Software Requirements Specification

for

SHAHEEN

for

Version 3.0

Prepared by Ahmed Qazi 22100234

Hamd Jalil 22100083

Abdullah Saleem 22100125

Rachna Golf and Country Club

Created on: 10 - 10 - 2020

Table of Contents

Revision History

Name	Date	Reason For Changes	Version
Abdullah Saleem	21-10-2020	Updating the case point tables.	2.0
Abdullah Saleem	13-12-2020	Updating minor changes in use cases	3.0

1. Introduction

1.1 Purpose

The purpose of this document is to describe the software requirements for Shaheen which is being built to provide a centralized database for employees, customers and stakeholders of a Golf and Country Club.

1.2 Document Conventions

BOD	Board of Directors
GM	General Manager

1.3 Intended Audience and Reading Suggestions

This document presents the portfolio of Shaheen and can be used by developers present or future to introduce updates or fix bugs. The rest of the SRS contains an overall description of Shaheen including the use classes, characteristics, product features and scope. The document also provides a

comprehensive list of use cases which Shaheen can perform including any triggers, actors, general pathway and limitations of the software. An overview of system and cybersecurity requirements is also provided.

1.4 Project Scope

Shaheen is a state-of-the-art software which can be used to centralize employer and customer databases for any service outlet similar in nature to Rachna Golf and Country Club. It will act as an automated regulatory system which can be used to evaluate, regulate and enhance employee efficiency and productivity. It will allow stakeholders and/or the board of directors to access a comprehensive evaluation of the performance of the service outlet. An interface to cater for any employee or customer needs such as applications, and to provide a hassle free environment to make bookings, purchases and register complaints online.

2. Overall Description

2.1 Product Perspective

Shaheen is a software product which is self-contained. It is a comprehensive system which allows the whole Golf and Country Club to function and helps the staff to manage it and the customers to access it. Its scope is not too limited. The software caters to everyone, from customers to Board of Directors to the employees and the managerial staff along with the finance department. It has features which accommodate every department and share useful information between them.

2.2 Product Features

Shaheen would be expected to provide a comprehensive management system catering to the needs of the Customer, Board of Directors, Managers, other Employees and the Finance Department. It would be a portal where the user logs in and is granted access to different functions and features based on their profile and status. The customer can make bookings throughout the club and pay via credit/debit card.
The Board of Directors would have full access to all the summaries and stats and can schedule a meeting.
The management can use the portal to request and access funds and manage the budget and approve or cancel bookings.The finance department takes care of the financial records, processes payments,

gives salaries and loans to employees. The employees will have to keep and update their profile. They can apply for leave, loan and claim insurance.

2.3 User Classes and Characteristics

Customer:

Anyone who buys membership or wants to buy the membership. They can then make booking and payments.

Board of Directors:

Those who are stakeholders. They can look at stats and summaries and schedule meetings.

Managerial Staff:

This includes the General Manager and managers of the swimming pool, golf fields, halls and gym. The rest of the managers report to the General Manager.

Finance Department Officers:

They are responsible for taking care of financial matters of the club.

Employees:

Include but not limited to managerial, domestic services and janitorial staff etc.

3. Use Cases and System Features

Use Case List

Primary Actor	*Use Cases (ID)*
Employee	4, 5, 1, 2, 3
BOD	4, 5, 8, 9
Customer	4, 5, 6, 7
Managerial Staff	4, 5, 10, 11
Finance Department	4, 5, 12, 13, 14, 15

Employee 1

Use Case ID:	1		
Use Case Name:	Application for Loan		
Created By:	Hamd Jalil	Last Updated By:	Hamd Jalil
Date Created:	11 Oct 2020	Date Last Updated:	11 Oct 2020

Actors:	Employee
Description:	Employees can use this in order to avail a loan for any personal needs.
Preconditions:	1. Employee's financial records must be verified 2. No pre-existing dues for a prior loan 3. Supporting documents should be available 4. Employee must be logged into the Shaheen portal.
Postconditions:	1. Adjust salary according to chosen plan
Normal Flow:	1. Employee chooses the loan application option on the portal. 2. The resulting interface checks if any pre-existing loan is due. 3. Portal prompts to enter reasons and supporting documents. 4. Application is sent to the finance department to review.

	5. After confirmation is received from finance, system deposits approved amount into employee bank account.
	6. Salary is cut by 17% until it adds up to the loan payment.
Alternative Flows:	1. Finance rejects application.
	2. Employee is notified.
Exceptions:	1. Employee already has loan amount due.
	2. System notifies employee and withdraws application.
Includes:	1. Payment gateway/ service provider.
	2. External email client.
Priority:	High
Frequency of Use:	5 times a month
Business Rules:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	System will use a 3rd party client for transactions.

Employee 2

Use Case ID:	2		
Use Case Name:	Request Leave		
Created By:	Hamd Jalil	Last Updated By:	Hamd Jalil

Date Created:	10 Oct 2020	Date Last Updated:	10 Oct 2020

Actors:	Employee
Description:	Employee can apply for leave as stated in bylaws
Preconditions:	1. Employee must not have had more than 20 leaves in the current year. 2. Employee must be logged into Shaheen account.
Postconditions:	1. Update number of allowed leaves left for the employee.
Normal Flow:	1. Employee choses leave application on Shaheen portal. 2. Shaheen checks how many leaves the employee has utilized current calendar year. 3. Shaheen displays the number of leaves left. 4. Shaheen prompts the employee to enter the number of leaves to be requested. 5. A leave notice is sent to the employee and departments supervisor.
Alternative Flows:	None.
Exceptions:	1. Employee has no leaves left in the current calendar year hence the application is withdrawn by the system and employee is informed. 2. Requested number of leaves exceeds number of allowed leaves; returns to step 4.

Includes:	1. External email client for mailing
Priority:	Medium
Frequency of Use:	Maximum of 20 times a year
Business Rules:	Application must be sent atleast 7 days prior if leave exceeds 2 working days.
Special Requirements:	None
Assumptions:	No room for paid leaves exceeding the number of allowed leaves for the employee.
Notes and Issues:	Employee may directly approach their supervisor in exceptional circumstances.

Employee 3

Use Case ID:	3		
Use Case Name:	Observe quarterly evaluation		
Created By:	Hamd Jalil	Last Updated By:	Hamd Jalil
Date Created:	10 Oct 2020	Date Last Updated:	10 Oct 2020

Actors:	Employee

Description:	Use case to observe a quarterly evaluation report by the immediate supervisor
Trigger:	
Preconditions:	1. Employee must be logged into Shaheen
Postconditions:	1. Mark report as "viewed"
Normal Flow:	1. Employee requests to observe quarterly evaluation report. 2. System displays the report in pdf form.
Alternative Flows:	
Exceptions:	1. Report unavailable 2. An email is sent to the supervisor responsible for uploading the report.
Includes:	None
Priority:	High
Frequency of Use:	5 times per quarter
Business Rules:	Supervisors are required by bylaws to produce quarterly evaluation reports of their team members.
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Customer 1

Use Case ID:	4	
Use Case Name:	Sign up	
Created By:	Hamd Jalil	Last Updated By:	Hamd Jalil
Date Created:	10 Oct 2020	Date Last Updated:	10 Oct 2020

Actors:	Customer
Description:	Customer will invoke this use case when they want to create a profile on country club's database
Trigger:	Invalid login id
Preconditions:	1. Customer's username and email doesn't already exist
Postconditions:	1. Add info to shaheen database.
Normal Flow:	1. Customer opens Golf and Country Club's website via any link. 2. Customer choses sign up option on interface 3. System prompts with a sign up form 4. System sends verification ID to email 5. Customer enters verification ID

	6. Customer is a part of database and has access to all Shaheen services.
Alternative Flows:	None
Exceptions:	1. Invalid email 2. Back to step 3 3. Invalid code entered 4. Back to step 4 5. Email already exists 6. System invokes Sign in use case
Includes:	Sign in
Priority:	High
Frequency of Use:	200 per day
Business Rules:	None
Special Requirements:	None
Assumptions:	Customers should have easy access to all services offered.
Notes and Issues:	None.

Customer 2

Use Case ID:	5
Use Case Name:	Sign in

Created By:	Hamd Jalil	Last Updated By:	Hamd Jalil
Date Created:	10 Oct 2020	Date Last Updated:	10 Oct 2020

Actors:	Customer, employee, BOD, Managerial staff and Finance officers.
Description:	Allows a user to sign into the interface with relevant credentials
Trigger:	None
Preconditions:	1. Should already have used Sign up
Postconditions:	Display relevant interface according to actor
Normal Flow:	1. Open Country Club's website. 2. Interface prompts user to enter email and password. 3. User enters credentials. 4. System verifies credentials. 5. User logs into the interface
Alternative Flows:	**Incorrect email or password.** 1. Prompt user to re-enter credentials /chose forget password. 2. User re-enters; back to step 4. 3. User choses forget password. 4. An email is sent with a code to reset password. 5. System prompts user to enter reset code 6. User enters reset code 7. System prompts for new password. 8. System resets password and enters user to the interface.

Exceptions:	**Email not in database:** 1. System prompts user to sign up. 2. User choses Sign up. 3. System invokes Sign up use case.
Includes:	Sign up use case
Priority:	High
Frequency of Use:	50 times per day
Business Rules:	None
Special Requirements:	Well-functioning email sending framework.
Assumptions:	None
Notes and Issues:	None

Customer 3

Use Case ID:	6		
Use Case Name:	Booking		
Created By:	Ahmed Qazi	Last Updated By:	Ahmed Qazi
Date Created:	10 Oct 2020	Date Last Updated:	10 Oct 2020

Actors:	Customer
Description:	Allows a user to make a booking of the facilities of the club.
Trigger:	None
Preconditions:	1. Should already have used Sign up as customer
Postconditions:	Display relevant interface according to actor
Normal Flow:	User selects a date and time from the available slots.
Alternative Flows:	Date and time unavailable.
Exceptions:	**None**
Includes:	Sign up use case
Priority:	Medium
Frequency of Use:	10 times per day
Business Rules:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Customer 4

Use Case ID:	7

Use Case Name:	Get Membership		
Created By:	Ahmed Qazi	Last Updated By:	Ahmed Qazi
Date Created:	10 Oct 2020	Date Last Updated:	10 Oct 2020

Actors:	Customer
Description:	Customer has to pay membership fees depending on the membership plan they have chosen.
Trigger:	One year has passed since last payment.
Preconditions:	1. Should already have used Signed Up and bought a membership plan.
Postconditions:	Display relevant interface according to actor
Normal Flow:	User logs in and is asked to choose a membership plan. Also given the option to upgrade to a better plan.
Alternative Flows:	In case of no payment in 10 days. Membership is cancelled.
Exceptions:	**None**
Includes:	Sign up use case
Priority:	Medium
Frequency of Use:	10 times per day
Business Rules:	None

Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Board of Directors 1

Use Case ID:	8		
Use Case Name:	Summaries and Stats		
Created By:	Ahmed Qazi	Last Updated By:	Ahmed Qazi
Date Created:	10 Oct 2020	Date Last Updated:	10 Oct 2020

Actors:	BOD
Description:	Allows a member of the board of directors to access the financial summaries and statistics and performance statistics of the staff. Basically, a member of BOD can look at anything in the database.
Trigger:	None
Preconditions:	1. Should have Sign Up as a member of the BOD
Postconditions:	Display summaries and stats.

Normal Flow:	User clicks on the button to access all the information regarding financial records and employee performance etc.
Alternative Flows:	None
Exceptions:	None
Includes:	Log in as a member of BOD
Priority:	Medium
Frequency of Use:	Once or twice every month
Business Rules:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Board of Directors 2

Use Case ID:	9		
Use Case Name:	Meeting of Board of Directors		
Created By:	Ahmed Qazi	Last Updated By:	Ahmed Qazi
Date Created:	10 oct 2020	Date Last Updated:	10 oct 2020

Actors:	BOD
Description:	Allows members of BOD to conduct online meeting for the new chairman.
Trigger:	None
Preconditions:	
Postconditions:	Meeting is held.
Normal Flow:	BOD logs in and selects either to put in a request for meeting or if there is a meeting, all BOD members are notified.
Alternative Flows:	
Exceptions:	None
Includes:	Log in as a member of BOD
Priority:	Medium
Frequency of Use:	Once every year or if enough requests are put in by the majority of members.
Business Rules:	None
Special Requirements:	None

Assumptions:	None
Notes and Issues:	None

Managerial Staff 1

Use Case ID:	10		
Use Case Name:	Fill Evaluation		
Created By:	Ahmed Qazi	Last Updated By:	Ahmed Qazi
Date Created:	10 Oct 2020	Date Last Updated:	10 Oct 2020

Actors:	General Manager, Managerial Staff
Description:	The managerial staff requests the General Manager to fill evaluations.
Trigger:	Whenever a request is submitted.
Preconditions:	One month must have passed since last request.
Postconditions:	Evaluation is done based on previous history of the departments.
Normal Flow:	General manager logs in and looks if there are requests for evaluations. He/She fills evaluations and submits.

Alternative Flows:	
Exceptions:	None
Includes:	Log in
Priority:	High
Frequency of Use:	Once every 4 month by most managerial staff
Business Rules:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Managerial Staff 2

Use Case ID:	11		
Use Case Name:	Department Maintenance		
Created By:	Ahmed Qazi	Last Updated By:	Ahmed Qazi
Date Created:	10 Oct 2020	Date Last Updated:	10 Oct 2020

Actors:	Managerial Staff
Description:	The user closes the department and its bookings for maintenance when a month has passed or if enough damages/complaints are reported.
Trigger:	None
Preconditions:	One month must have passed since last maintenance or if 10 complaints are reported.
Postconditions:	Maintenance status is updated.
Normal Flow:	User logs in and checks the status of the department. If there are 10 complaints reported or if a month has passed, it closes the department for maintenance.
Alternative Flows:	None
Exceptions:	None
Includes:	Log in
Priority:	Medium
Frequency of Use:	Atleast once every month.
Business Rules:	None
Special Requirements:	None
Assumptions:	None

Notes and Issues:	None

Finance 1

Use Case ID:	12	
Use Case Name:	Disperse Salary	
Created By:	Abdullah Saleem	Last Updated By: Abdullah Saleem
Date Created:	11-10-2020	Date Last Updated: 11-10-2020

Actors:	Finance Officer
Description:	The finance officer disperses the salary of all employees at the start of every month.
Trigger:	Finance Officer

Preconditions:	1. Finance Officer should be logged in. 2. Employee status should be normal.
Postconditions:	1. The Golf Club account is debited. 2. Employees accounts are credited with their salaries.
Normal Flow:	1. Finance Officer logs in and chooses the Pay Salaries option. 2. Finance Officer enters the Club's account information. 3. Finance Officer verifies the employee list. 4. Finance Officer chooses the Proceed option. 5. The software debits amount from Club's account and credits the employees with salary. 6. Finance Officer receives a confirmation notification. 7. Employees receive a text message for salary received.
Alternative Flows:	None
Exceptions:	**.0 E1 Club's account has insufficient balance:** 1. Software terminates the payment. 2. Software notifies the officer. **.0 E2 Employee account info is incorrect:** 1. Software skips that employee and moves on to the next employee. 2. Software notifies the officer.
Includes:	Log in as officer.

Priority:	High
Frequency of Use:	Once a month
Business Rules:	None
Special Requirements:	Employees and Club should have a bank account.
Assumptions:	None
Notes and Issues:	None

Finance 2

Use Case ID:	13		
Use Case Name:	Loan Approval		
Created By:	Abdullah Saleem	Last Updated By:	Abdullah Saleem
Date Created:	11-10-2020	Date Last Updated:	11-10-2020

Actors:	Finance Officer
Description:	Finance Officer approves or rejects the loan request of any employee.
Trigger:	Some employee applying for loan.
Preconditions:	1. Some employee applied for loan.
Postconditions:	2. Employee gets loan and Club's account is debited. 3. Employee doesn't get loan and Club's account remains the same.
Normal Flow:	1. Finance Officer opens the loan application. 2. Finance Officer verifies the application and checks if the employee is deserving. 3. Finance Officer approves the loan and credits the employee's account with the loan amount. 4. Finance Officer updates the employee accounts info with loan approval.
Alternative Flows:	1. Finance Officer rejects the loan. 2. System sends an email to the employee about loan rejection. 3. Application is closed.

Exceptions:	**.0 E1 Club's account has insufficient balance:** 1. System notifies the officer. 2. Officer rejects the loan. 3. System notifies the employee about loan rejection. 4. Application is closed. **.0 E2 Employee account info is incorrect:** 1. System notifies the officer. 2. Officer puts a hold on the loan. 3. System notifies the employee about hold.
Includes:	None
Priority:	Medium
Frequency of Use:	Once a fortnight
Business Rules:	None
Special Requirements:	1. Club's account has balance. 2. Employee is deserving.
Assumptions:	Employees account info is correct.
Notes and Issues:	None

Finance 3

Use Case ID:	14	
Use Case Name:	Process Payments	
Created By:	Abdullah Saleem	Last Updated By: Abdullah Saleem
Date Created:	11-10-2020	Date Last Updated: 11-10-2020

Actors:	Finance Officer
Description:	Officer processes the payments made to the club.
Trigger:	Members pay any kind of fee.
Preconditions:	1. Officer is logged into the software.
Postconditions:	1. Club's account is credited with the payment.

Normal Flow:	1. Officer opens the payments tab. 2. Officer checks for pending payments. 3. Officer verifies the payment. 4. System sends an e-mail to the member about successful payment. 5. Officer updates the member portal.
Alternative Flows:	1. The payment is not received. 2. Officer puts a hold on the member portal.
Exceptions:	None
Includes:	Payment Making
Priority:	High
Frequency of Use:	Few times a week
Business Rules:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Finance 4

Use Case ID:	15	
Use Case Name:	Revenue Summary	
Created By:	Abdullah Saleem	Last Updated By: Abdullah Saleem
Date Created:	11-10-2020	Date Last Updated: 11-10-2020

Actors:	Finance Officer
Description:	Finance Officer generates the revenue summary.
Trigger:	Finance Officer
Preconditions:	1. Some revenue is made by the club over the time period specified.
Postconditions:	None

Normal Flow:	1. Finance Officer chooses Revenue Summary tab. 2. Officer specifies the time period and chooses Proceed option. 3. System generates the summary of the entire payments made during the specified time period. 4. Officer prints or saves the summary.
Alternative Flows:	None
Exceptions:	None
Includes:	None
Priority:	Low
Frequency of Use:	Once a month
Business Rules:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

4. External Interface Requirements

4.1 User Interfaces

The system shall provide a sophisticated interface to every user. The managers will be able to read complaints and view the status of the employees under him/her. The employees will be able to apply leave and view status. The Board of Governors shall have a simple interface with a meeting option. The members will be able to book a complaint, book a facility and check their payments.

4.2 Hardware Interfaces

The system will require printers for the printing of the receipts or records. Also, monitor, mouse and keyboard for the input at all terminals.

4.3 Software Interfaces

The system will make contact with third party API's for the purpose of payment processing through credit cards. It will have a connection with a server for the purpose of storing its database.

4.4 Communications Interfaces

The system will be communicating with the members through e-mail for the confirmation of booking of facilities or payment processing updates. There will be standard network server communications. Complaint inputs will be taken through a dialogue box.

5. Other Non-Functional Requirements

5.1 Security Requirements

The admin log in would only be allowed for authorized devices. Care should be taken while authorizing devices should be at trusted locations.

5.2 Software Quality Attributes

The software will be accessible through the internet as it is a web page. It shall be viewable through smart devices as well as laptops and computers, hence, portability and availability. The software will be reliable as no data will be leaked or shown to other than the approved personnel.

Use Case Points Calculation Sheet

Unadjusted Use Case Points

Item	Item Description	Complexity	Count	Weight	Weighted Count
1	Number of Actors	Simple		1	
		Average	1	2	2
		Complex	4	3	12
2	Number of Use Cases	Simple		5	
		Average	7	10	70
		Complex	8	15	120
Unadjusted Use Case Points (UUCP)					**204**

Complexity Factor

Factor	Description	Rating 0=Irrelevant 5=Essential	Weight	Weighted Rating
T1	Distributed system	0	2	0
T2	Response performance objectives	4	1	4
T3	End-user efficiency	4	1	4
T4	Complex internal processing	3	1	3
T5	Code must be reusable	3	1	3
T6	Easy to install	5	0.5	2.5
T7	Easy to use	5	0.5	2.5
T8	Portable	5	2	10
T9	Easy to change	4	1	4

T10	Concurrent	4	*1*	4
T11	Secure	4	*1*	4
T12	Access to 3rd parties	3	*1*	3
T13	User training facilities	0	*1*	0
Technical Factor (TF) = sum of weighted ratings				**44**
Technical Complexity Factor (TCF) = 0.6 + (0.01 x TF)				**1.04**

Environmental Factor

Factor	Description	Rating 0=Lowest 5=Highest	Weight	Weighted Rating
F1	Familiar with Rational UP	2	*1.5*	2.5
F2	Application experience	3	*0.5*	1.5
F3	Object-oriented experience	2	*1*	2
F4	Lead analyst capability	3	*0.5*	1.5
F5	Motivation	5	*1*	5
F6	Stable requirements	3	*2*	6
F7	Part-time workers	0	*-1*	0
F8	Difficult programming language	1	*-1*	-1
Environmental Factor (EF) = sum of weighted ratings				**17.5**
Environmental Value (EV) = 1.4 - (0.03 * EF)				**0.88**

Use Case Points

Use Case Points (UCP) = UUCP * TCF * EV	**186.7**