes and extends relationships)	None
Frequency of Use:	1/5

4.2.21 Requirement ID1: Dealing with Add Requests

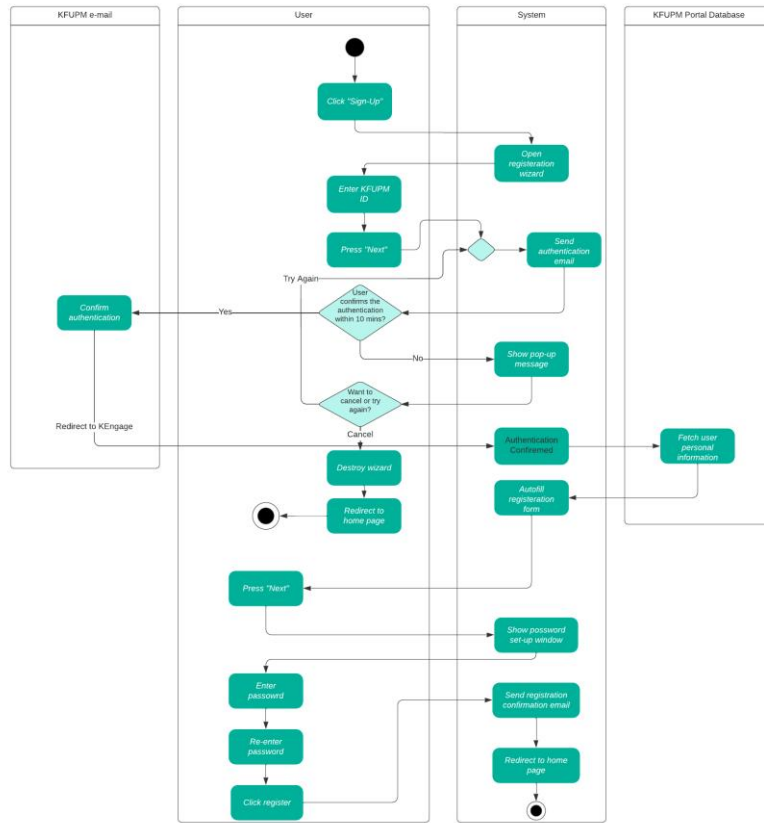
Priority	Medium
Effort	1 Week
Risk	Low
Use Case(s)	UC-21.0
Description	<i>KEngage system shall allow "Users" to accept or deny their add requests</i>
Notes	None

4.2.21.1 UC-21.0: Requests handling

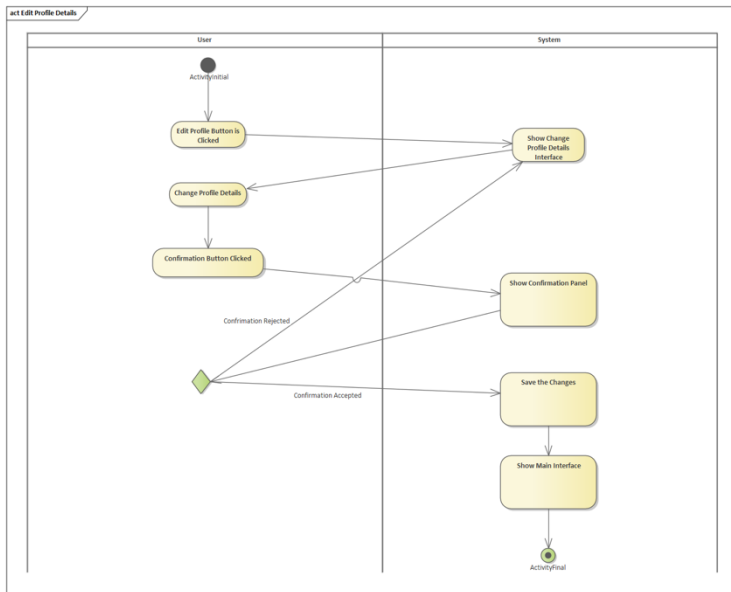
Use Case ID:	21.0
Use Case Name:	Requests handling
Created By:	Fadel Al Abbas
Date Created:	15/04/2022
Actors:	KEngage System, KEngage Users
Description:	The user can accept or deny the requests
Trigger:	Click on the "Requests" section
Preconditions:	1. The user already has an account in KEngage 2. There is/are already request(s)
Post conditions:	1. The user either accepts or denies the request successfully
Normal Flow:	1. The user clicks on the requests section 2. The system will show the requests that the user has 3. The user clicks on accept 4. The system will add the user that sent the request to the friends list 5. The system will notify the user that sent the request that his request has been accepted
Alternative Flows:	3a. The user clicks on deny: 1. End the flow
Dependencies (Includes and extends relationships)	UC-13.0
Frequency of Use:	2/5

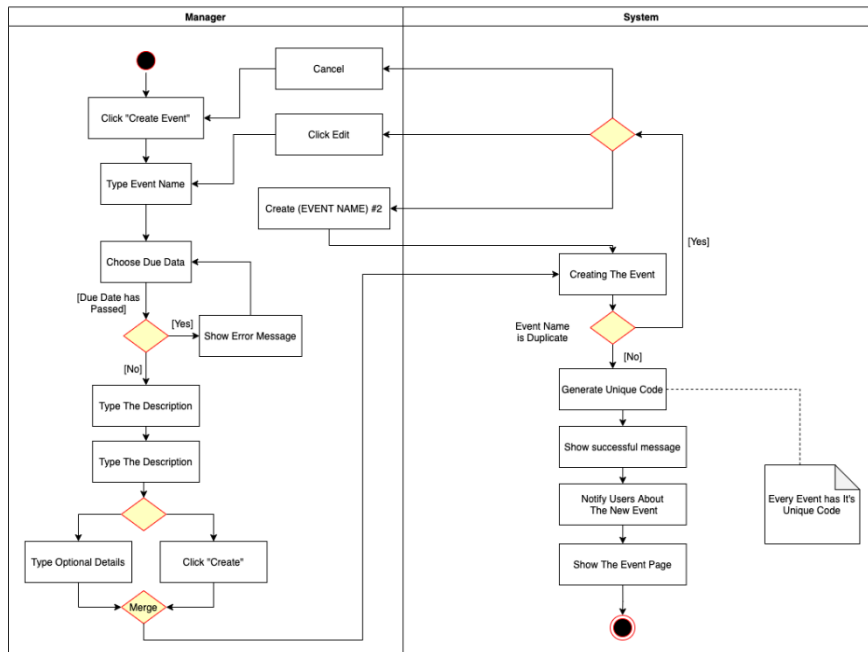
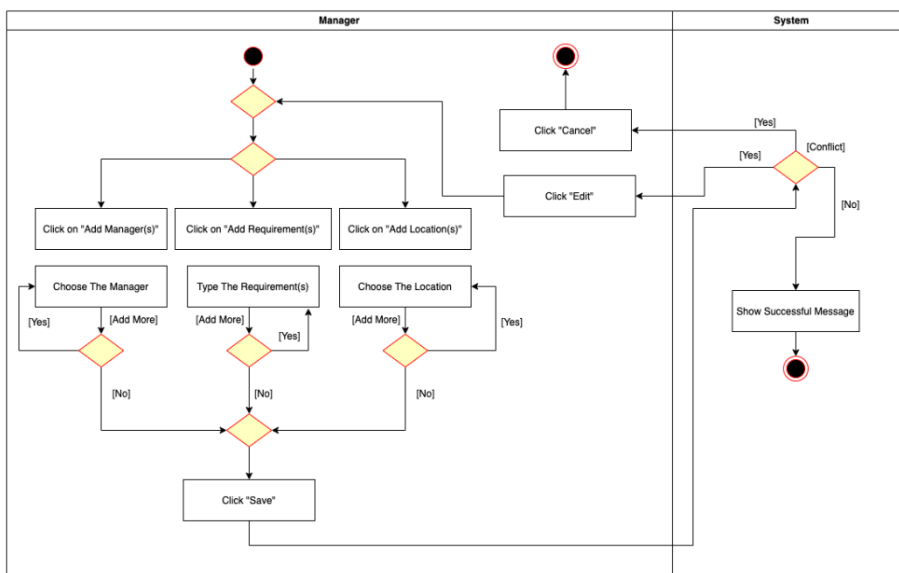
4.3 UML Activity Diagrams

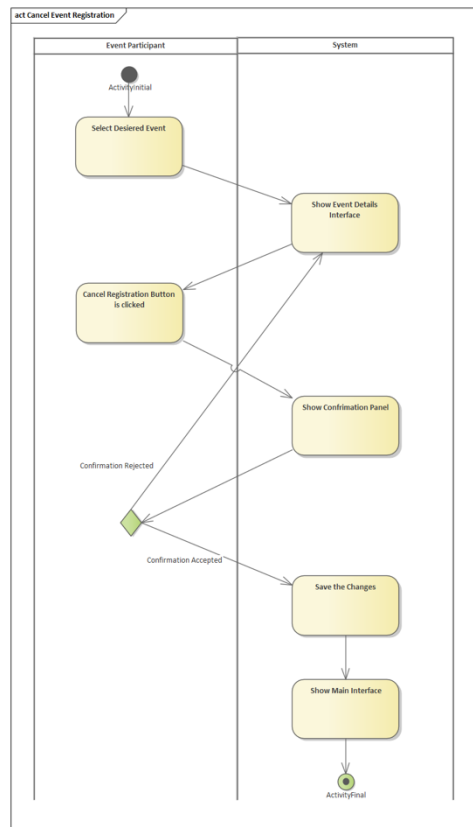
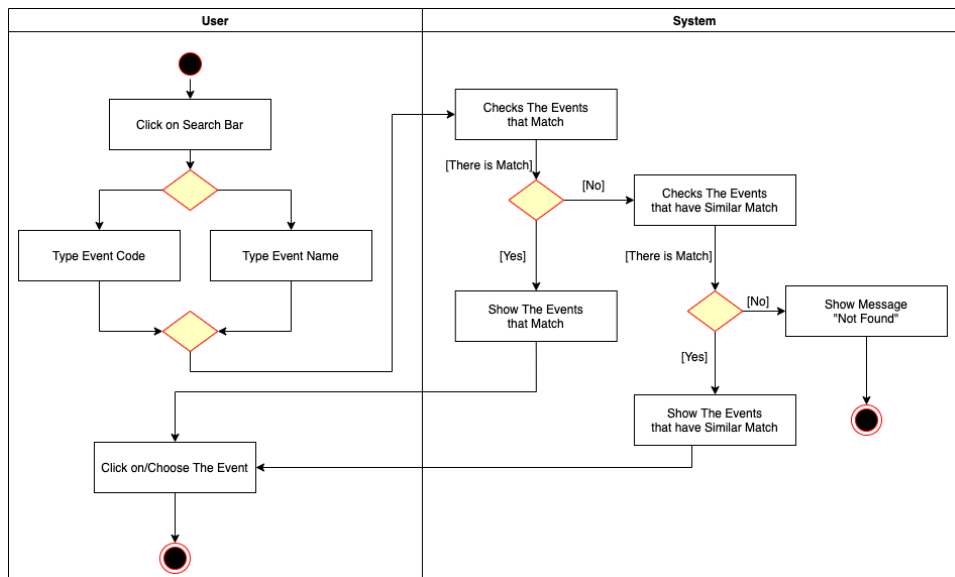
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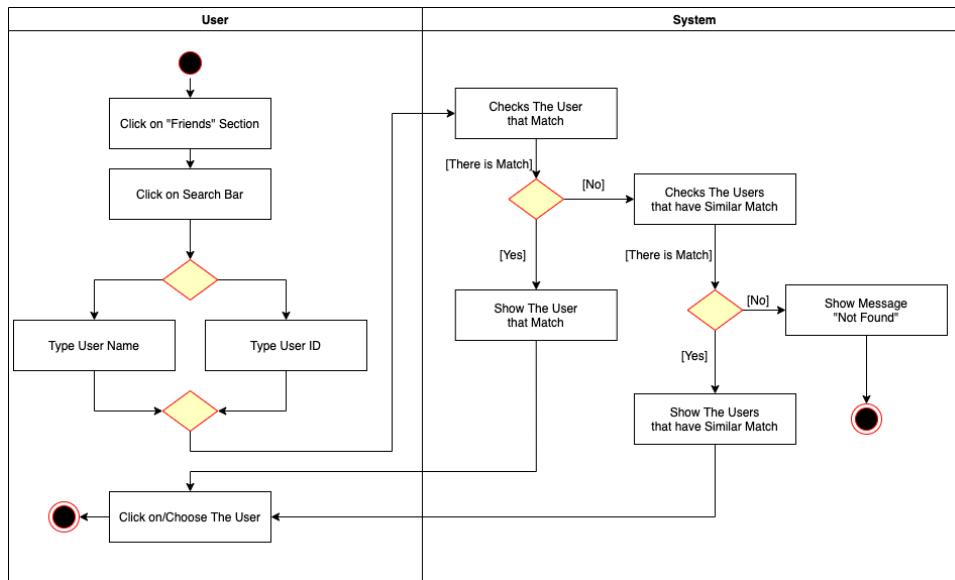
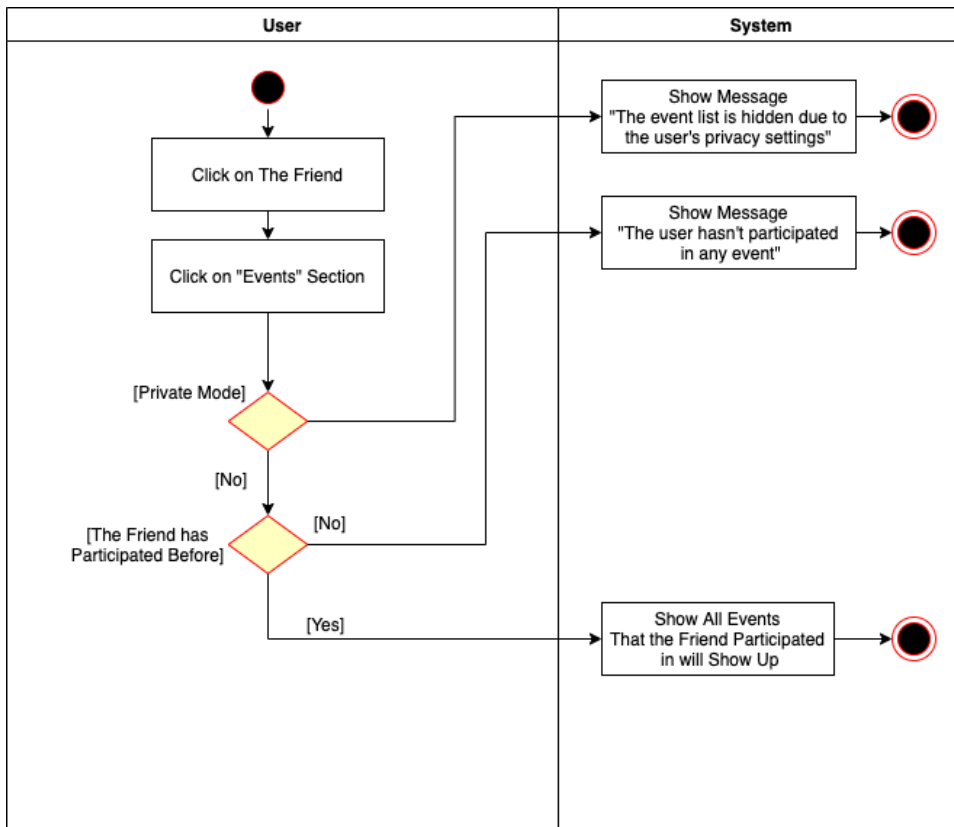


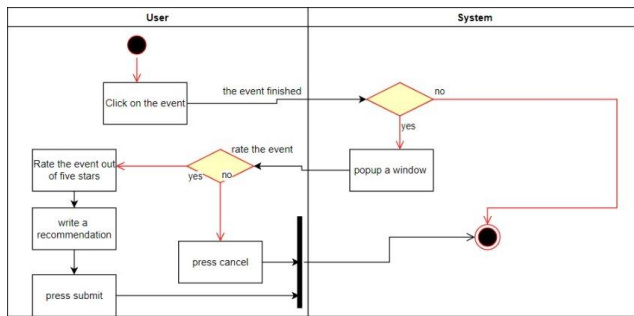
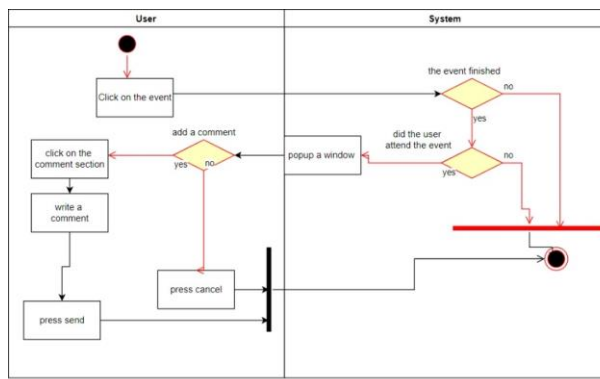
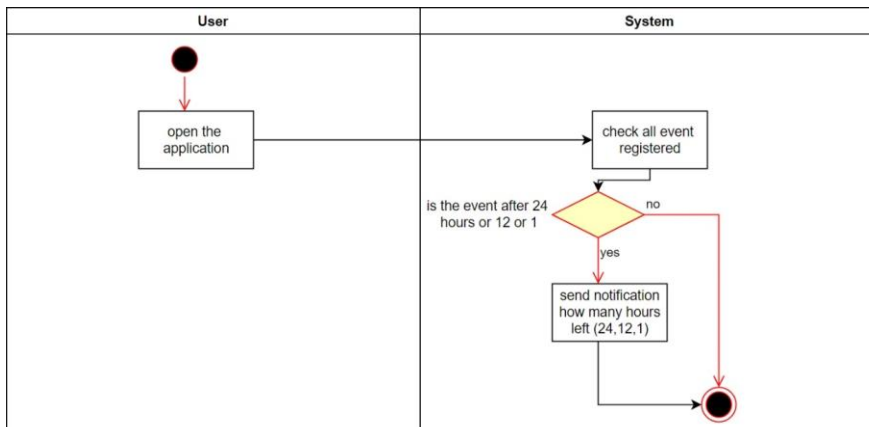
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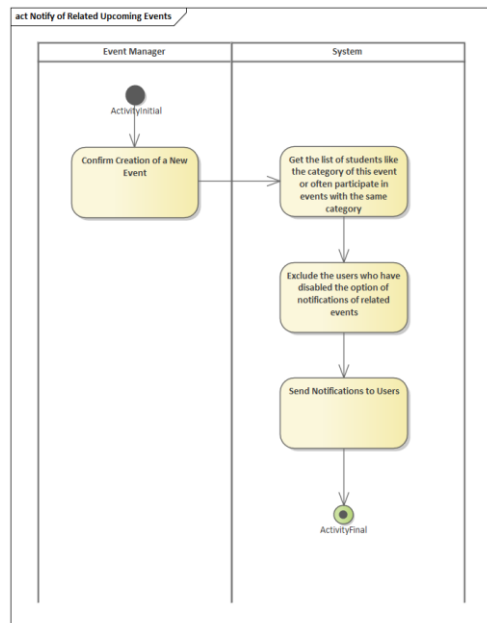
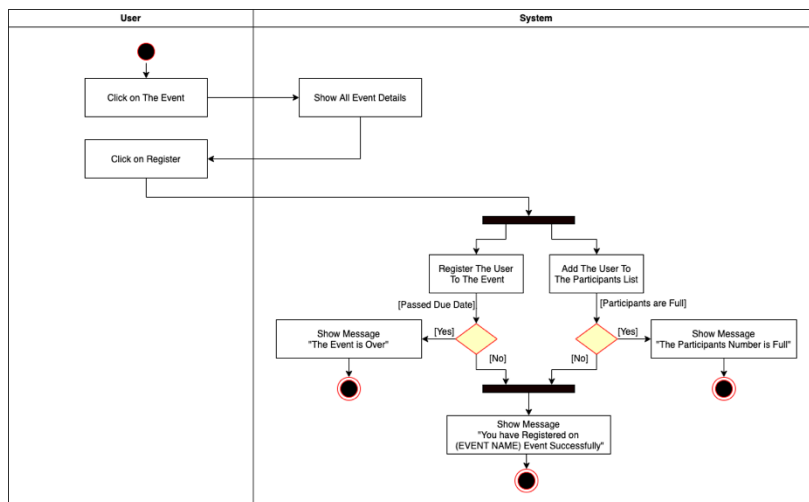


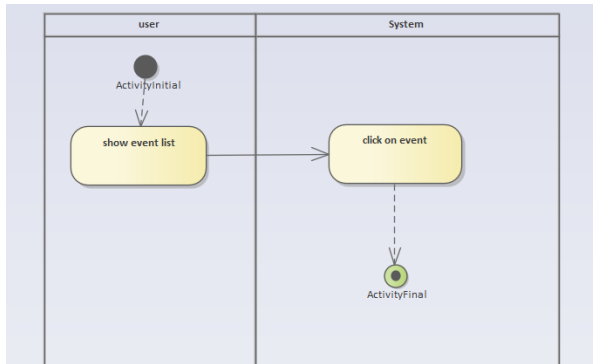
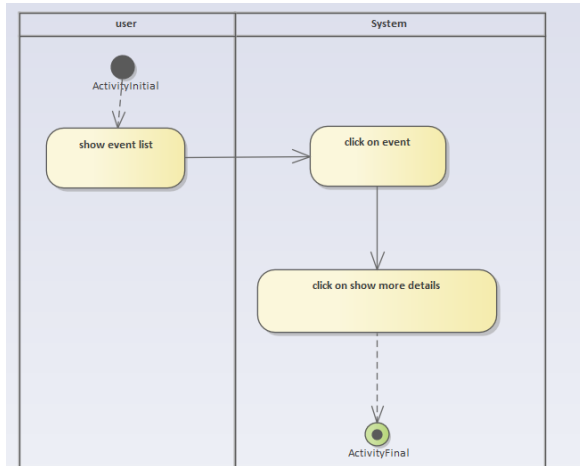
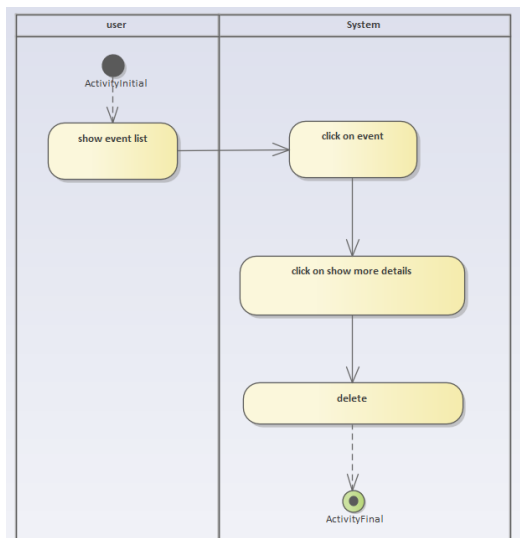
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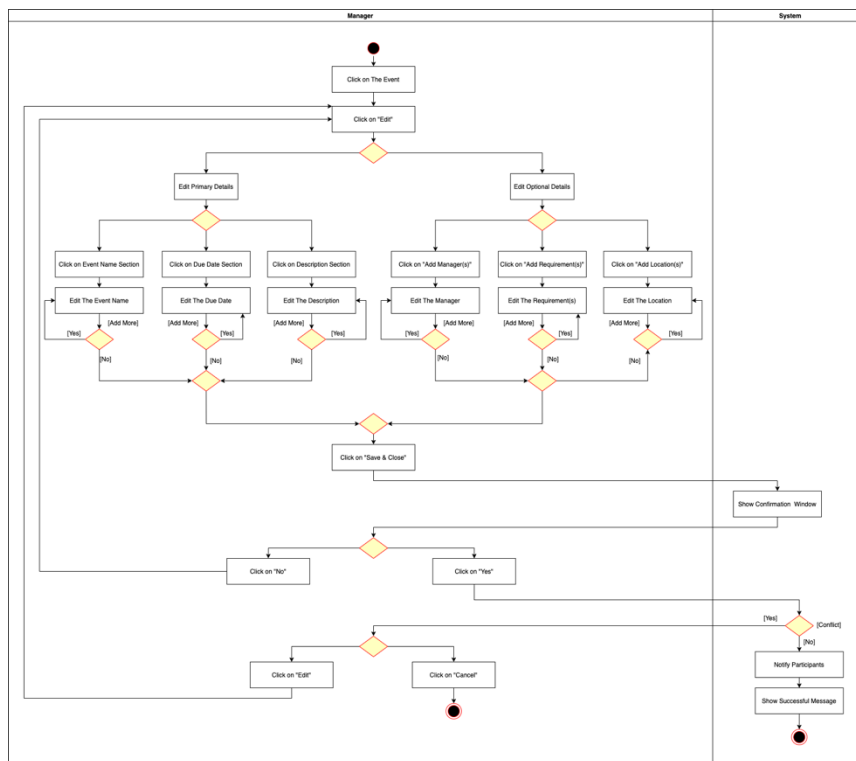
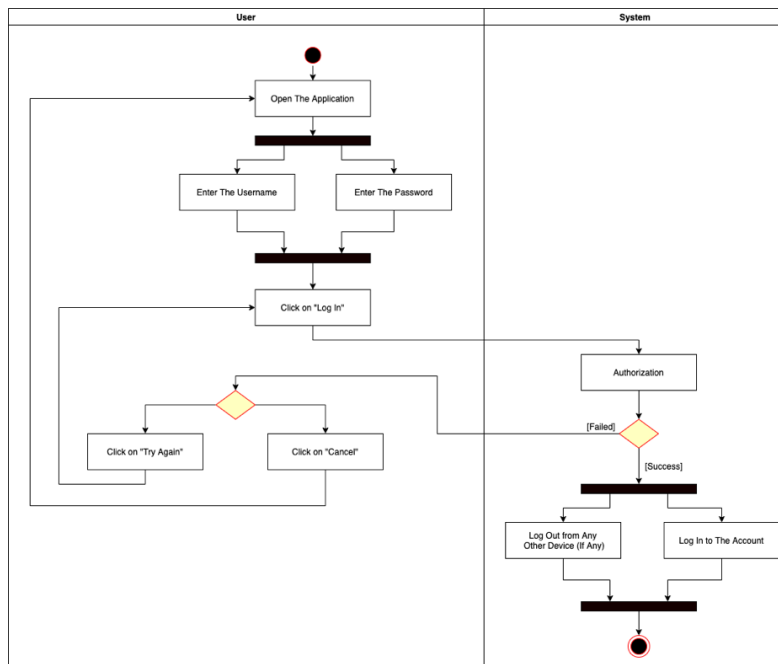
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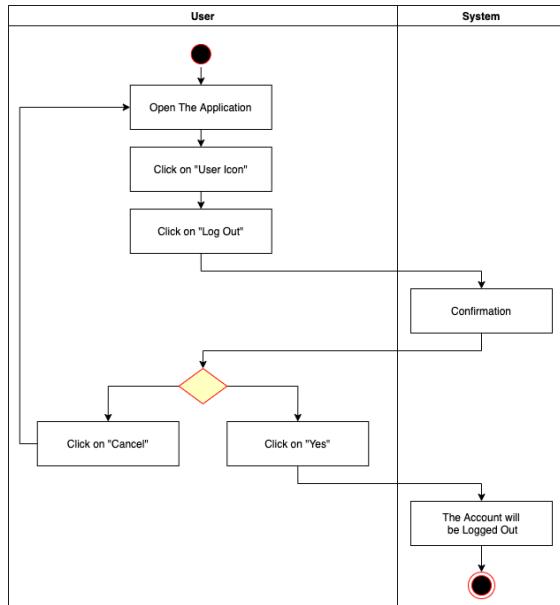
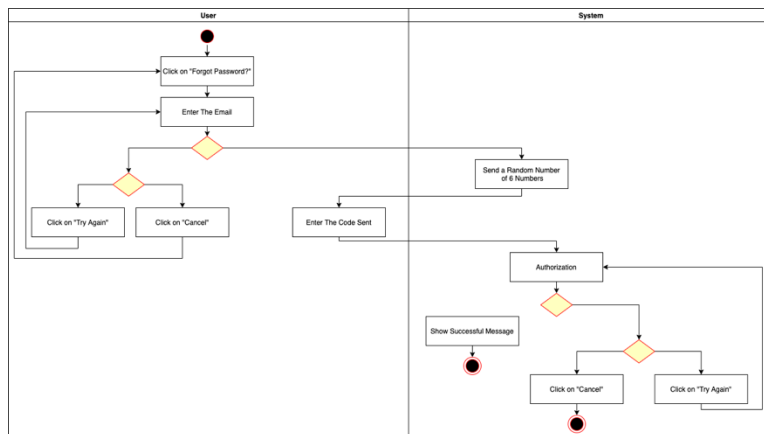
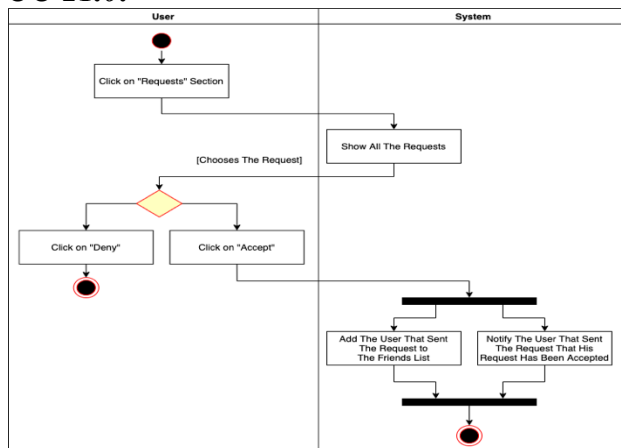
UC-6.0:**UC-6.1:**

UC-7.0:**UC-8.0:****UC-9.0:**

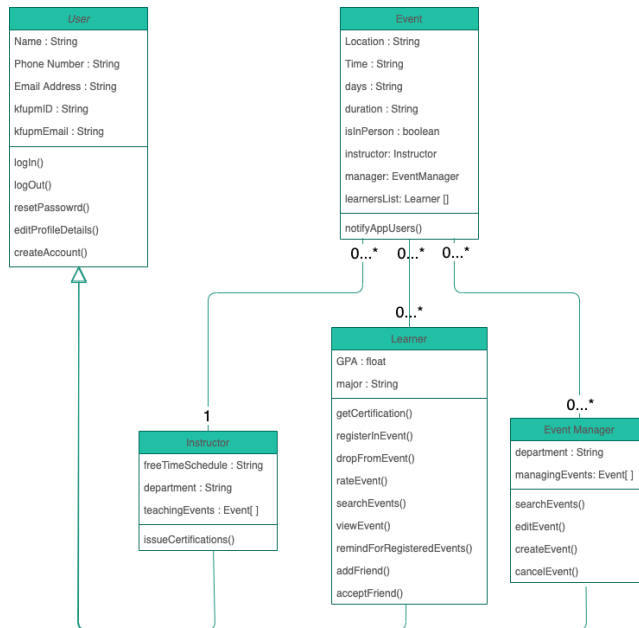
UC-10.0:**UC-11.0:**

UC-14.0:**UC-15.0:****UC-16.0:**

UC-17.0:**UC-18.0:****UC-19.0:**

**UC-20.0:****UC-21.0:**

4.4 System Domain Model



4.5 Non-functional Requirements

4.5.1 Performance Requirements

KEngage system shall be able to communicate with its database at a rate that is no less than 1Hz per second. Moreover, interactions that require no communication with the database shall not take more time than the average for industry standards. Memory and Storage performance shall also comply with industry standards.

In case of features that requires, searching, adding, or viewing such events, KEngage system should be able to operate these requests in less than 15 seconds.

4.5.2 Security Requirements

Security is one of the most important nonfunctional requirements for KEngage. The system provides the user with an account and allows him/her to link it with their university portal accounts in order to increase security. KEngage system must pass the dynamic test of HP WebInspect before releasing the final product.

4.5.3 Safety Requirements

REQ-1: The system should not continue operating if a malicious attack has become obvious

REQ-2: The system should shut the servers down imminently if any sensitive data has been found to be leaked

4.5.4 Other Software Quality Attributes

Maintainability: KEngage system shall follow CISQ maintainability standards.

Usability: The interfaces of the system shall be appealing for users, user friendly and easy to learn. The system shall follow the UI Guidelines standards that are mentioned in Apple developer website and Material.io.

Integrity: KEngage system can deflect any malicious attack that is high danger

Availability: KEngage system is available 24 hours during the whole week.

Flexibility: KEngage system can handle 15% more users in rush hours

Portability: KEngage system can be run on IOS and Android systems without any change in the behavior of it.

Reliability: KEngage system does not fail when the users of the application is less than 2000 at the same time.

Reusability: KEngage system can be used in IOS and Android systems.

Robustness: KEngage system can handle any wrong inputs with any number of attempts.

Other Requirements

None

5. External Interface Requirements

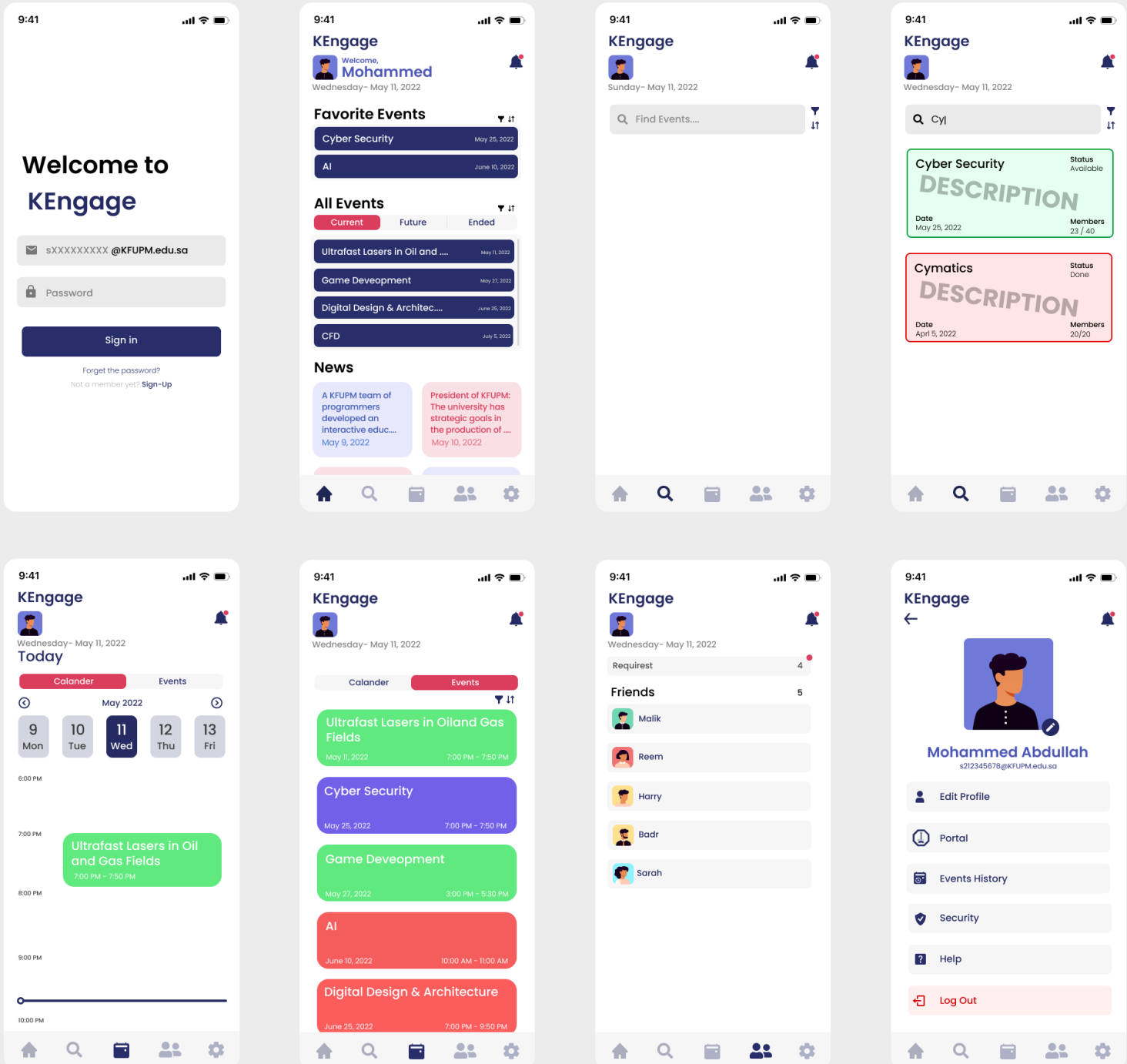
Work Distribution (Phase 3)

Mustafa AlSadah	Fadel Al Abbas	Mohmmad Al Ramis	Abdulrahman Alhathal	Mohammed Alromih
5.3	5.1-Prototype	5.4	5.2	5.1 -Description

5.1 User Interfaces

Upon opening the application, the user will be taken to the welcome screen where he/she can login to their account, recover their password, or sign up for an account if they don't already have one. After logging in or signing up, the application directs the user to the home screen where they can view current, future, and past events. The user then can navigate to any interface in the application. The settings interface can be accessed by pressing on the settings icon that can be found at the bottom right corner of the application. It displays the name and email of the user along with his/her profile image. It also allows the user to access different interfaces such as edit profile and event history. The application also includes a search interface that allows the user to search for a specific event, a view registered event interface that shows current registered events with a calendar option, and a friend list interface that allows the user to view his/her current friends, view friend requests and add new friends. If the user taps on his/her avatar at the top left, it will give him/her options that to edit his/her profile, change the picture/avatar, a direct button that take the user to his/her portal account/page, show events history, security option, help, and log out. Lastly, the application contains a notification interface that shows reminders to the user about upcoming registered events, changes to current events, and recommendations for new events.

A Prototype for KEngage App



5.2 Hardware Interfaces

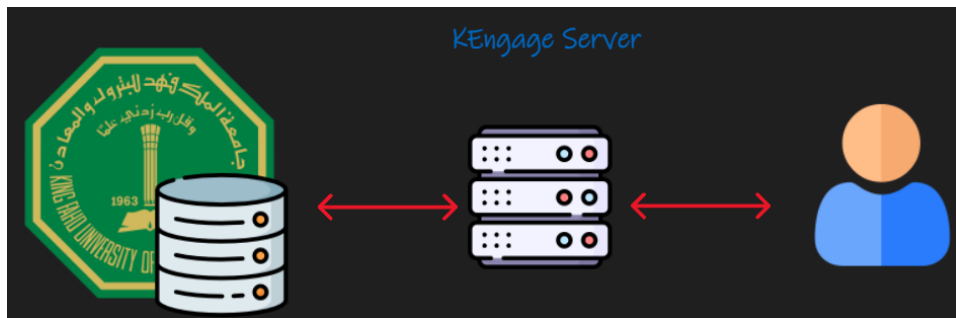
KEngage runs on Android, IOS mobile devices and tablets. No other type of hardware is required.

5.3 Software Interfaces

KEngage runs on IOS 13.0 and above and on Android 9.0 and above operating systems. The software interacts with the KFUPM Database to fetch and post any necessary information like persons names, academic standing, GPA, major, etc... when needed through a designated API with the JSON format using HTTP requests. Due to the Saudi Regulatory Code, all personal information must be stored into servers that are inside the kingdom.

5.4 Communications Interfaces

The only communication interface between mobile devices and the application goes through the cloud server of the application. The application cloud server may communicate with KFUPM Database through its designated API to access any necessary information.



Appendix A: Glossary

Android – A mobile operating system that is designed primarily for touchscreen mobile devices such as smartphones and tablets.

Application programming interface (API) - An application programming interface is a connection between computers or between computer programs.

Data Base (DB) - An organized collection of data stored and accessed electronically.

iPhone Operating System (IOS) – A mobile operating system created and developed by Apple Inc. exclusively for its hardware.

Short Message Service (SMS) - Text messaging service component of most telephone, Internet, and mobile device systems.

User Interface (UI) - The space where interactions between humans and machines occur.

Appendix B: Issues List

- *Communication issues with the KFUPM server database could occur if fundamental changes were implemented to the structure of the KFUPM server.*
- *Having more users at the same time than the capacity of the servers may cause system failure*