KING SAUD UNIVERSITY

COLLEGE OF COMPUTER AND INFORMATION SCIENCES

DEPARTMENT OF SOFTWARE ENGINEERING

SWE312: Software Requirements Engineering

3rd Term 2023

Project

Course Code / Title: SWE 312
Assessment: Project   **Deliverable 2**
Semester / Year: 3rd semester 2023 **Submission Date**: 30/5/2023   **Duration**:8 weeks

STUDENT OUTCOMES:

This phase covers/targets the following student outcomes.

Project Tasks	Relevant SOs/Clos	Marks
Functional, non-functional requirements, and design constraints	SO(2)	
Use cases, Use case description	SO(2)	
Use of SWE case tool	SO(2)	
Report organization, ethical and professional issues		
Teamwork and work distribution, Introduction		

STUDENT IDENTIFICATION:

Section: 46438   **Group Number:** 1

Name: AlAnoud Omar AlFakhri   **ID**: 442200434   **Signature:**

Name: Nouv Batey AlQahtani   **ID**: 442201905   **Signature:**

Name: Najah Khalid AlRowais   **ID**: 442201401   **Signature:**

Name: AlJouri Abdulaziz AlSarami   **ID**: 442202991   **Signature:**

Name: Amal Mousa AlJassas   **ID**: 442201829   **Signature:**

Software Requirements Specification

Entertainment in a Click

Software Requirements Specification

Version 2

30/5/2023

AlAnoud AlFakhri
Nouv AlQahtani
AlJouri AlSarami
Najah AlRowais
Amal AlJassas

Lead Software Engineer

Prepared for
SWE 312 - Software Requirements Engineering
3rd term 2023

Work Distribution

Student Name	Role and Responsibilities
AlAnoud Omar AlFakhri	**Phase 1:** ▪ Document formatting – introduction – Requirements – use case description **Phase 2:** ▪ Document formatting - sequence diagram - Updating phase 1 deliverables.
Nouv Batey AlQahtani	**Phase 1:** ▪ Review and update System Boundary Diagram, Requirements, Use Case Diagram, and Use Case Description. **Phase 2:** ▪ Review and Worked on Class Diagram. ▪ Review Sequence Diagram, Activity Diagram, and Review the whole document.
Najah Khalid AlRowais	**Phase 1:** ▪ Review and update System Boundary Diagram, Requirements, Use Case Diagram, and Use Case Description. **Phase 2:** ▪ Review Class Diagram. ▪ Update Use Case Diagram. ▪ Review and update Sequence Diagram, Activity Diagram, and Mockups.
Aljouri Abdulaziz AlSarami	**Phase 1:** ▪ Reviewed overall document, edited and updated use case diagram and functional and nonfunctional requirements. **Phase 2:** ▪ Reviewed Class Diagram, Activity Diagrams, and Mockup screens. Worked on Sequence Diagrams.
Amal Mousa AlJassas	**Phase 1:** ▪ Review Introduction and the general description. ▪ Review and update System Boundary Diagram, Requirements, Use Case Diagram, and Use Case Description. **Phase 2:** ▪ Review and update Class Diagram, Sequence Diagram, Activity Diagram, and Mockups. ▪ Update Use Case Diagram.

Software Requirements Specification

Revision History

Date	Description	Author	Comments
30/4/2023	Version 1	Alanoud AlFakhri	
30/4/2023	Version 2	Nouv AlQahtani	
30/4/2023	Version 3	Najah AlRowais	
30/4/2023	Version 4	Amal AlJassas	
30/4/2023	Version 5	AlJouri AlSarami	
07/5/2023	Version 6	Alanoud AlFakhri, Nouv AlQahtani, Najah AlRowais, Amal AlJassas, AlJouri AlSarami	
07/26/2023	Version 7	Alanoud AlFakhri	
07/26/2023	Version 8	Nouv AlQahtani	
07/26/2023	Version 9	Najah AlRowais	
07/26/2023	Version 10	Amal AlJassas	
07/26/2023	Version 11	AlJouri AlSarami	
07/30/2023	Version 12	Alanoud AlFakhri, Nouv AlQahtani, Najah AlRowais, Amal AlJassas, AlJouri AlSarami	

Document Approval

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

Signature	Printed Name	Title	Date
	Alanoud AlFakhri	Lead Software Eng.	05/5/2023
	Amal AlJassas	Lead Software Eng.	05/5/2023
	AlJouri AlSarami	Lead Software Eng.	05/5/2023
	Nouv Al-Qahtani	Lead Software Eng.	05/5/2023
	Najah Alrowais	Lead Software Eng	05/5/2023
	Alanoud AlFakhri	Lead Software Eng.	30/5/2023
	Nouv Al-Qahtani	Lead Software Eng.	30/5/2023
	AlJouri AlSarami	Lead Software Eng.	30/5/2023
	Najah Alrowais	Lead Software Eng.	30/5/2023
	Amal AlJassas	Lead Software Eng.	30/5/2023

Software Requirements Specification

Table of Contents

5

Software Requirements Specification

1. Introduction

This document serves as a comprehensive guide for software engineers to design and implement a software product based on the requirements listed here. The SRS document provides a complete overview of the software product containing all the steps used to understand, design and implement Entertainment in a Click system. Starting from stating the purpose of the system and its scope to understand it, then specifying requirements, use case diagrams, some use case's descriptions, object/class diagram, screen mock-ups and analysis models containing activity and sequence diagrams are all used in designing and implementing processes.

1.1 Purpose

The purpose of the SRS document for the "Entertainment in a Click" is to provide a clear and detailed description of the project. In order to ensure that stakeholders and project teams have a clear and comprehensive understanding of the system being developed. As the system serves three primary stakeholders: The customer, Service providers, and GEA staff and anyone who is interested in the Entertainment industry.

1.2 Scope

Entertainment in a Click is an iOS application that will facilitate the workflow in The General Entertainment Authority (GEA) with multiple stakeholders in Saudi Arabia. The system has three primary stakeholders: customers, service providers, and GEA staff. The app will help manage the process of organizing the entertainment services between them. As for the customer, the app will assist customers in searching for events and making secure and convenient ticket purchases using Visa/Mastercard payment systems. The system will enable customers to file complaints within the entertainment industry if they encounter any issues. Service providers will benefit from the app by assisting them in issuing licenses for hosting events and to search for venues and view their details, as the system will integrate with location-based system to provide an accurate location of the venues, as well as obtaining accurate regulations from GEA in one place. For GEA staff, the application will simplify and streamline the work by allowing them to manage stakeholders' communication using a mail server for sending emails.

1.3 Definitions, Acronyms, and Abbreviations

GEA	General Entertainment Authority
Visitors	Non-registered users that can benefit from the system

Software Requirements Specification

Customer	*Registered in "Entertainment in a Click" user who will benefit from the application*
Service Provider (SPs)	*Registered companies that work on organizing events in Saudi Arabia*
GEA's staff	*Registered GEA staff members who have special features in the application*
Mail Server	*A server that handles and delivers email over a network, usually over the internet.*
Event categories	*It can be any of the following categories: Art & Culture, Exhibition, Education, Music, and Sports*
AES265 encryption	*Advanced encryption standard (AES) with a key size of 256 bits*

1.4 References

[1] S. Smith. (2021, June 15). How to Write Good Requirements. [Online]. Available:
https://www.example.com/how-to-write-good-requirements. Accessed on: April 14, 2023.
[2] Canva. (n.d.). Amazingly Simple Graphic Design Software. Accessed on May 12, 2023, from
https://www.canva.com/
[3] Lucidchart. (n.d.). Flowchart Maker & Online Diagram Software. Retrieved April 27, 2023, from
https://www.lucidchart.com/

1.5 Overview

This SRS contains the list of functional and non-functional requirements, design constraints, use case diagram, system boundary diagram and 3 use case descriptions of the listed use cases.
The document is organized into several sections, each providing specific information about the software product being developed.
1. Introduction, Purpose, Scope, Definitions, Acronyms and abbreviations, References and an overview.
  2. list of all Functional Requirements.
  3. list of all Non-functional Requirements:
  4. Design Constraints.
  5. Use Case Diagram.
  6. 3 Use Case Descriptions of required use cases.
  7. System Boundary Diagram

Software Requirements Specification

2. General Description

As Saudi Arabia experiences rapid growth in the entertainment industry, it has become challenging to effectively manage multiple parties and ensure clear communication between them. The system will be developed for General Entertainment Authority "GEA" providing a smart solution to the industry to facilitate clear and efficient communication between the stakeholders. There are multiple factors that can impact the system, the app must be user-friendly and accessible to a wide range of users, including those who may not be tech-savvy. Also, it must be reliable and secure to ensure that users' personal information and payment details are protected. In addition, since the system requires interaction with other systems and platforms, it is crucial to ensure that the integration is well-designed and thoroughly tested to prevent errors, data inconsistencies, and other issues that can negatively impact the user experience. Moreover, the system design should support changing business requirements and regulations and maintainable for any upcoming upgrades or new features to be seamlessly integrated into the system. Therefore, it is essential to address these factors to ensure that the app provides a seamless and reliable user experience.
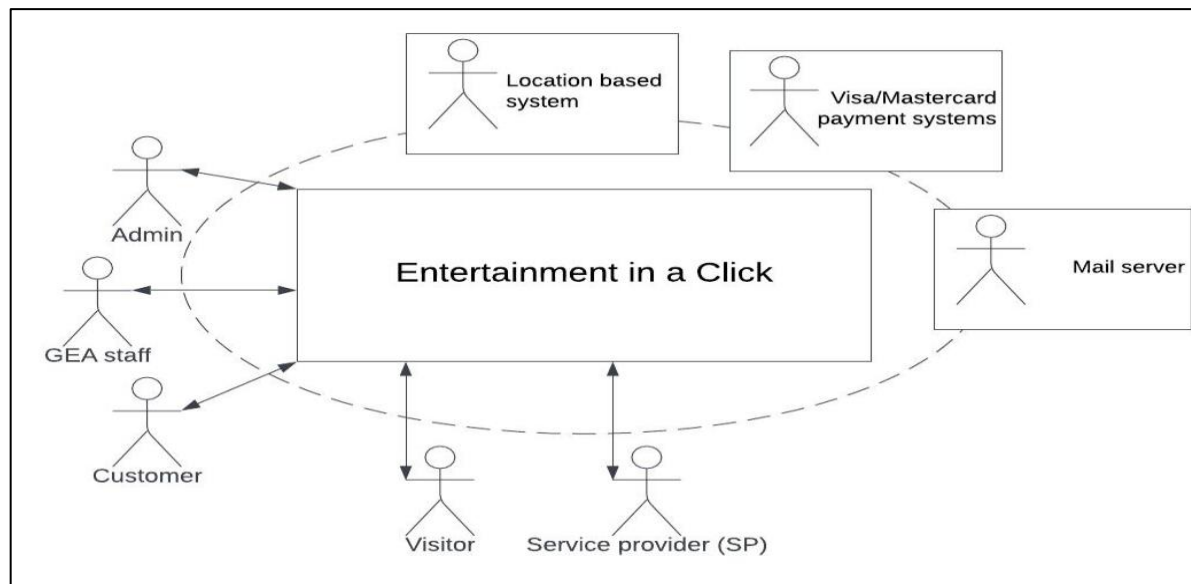
3. Specific Requirements

3.1 System Boundary

Figure 1 System Boundary for Entertainment in a click system

8

3.2 Functional Requirements

3.2.1 Admin Functional Requirements
3.2.1.1 The admin shall be able to log into the system using the given username and password.
3.2.1.2 The admin shall be able to add GEA's staff accounts by completing and submitting the staff registration form which includes (GEA's staff's first name, last name, email, username, and password).
3.2.1.3 The admin shall be able to remove customers' accounts.
3.2.1.4 The admin shall be able to remove service providers' accounts.
3.2.1.5 The admin shall be able to remove GEA's staff accounts.
3.2.1.6 The admin shall be able to add the venues by providing venue's information (location, capacity, pictures, availability, description).
3.2.1.7 The admin shall be able to edit the venues.
3.2.1.8 The admin shall be able to delete the venues.
3.2.1.9 The admin shall be able to add event categories (Art & culture, exhibition, education, and entertainment).
3.2.1.10 The admin shall be able to edit event categories.
3.2.1.11 The admin shall be able to delete event categories.
3.2.1.12 The admin shall be able to view event reviews written by customers.
3.2.1.13 The admin shall be able to block any inappropriate review written by a customer.
3.2.1.14 The admin shall be able to block the customer account after 5 blocked reviews.
3.2.1.15 The admin shall be able to give the approval to register the service provider.
3.2.1.16 The admin shall be able to log out from the system.

3.2.2 Service Provider Functional Requirements
3.2.2.1 The service provider shall be able to register in the system by providing their information (first name, last name, email, phone number, company name, company address, commercial record, username, password).
3.2.2.2 The service provider shall be able to log into the system using a username and password.
3.2.2.3 The service provider shall be able to view GEA regulations.
3.2.2.4 The service provider shall be able to search for venues by name.
3.2.2.5 The service provider shall be able to view venues detailed information (capacity, cost, and contact information)
3.2.2.6 The service provider shall be able to raise a request for issuing a license by filling a form includes the event information (event name, event logo, event description, event date, time, location (using maps), audience, tickets price, tickets information, rules of the event, regulations of the event, city, the capacity of the event's location, number of expected attendees, attendees age limit, cost, earnings).
3.2.2.7 The service provider shall be able to view their license requests status (accepted / pending / declined).
3.2.2.8 The service provider shall be able to update his/her account information.
3.2.2.9 The service provider shall be able to log out from the system.

3.2.3 GEA staff Functional Requirements

3.2.3.1 The GEA staff shall be able to log into the system using a username and password.

3.2.3.2 The GEA staff shall be able to view license requests issued by service providers.

3.2.3.3 The GEA staff shall be able to accept the service providers' request.

3.2.3.4 The GEA staff shall be able to decline the service providers' request.

3.2.3.5 The GEA staff shall be able to view customers' complaints.

3.2.3.6 The GEA staff shall be able to update the complaint status (resolved / in progress).

3.2.3.7 The GEA staff shall be able to post new regulations.

3.2.3.8 The GEA staff shall be able to update his/her account information.

3.2.3.9 The GEA staff shall be able to log out from the system.

3.2.4 Customer Functional Requirements

3.2.4.1 The customer shall be able to create an account by providing their information (first name, last name, email, phone number, username, password).

3.2.4.2 The customer shall be able to log into the system using a username and password.

3.2.4.3 The customer shall be able to search for events.

3.2.4.4 The customer shall be able to view events' information.

3.2.4.5 The customer shall be able to write reviews on any event.

3.2.4.6 The customer shall be able to rate the event that has been attended from a scale of 1 to 5 (with 5 being the highest rating).

3.2.4.7 The customer shall be able to purchase tickets through the application and pay for it via Visa/MasterCard payment system.

3.2.4.8 The customer shall be able to view his/her purchased tickets.

3.2.4.9 The customer shall be able to set a reminder to receive a notification a day prior the start of an event he paid for.

3.2.4.10 The customer shall be able to file a complaint against any event to the GEA.

3.2.4.11 The customer shall be able to update his/her account information.

3.2.4.12 The customer shall be able to log out from the system.

3.2.5 System visitor Functional Requirements

3.2.5.1 The system visitors shall be able to search for events.

3.2.5.2 The system visitors shall be able to view event information and location

3.2.6 System Functional Requirements

3.2.6.1 The system shall send a confirmation email to the customer upon successful completion of ticket purchase.

3.2.6.2 The system shall set the status of newly submitted license to "pending".

3.2.6.3 The system shall notify the GEA staff about the submission of a new license request.

3.2.6.4 The system shall send an email containing GEA's staff username and password for newly registered accounts using the mail server.

3.2.6.5 The system shall notify admin of a service provider registration request.

3.2.6.6 The system shall publish the event once the GEA staff approves the license request.

3.2.6.7 The system shall send a notification to the customer a day before the start of an event.

Software Requirements Specification
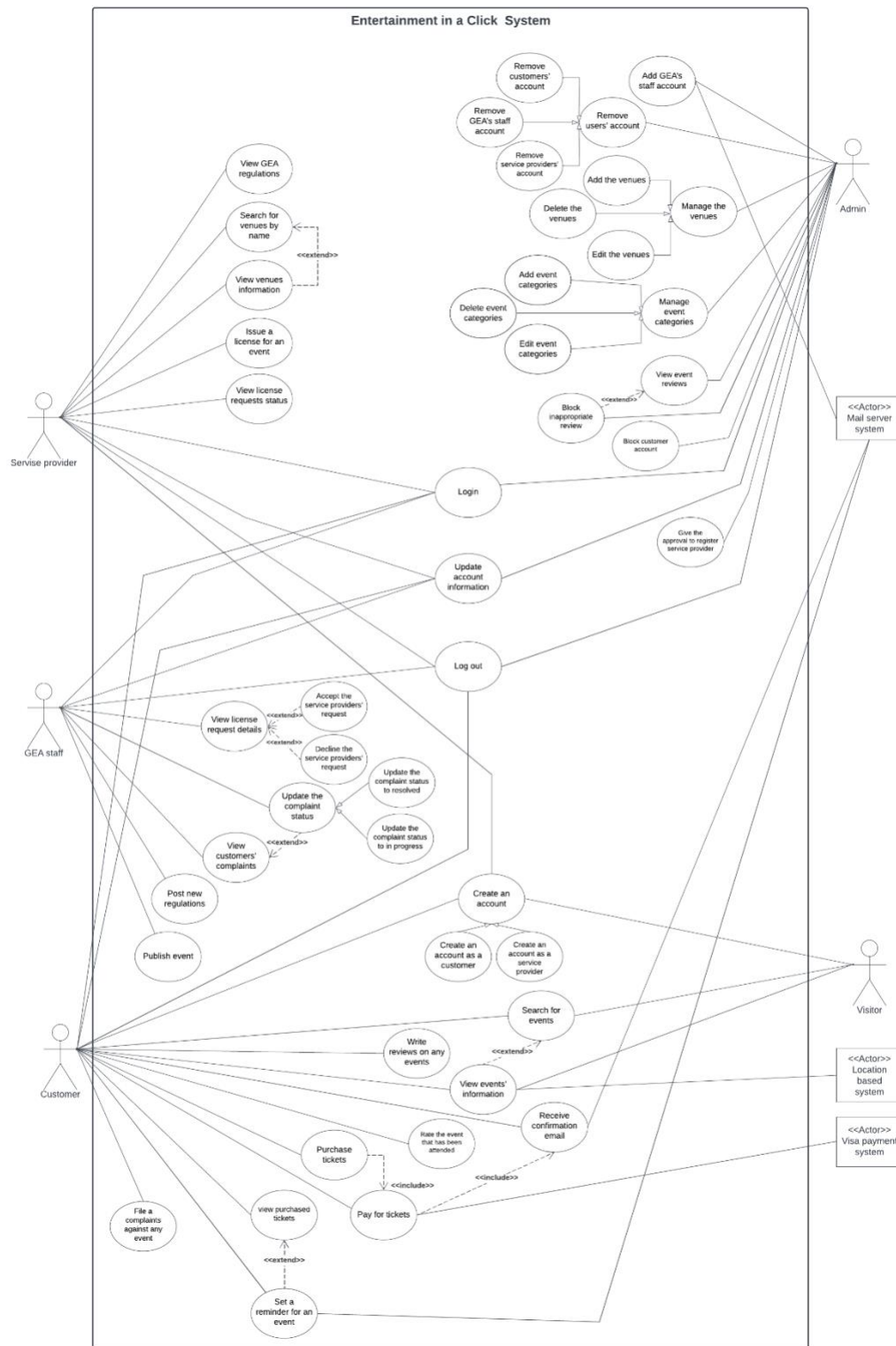
3.3 Use Case Diagram

Figure 2 Use Case Diagram: defines the relationship between the actors and the system.

11

Software Requirements Specification

3.4 Use Case Description

3.4.1 Use Case #1: Create account as service provider

Use Case Description	
System: Entertainment in a Click	
Use Case Name: Create account as service provider	
Primary actor: Visitor	Other actors:
Description: This use case allows the visitor to create an account as a Service Provider in the application.	
Relationships ▪ Includes: None ▪ Extends: None	
Pre-conditions: -	
Primary Actor **(Service Provider)**	**System** **(Entertainment in a click)**
1- This use case begins when the visitor selects the "Register as service provider" option. 3- The service provider fills the form and selects the "submit" option.	2- The system displays a form that requires to fill up the following: • - First name • - Last name • - Email • - Phone number • - Company name • - Company address • - Commercial record • - Username • - Password 4- The system will notify the admin about this request. 5- The system displays a "Thank you, you will be informed when your account is approved" message. 6- End use case.

Software Requirements Specification

Alternative and exceptional flows:

If in step 3, the service provider misses a required field then:
1. the system displays a message indicating a required field is missing.

2. step 3 is resumed.

Post-conditions:

Successful Condition: the account request is created and sent to the admin.

Failure Condition: the account request is created and sent to the admin.

Software Requirements Specification

3.4.2 Use Case #2: Purchase ticket

Use Case Description

| System: Entertainment in a Click |
| Use Case Name: Purchase ticket |

Primary actor: Customer	Other actors: Visa Payment systems

Description: This use case allows the customer to purchase a ticket, so he/she can attend a desired event.

Relationships

- **Includes:** Send confirmation Email

- **Extends:** Send reminder

Pre-conditions:
The customer is successfully logged-in.
The customer has purchased a ticket before.

Actor (Customer)	System (Entertainment in a click)	Secondary Actor (Visa Payment system)
1-This use case begins when the customer selects the "purchase ticket" option.	2- The system checks if it's not the first time for the customer to purchase a ticket.	
	3- The system asks the customer to enter the VISA password.	
4- The customer enters his/her password and selects the "Submit" option.	5- The system transfers the information to the payment system.	6- Payment system verifies payment details and checks for enough balance.
		7.The payment system withdraws the required amount.
	8- Use case "Send confirmation email" is performed.	

14

	9- The system displays a success message.	
	10-The system asks the customer if he/she wants to be reminded a day before the event.	
11- The customer chooses "yes".		
	12- Use case "Send reminder" is performed.	
	13-the number of tickets is decremented.	
	14- End use case.	

Alternative and exceptional flows:

- If at step 6, the payment system checked the balance and the balance turned out to be not enough:
  1- The system displays an error message indicating that the balance is not enough.
  2- End the use case.

Post-conditions:

Successful Condition: The customer successfully purchased tickets.

Failure Condition: The customer fails to purchase tickets.

Software Requirements Specification

3.4.3 Use Case #3: Issue license request

Use Case Description
System: Entertainment in a Click
Use Case Name: Issue license request
Primary actor: Service provider (SPs)   Other actors: none
Description: This use case allows the service provider to issue a license request, so they can get the approval for holding their events.
Relationships ▪ Includes: *none* ▪ Extends: *none*
Pre-conditions: The service provider is successfully logged-in.

Actor (Service provider)	System (Entertainment in a click)
1- This use case begins when the Service provider selects the "issue license request" option.	2- The system displays a form for the service provider to fill: • - Event name • - Event logo • - Event description • - Event date • - Event time • - Event location • - Event audience • - Tickets price and information • - Rules and regulations of the event • - City • - Capacity of the event's location • - Number of expected attendees • - Attendees age limit • - Event cost and earnings
3-the service provider fills the form and selects the "submit" option.	
	4- the system will send a notification to the GEA's staff 5- the system displays a success message and the request number. 6- end use case.

16

Alternative and exceptional flows: If in step 3, the service provider miss a required field then: 1. The system displays a message indicating a required field is missing. 2. step 3 is resumed.	

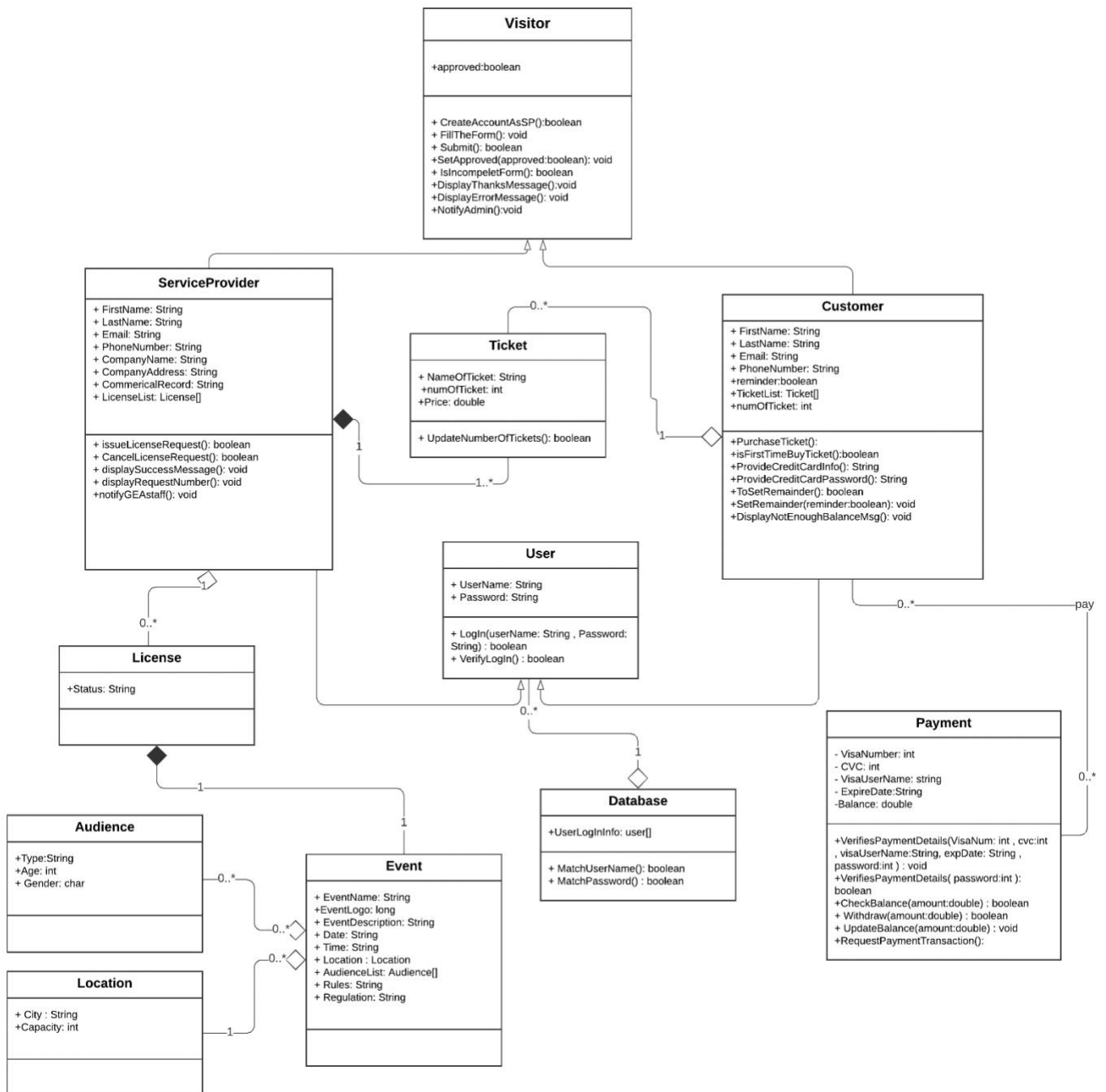| |
|---|
| Post-conditions:

    Successful Condition: The Service providers license request is successfully submitted.

    Failure Condition: The Service provider fails to submit the license request. |

Software Requirements Specification

3.5 Class Diagram

Figure 3Class Diagram for Entertainment in a Click application

18

Software Requirements Specification

3.6 Non-Functional Requirements

3.6.1   The system should be available in both Arabic and English languages.

3.6.2   The system should be capable of storing the data of registered events for five years.

3.6.3   The system should encrypt all user's private data using AES265 encryption(full name, email , payment details, IP address) .

3.6.4   The system should be able to handle at least 50,000 simultaneous users.

3.6.5   The system should backup all registered events every day.

3.6.6   The system should be available 99% of the time.

3.6.7   The system should have a five to ten millisecond range response time.

3.7 Design Constraints

3.7.1   The system map must be designed to be compatible with a location-based system.

3.7.2   The system must be designed on top of iOS operating system.

3.7.3   The system must interact with payment systems (Visa & Mastercard).

3.7.4   The system must be interoperable with Mail service system.

Software Requirements Specification

4 Analysis models

4.1 Sequence Diagrams

4.1.1 Use Case #1: Create account as service provider

In this sequence diagram, the flow of events required to create an account as service provider is shown. The visitor begins the use case by Creating account as service provider. The system then displays a form that the visitor fills out with their information. The system then checks if the visitor filled out all required fields and prompts a message if not and creates a loop of such until all fields are completed. Once the form is submitted, the system notifies the admin then displays a thank you message to visitor.
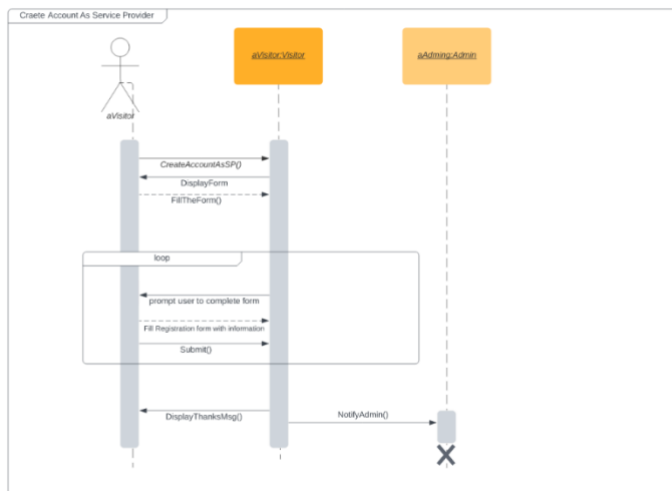
Figure 4Sequence diagram for Create account as service provider

20

Software Requirements Specification

4.1.2 Use Case #2: Purchase ticket

The sequence diagram shows the flow of events between the customer and the Visa payment system, and how they interact with each other in order to allow a customer to purchase a ticket.
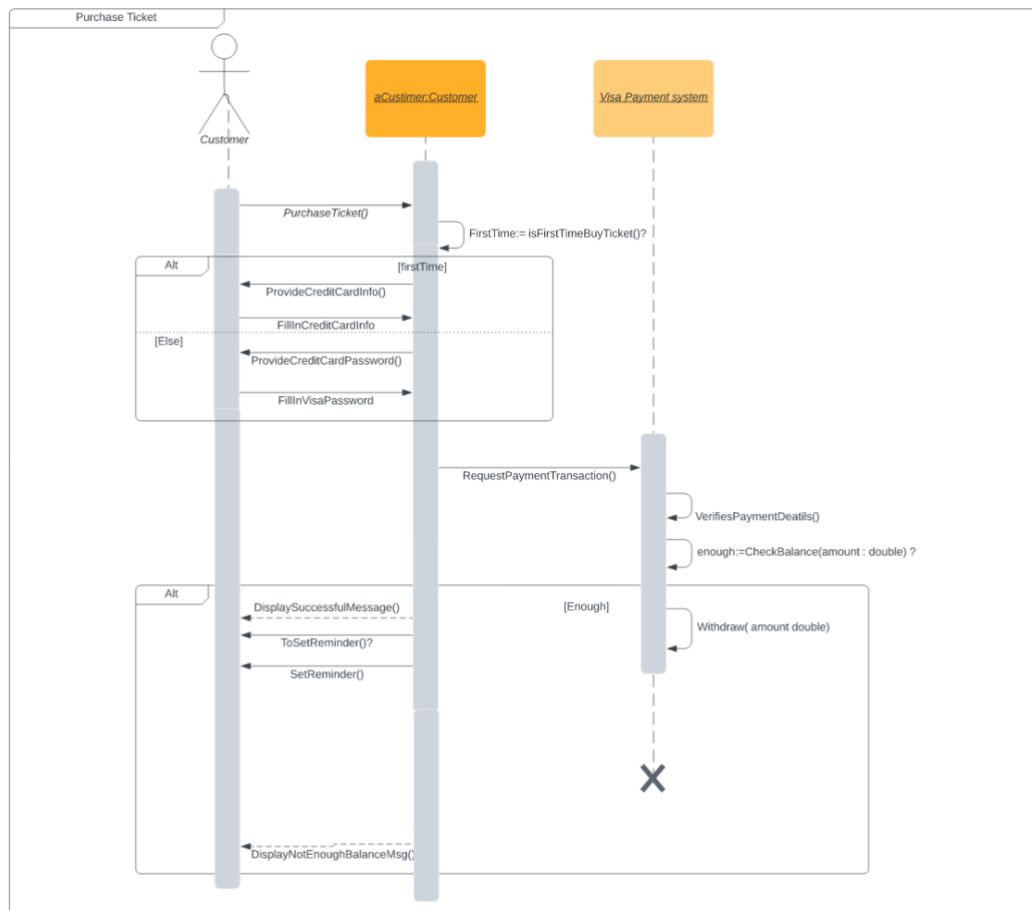
Figure 5Figure 4Sequence diagram for purchase a ticket

Software Requirements Specification

4.1.3   Use Case #3: Issue license request

The sequence diagram shows the flow of events between the Service Provider and
the GEA staff, and how they interact with each other to issue a license request for the service provider
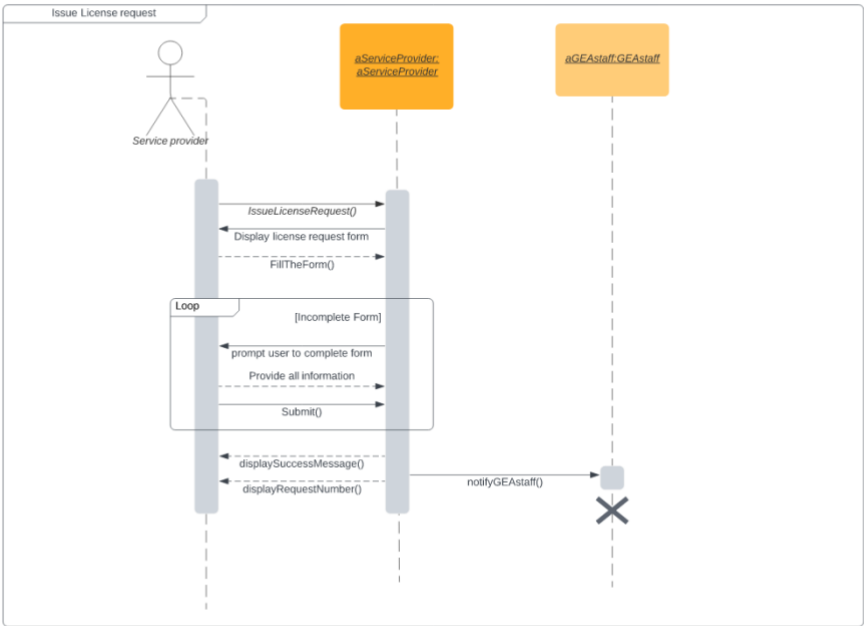
Figure 6Figure 4Sequence diagram for issue a license request

22

Software Requirements Specification

Register as service provider
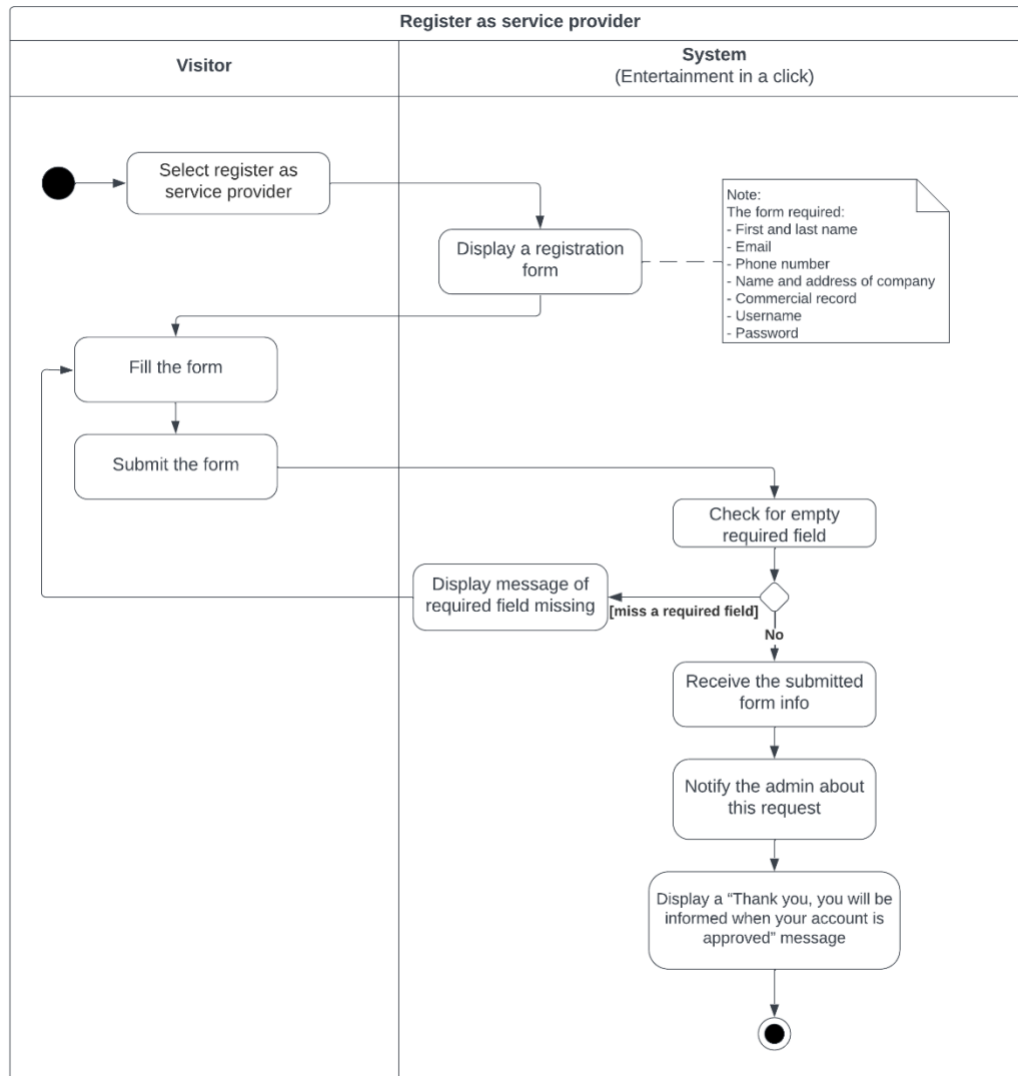
4.2 Activity Diagrams
4.2.1 Sequence diagram of issue license request use case

23
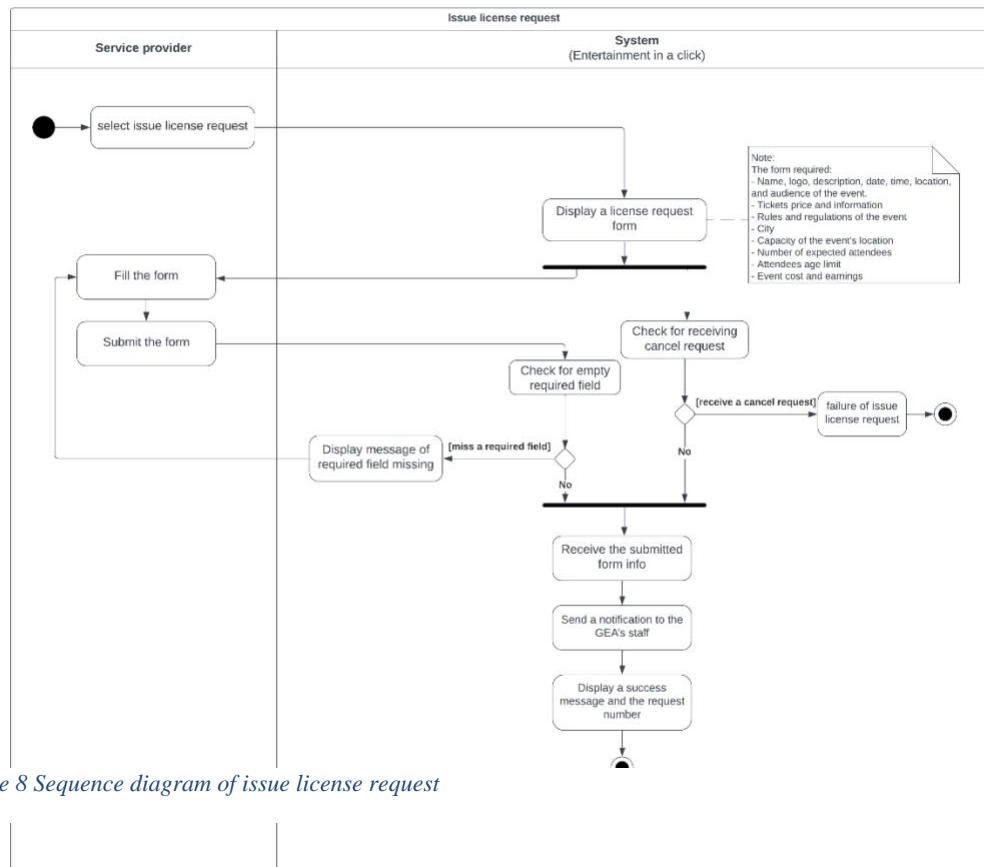
Figure 8 Sequence diagram of issue license request

4.2.2 Sequence diagram of register as service provider use case

24

Figure 9 Sequence diagram of register as service provider

5 Mockup screens
5.1 Mockup screens of create account as service provider use case
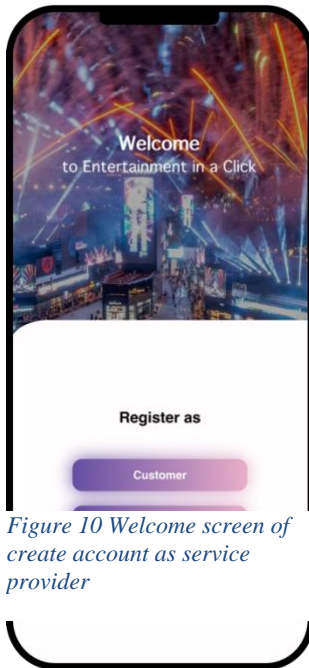
Figure 10 Welcome screen of create account as service provider
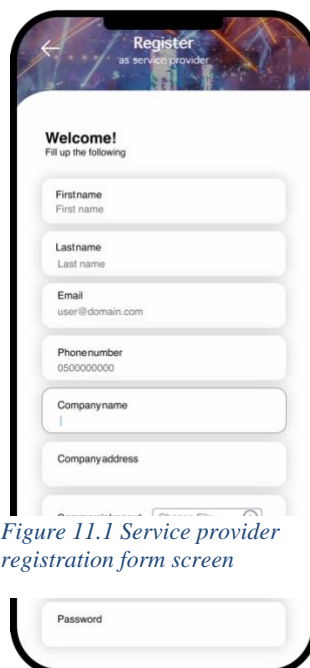
Figure 11.1 Service provider registration form screen
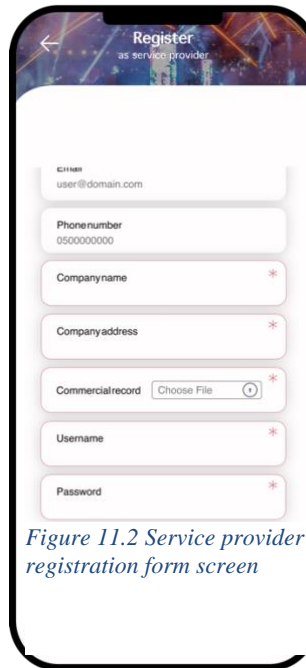
Figure 11.2 Service provider registration form screen
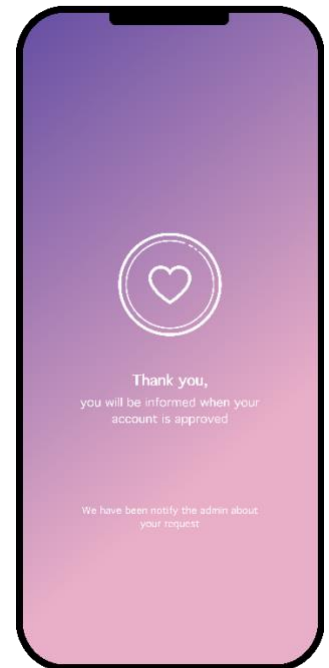
Figure 12 Thanks screen

5.2 Mockup screens of issue license request use case
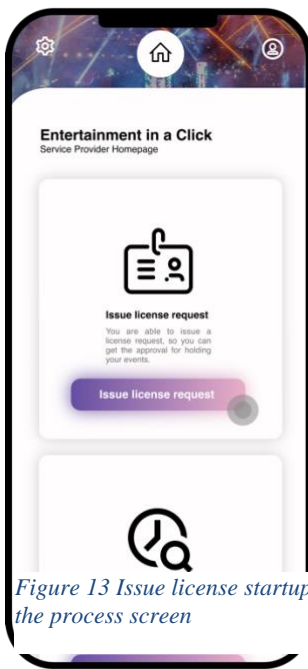
Figure 13 Issue license startup the process screen

5.3 screens
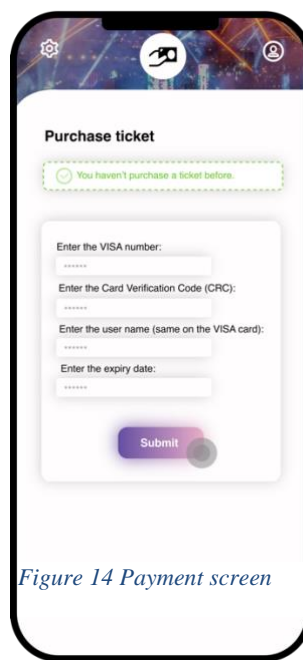
Figure 14 Payment screen

Mockup of
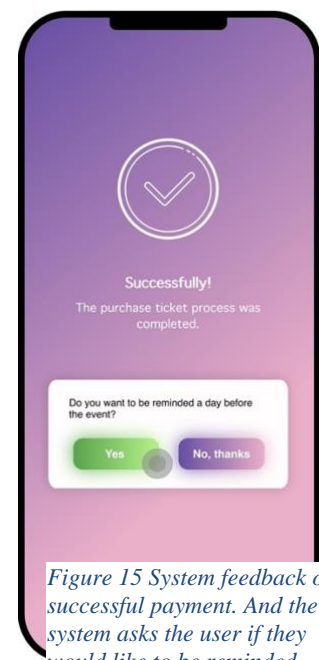
Figure 15 System feedback of successful payment. And the system asks the user if they would like to be reminded

26

Software Requirements Specification
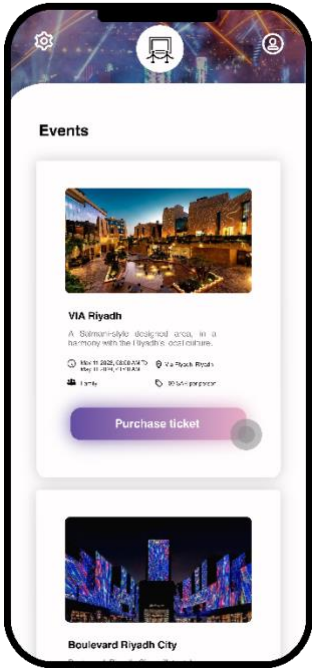
purchase ticket use case

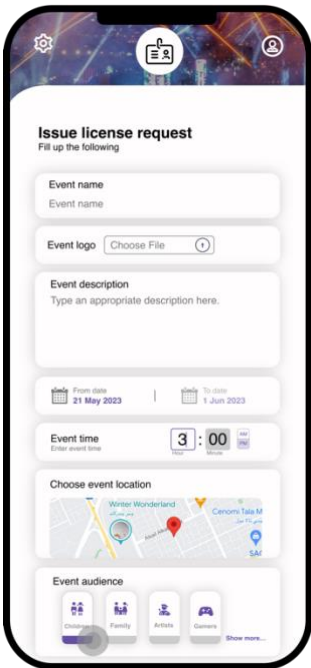*Figure 16 Purchase ticket screen*

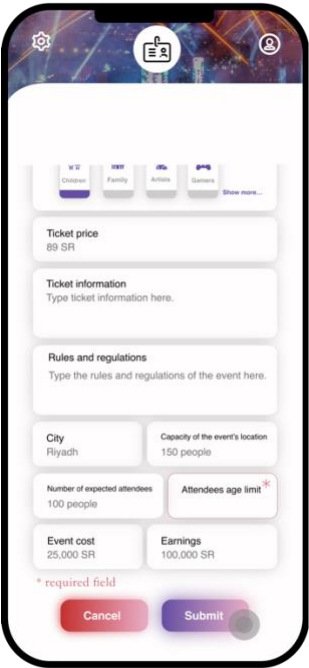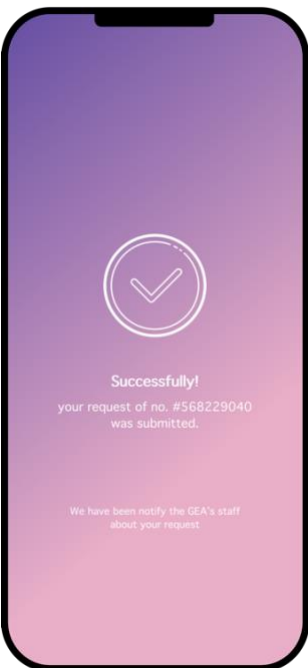*Figure 17.1 Purchase ticket form screen*

Figure 17.2 Purchase ticket form screen

Figure 18 System feedback of successful license request

27

Software Requirements Specification