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United Real Estate Online

Software Requirement Specification Document

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Document component	Weight	Grade
Organization	5%	
Introduction	10%	
Process Model	10%	
User Functional Requirement	20%	
Use Case diagram	40%	
Non Functional Requirements	15%	
	Total	

1 Introduction

This software requirement document describes fully the United Real Estate Online system that is agreed upon on signed contract by United Real Estate Company. This document will describe the functionalities that is expected of the system to deliver, external interfaces which interact with the system and users, expected system attributes, such as security and efficiency, and design constraints during the implementation phase.

1.1 Purpose

The purpose of this document is to specify the requirements of the United Real Estate Online system to illustrate what are the expected features to be found, the system menus and interfaces and basic functionalities of the system. This software specification document is intended for United Real Estate representatives and potential developers.

The most significant objective of this document is to create a common ground between the stakeholders and the developers in order to develop a valid system, thus reducing risk, ambiguity and contradictions. This document will guide the developer through the development of the system leaving no room for speculation. Additionally, the stakeholders will be able to review this document multiple times before they finalize their requirements in a clear and systematic way in this document, which will reduce the efforts of potential system developers and risk of future requirement change requests.

1.2 Scope

The system is called United Real Estate Online system in production by contract for the United Real Estate. The system is a database management system whose main functionalities and responsibilities are to facilitate, manage and automate the sales, investments, advertisement and customers' data storage through user interface. The system will provide analysis and show trends based on customers recent sales and browsing history. The system shall be user-friendly, efficient, flexible and secure.

The United Real Estate Online system will require the customer to create an account and login in order to access basic user functionalities such as buy, sell or rent properties. Name, email, password, mobile number, location are required to create an account, payment details are optional but the lack thereof will only allow the user to book an appointment with United Real Estate representatives when attempting to buy or rent a property.

The customers can browse a user-friendly interface that displays the list of available United Real Estate properties and their details, rates, comments, locations, pictures and video. The list of the properties is ordered by its distance to user location by default. A user may choose to sort the list of properties according to price or ratings. A user may search through properties using keywords or specifying a criteria. A user may select a property to expand and receive more information about it, and suggestions for related properties will be given as advertisements in the side.

The customer can buy or rent a property through instant payment through the payment details in his account or book an appointment with United Real Estate representative. Additionally, the user may choose to invest his property with United Real Estate which will prompt the user to choose a date for an appointment with United Real Estate representative to inspect the property and meet the potential investor.

The system administrators, United Real Estate employees, are able to access a single hard-coded admin account to modify the list of properties. The system admin shall be able to add properties by specifying the property details, location, pictures and video. Also, the system admin shall be able to modify properties variables such as the property details, rates, comments, location, pictures and video or delete the property completely. The system admin shall be able to view system logs and statistical data of the system.

The system should be intuitive to use and feature user-friendly interface. Additionally, the system subsystems shall be easily configured and customized. Last but not least, the system should be flexible and maintainable to allow the addition of new features.

1.3 Overview

The United Real Estate Company are in need of a database management software (DBMS) to facilitate their sales, expand their outreach and increase their properties visibility.

The document will introduce and give overall description of the system, and illustrate the current issues facing the current United Real Estate business model and present how the current requirements will solve them. The process model used will be defined and explained and will be followed by the user and system requirements that will allow the system to start implementation stage under the design constraints stated.

Additionally, the document will discuss the system components that are most susceptible to change and the possible evolutionary development and maintenance that are to be taken into consideration. The conclusion will briefly restate and summarize the main parts of the document.

2 Process Model

The user requirements are volatile and are likely to change. But the system is developed under a contract with a private organization which require the visibility of the development process through project deliverables, Therefore, the chosen model for the core stable components of the system, such as Account, properties browser, subsystems, is the Waterfall model, while the volatile components will be developed under Incremental model.

The incremental model will allow systematic, structured, test-intensive, and efficient way of development. The early release of the subsystems will allow stakeholders to provide feedback while intensively testing the previously implemented components, which means the core components will receive most of the testing . Additionally, the incremental model is very flexible to any requirement change and improvements, which makes it a good choice for volatile user requirements and systems. Waterfall model is very inflexible to change and any change in requirement may be costly and require redocumentation of the whole project but the availability of project deliverables suits the organizational requirement of the system, therefore it is better suited to the core stable requirements components of the system only.

3 User Requirement

3.1 Functional Requirement

Account Subsystem:

- The guest shall be able to create an account of type seller or buyer in order to access each account type exclusive features

- The system shall be able to validate new user account requests automatically through Email Confirmation or SMS.
- The guest shall be able to view other users profiles
- The guest shall be able to login
- The user shall be able to logout
- The buyer and seller may change their account passwords at any time
- The buyer and seller may edit their account information at any time
- The staff shall be able to search all system accounts
- The staff shall be able to block buyers or sellers accounts
- The staff shall be able to warn buyers and sellers accounts
- The staff shall be able to edit a buyers and sellers account information
- The administrator shall be able to create new accounts in the system
- The administrator shall be able to do everything that a staff can do

Properties Browser Subsystem:

- The user shall be able to browse for sale and rental properties online
- The user shall be able to search for properties with specific search criteria such as number of rooms, location, and price.
- The user shall be able to select and expand a property to get more information on the property.

Properties Sale Subsystem:

- The buyer shall be able to book appointment with a company representative when attempting to buy/rent a property.
- The buyer may give a feedback on a seller which will be visible in the seller account

Properties Investment Subsystem:

- The seller may post new properties in the system
- The seller may edit the information of his existing properties in the system
- The seller may remove his existing properties from the system

Properties Notification Subsystem

- The system shall be able to notify the buyers who subscribed to a seller notification list
- The buyer may subscribe to a seller notification list in order to receive a notification whenever the seller posts a new property

Properties Advertisement Subsystem

- The seller shall be able to submit a request for a paid main banner ad in the system
- The seller shall be able to pay for an main banner ad request once it has been approved
- The administrator shall be able to manage the advertisements in the system by modifying the behavior and the list of advertisements

Customer Support Subsystem:

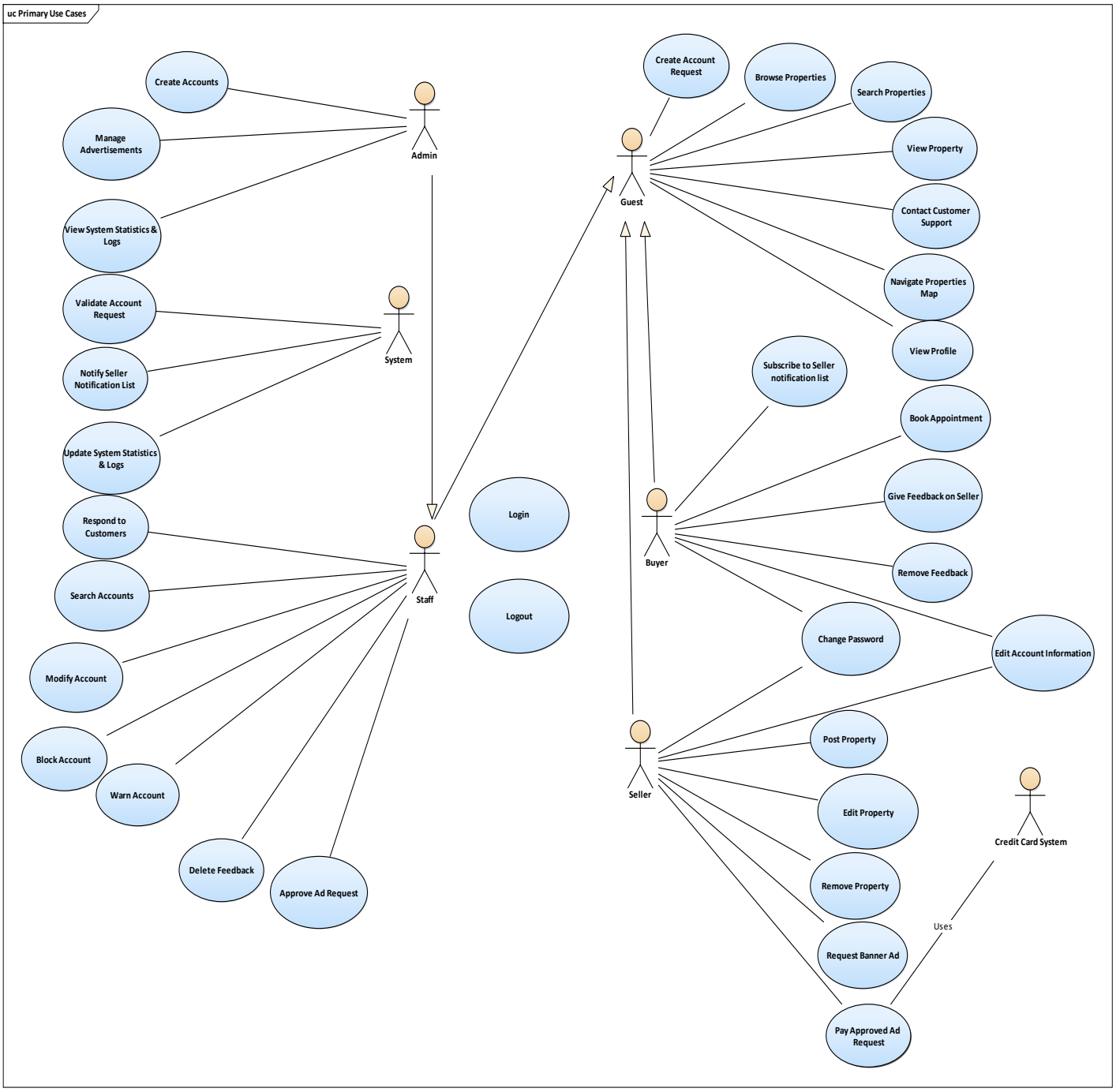
- The user shall be able to contact customer support online instantly.
- The staff shall be able to respond to customers in customer support chat

System Statistics & Logs Subsystem:

- The administrator shall be able to view the system statistics such as number of buyers, sellers, properties sold, and transactions.
- The system shall be able to update the system statistics and staff activity log whenever the database is updated or interacted with

4 System Requirement

4.1 Use case diagram



4.2 Actors

The system consists of the following actors:

- **Guest** – Any client that is not logged in is considered a guest and is allowed guest functionalities only.
- **Buyer** – The buyer is a human actor that has inherited guest functionalities in addition to his exclusive buyer functionalities
- **Seller** – The seller is a human actor that has inherited guest functionalities in addition to his exclusive seller functionalities
- **Credit Card System** – External System Actor whose purpose is to process the banner ad payment
- **Staff** – The staff is a human actor that has access to exclusive functionalities that allow him to respond to customer inquiries, interact with user accounts and feedbacks and approve banner ads requests. It also inherits from Guest Class
- **Admin** – The admin is a human actor that has inherited the staff functionalities in addition to functionalities that may allow him to view sensitive company information such as statistics, create new accounts, and manage system advertisements
- **System**- The system is a non-human actor that has access to exclusive functionalities that automates the process of user accounts validation, notifying user accounts, and updating system statistics.

4.3 Scenarios

Use Case Number	1
Use Case Name	Create account request
Author/Source	Ryan AlGadhi
Date of Creation	10/3/2018
Precondition(s)	The guest must provide: 1-Valid and unique email address 2-Password that meets the conditions
Successful Post Condition	None
Actors	Guest
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Login

Main Flow

1. The use case begins with a new user to the system
2. the user chooses the create new account option
3. the user is presented with a couple of fields to fill
4. the user fills the fields according to the conditions

A1: the user fills the fields with data not meeting the conditions

5. the user sends the request
6. the request is sent
7. the use case ends

A1: the user fills the fields with data not meeting the conditions

1. **an error message is showed to the user**
2. **the user is requested to refill the information.**

Use Case Number	2
Use Case Name	Browse Properties
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	None
Successful Post Condition	None
Actors	Guest
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Search Properties

Main Flow

1. The use case begins by the user entering the interface of browse properties through clicking the menu tab on navigation bar

A1: The usecase begins by the user conducting a search through the search subsystem

2. A list of properties sorted by distance first, then rating second is displayed to the user
3. The list of properties continue to grow and populate in sorted order as the user scrolls down

A2: The end of the list is reached

4. The user selects a property to view and expand
5. The use case ends

A1: The use-case is started by the search subsystem

1. A list displayed to the user and is sorted according to the search criterion
2. The flow returns to primary flow step 3

A2: The end of the list is reached

1. A message is displayed to the user indicating the end of the list of properties
2. The flow returns to primary flow step 4

Use Case Number	3
Use Case Name	Search Properties
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	There must be a search term entered or at least one criteria selected
Successful Post Condition	None
Actors	Guest
Priority	1
Difficulty	Medium
Version	0.1
Related Use Cases	Browse Properties

Main Flow

1. The usecase begins by interacting with the search interface found in the properties browser
2. The user will be prompted to select search criterion and\or enter a search term.
3. The user submits the search form

A1: An empty search form is submitted

4. A list of properties filtered and sorted according to the search criterion is displayed to the user

A2: No search results were found

5. The use case ends

A1: An empty search form is submitted

1. Message is displayed to the user indicating that no search criterion or text was entered
2. The flow returns to primary flow step 2

A2: No search results were found

3. A message is displayed to the user indicating that the search query returned no results
4. The flow returns to primary flow step 5

Use Case Number	4
Use Case Name	View property
Author/Source	Ryan AlGadhi
Date of Creation	10/3/2018
Precondition(s)	None
Successful Post Condition	None
Actors	Guest
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Browse properties – Search properties

1. the usecase begins with the user choosing a certain property
2. the user is forwarded to a new page presenting the full information of the selected property
3. the user will have the option to return to the previous page
4. the usecase ends

Use Case Number	5
Use Case Name	Contact Customer Support
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	None
Successful Post Condition	None
Actors	Guest
Priority	1
Difficulty	Medium
Version	0.1
Related Use Cases	Respond to Customers

Main Flow

1. The use case begins by the user clicking the Contact Customer Support button
2. The button expands into a chatbox and the user is prompted to send a message
3. User will be placed in a customer support queue once a message is sent
4. Staff will respond to the customer message once it is the user's turn and the user hasn't exited the customer support interface

A1: The user exits the customer support interface by collapsing the expanded chatbox

5. The usecase ends

A1: The user exits the customer support interface by collapsing the expanded chatbox

1. The user is removed from the queue
2. The flow return to the primary flow step 5

Use Case Number	6
Use Case Name	Navigate properties map
Author/Source	Ryan AlGadhi
Date of Creation	10/3/2018
Precondition(s)	None
Successful Post Condition	None
Actors	Guest
Priority	1
Difficulty	Medium
Version	0.1
Related Use Cases	View property

Main Flow

1. the usecase begins with the user selecting the Navigate properties map part
2. the user is presented with map that shows the real estate properties close to him or her
3. the user can navigate through the map to see other nearby properties
4. the user selects a property
5. the user is forwarded to View property usecase
6. the usecase ends

Use Case Number	7
Use Case Name	Book appointment
Author/Source	Ryan AlGadhi
Date of Creation	10/3/2018
Precondition(s)	None
Successful Post Condition	None
Actors	Buyer and seller
Priority	2
Difficulty	medium
Version	0.1
Related Use Cases	View property

Main Flow

1. the use case begins with the user being in the view property usecase
2. the buyer chooses book appointment option
3. the buyer is presented with a list of available dates and times to choose from
4. the buyer chooses an appropriate date and time
5. a message is sent to the property seller
6. the buyer is presented with a message indicating the request has been sent
7. the seller receives the meeting request
8. the seller accepts the request
   A : the seller rejects the request.
9. the buyer receives a message indicating that the request has been accepted
10. the usecase ends

A: the user rejects the request

1- the seller updates the times and dates list according to the availability
2- the new list is sent to the buyer
3- the usecase restarts from the beging
4- the usecase ends

Use Case Number	8
Use Case Name	Subscribe to Seller Notification List
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Buyer
Successful Post Condition	User is subscribed to the selected seller notification list
Actors	Buyer
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Notify Seller Notification List

Main Flow

1. The use case begins by the buyer clicking the subscribe\unsubscribe toggle button in selected seller profile
2. The buyer email is added to the selected Seller System Internal Notification List

A1: The buyer is already subscribed

3. The usecase ends

A1: The buyer is already subscribed

1. The buyer email is removed from the selected Seller System Internal Notification List
2. The flow returns to the primary flow step 3

Use Case Number	9
Use Case Name	Give Feedback on Seller
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Buyer
Successful Post Condition	Feedback is saved and displayed publicly on the Seller profile
Actors	Buyer
Priority	2
Difficulty	Easy
Version	0.1
Related Use Cases	Delete Feedback, Remove Own Feedback

Main Flow

1. The use case begins by the buyer clicking the Feedback textbox in any selected seller profile
2. The buyer shall write his feedback on the seller not exceeding 200 characters

A1: 200 characters are exceeded

3. The buyer shall submit his feedback by clicking submit
4. The use-case ends

A1: 200 characters are exceeded

1. The text is cut short to 200 characters once the instant the user stops typing
2. The flow returns to the primary flow step 3

Use Case Number	10
Use Case Name	Post Property
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Seller
Successful Post Condition	Property is saved and displayed publicly on the Seller profile and in properties browser
Actors	Seller
Priority	1
Difficulty	Medium
Version	0.1
Related Use Cases	Edit Property, Remove Property

Main Flow

1. The usecase begins by the seller clicking on the post property command in his investor interface
2. The seller shall prompted to enter name, description, location, images, and videos. And at least Name, description and location must be entered
3. The seller submits his form

A1: The seller does not enter the minimum required details

A2: The duplicate property due to matching name, location and description

4. The property is given an ID number, saved and displayed in the properties browser
5. The use-case ends

A1: The seller does not enter the minimum required details

1. A message is displayed indicating that the fields name, description and location must at least be entered
2. The flow returns to the primary flow step 2

A2: The duplicate property due to matching name, location and description

1. A message is displayed indicating that the property already exists in the system. The input fields of the form is cleared.
2. The flow returns to the primary flow step 2

Use Case Number	11
Use Case Name	Remove Property
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Seller
Successful Post Condition	The property is removed from the system
Actors	Seller
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Edit Property, Remove Property

Main Flow

1. The usecase begins by the seller clicking on the Remove property button in his investor interface
2. The seller shall prompted to select a property name of his registered properties names list
3. The seller clicks Remove Property button

A1: The seller submitted with no property selected

4. The property is removed from the system
5. The use-case ends

A1: The seller submitted a form with empty name, description, or location

1. A message is displayed indicating a property must be selected
2. The flow returns to the primary flow step 2

Use Case Number	12
Use Case Name	Pay Approved Ad Request
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Seller, Purchase Attempts should be zero
Successful Post Condition	The ad request is forwarded to the admin advertisement management interface
Actors	Seller, Credit Card System
Priority	2
Difficulty	Medium
Version	0.1
Related Use Cases	Request Banner Ad Request, Approve Ad Request

Main Flow

1. The usecase begins by the seller clicking on the Request Banner Ad button in his investor interface
2. The seller shall prompted to select an Approved Ad Request of his approved ad requests list
3. The seller clicks Confirm button after selecting the approved Ad request

A1: The seller submitted with no selection

4. The system displays receipt containing the price of the approved ad request and the start and end times for the advertisement
5. The seller confirms the receipt
6. The seller is prompted to enter his credit card type, name, and expiration date
7. The seller submits the credit card form

A2: The Account is not found
A3: Insufficient funds
E1: Credit card system inaccessible
E2: Maximum of three purchase attempts is reached

8. The system updates the advertisement management interface of the administrator with the newly purchased banner ad request
9. Purchase Attempts counter is reset to 0
10. The use-case ends

A1: The account is not found

1. A message is displayed indicating that the account was not found
2. The purchase attempt count of the seller account is incremented by one
3. The flow returns to the primary flow step 2

A2: Insufficient funds

1. A message is displayed indicating that there is insufficient funds
2. The flow returns to the primary flow step 2

E1:Credit card system inaccessible

1. A message is displayed that the credit card system is unavailable
2. Purchase attempt count is reset to 0

3. Return to primary flow step 10 (end use case)

E2:Maximum of three purchase attempts is reached

1. A message is displayed that the max purchase attempts were reached and purchase lock is in effect for 3 days.
2. Return to primary flow step 10 (end use case)

Use Case Number	13
Use Case Name	Change password
Author/Source	Ryan AlGadhi
Date of Creation	10/3/2018
Precondition(s)	User must be logged in
Successful Post Condition	None
Actors	Seller and Buyer
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	View account information

Main Flow

1. the usecase begins with buyer or seller selecting view account information option
2. the the user selects the change password option
3. the user is forwarded to another page with a couple of text fields to fill
4. the user fills the fields according to the conditions

A: the user fills the fields not according to the conditions

5. the new password information updates the database
6. the user receives a message indicating that the passwords change request has been successfully done
7. the usecase ends

A: the user fills the fields not according to the conditions

1- the usecase restarts from the 3rd step

2- the usecase ends

Use Case Number	14
Use Case Name	Search Accounts
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Staff
Successful Post Condition	Account profile is displayed
Actors	Staff
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Block Account, Warn Account, Modify Account, Delete Feedback

Main Flow

1. The usecase begins by the staff clicking on the Search Accounts button in his staff interface
2. The staff shall be prompted to enter a username for search
3. The staff clicks Search Account button

A1: No results found

4. A list of accounts of matching then partially matching usernames are displayed from which the staff can click and initiate the View Profile usecase to view
5. The use-case ends

A1: No results found

1. A message is displayed indicating that no results were found for his entered search values
2. The flow returns to the primary flow step 2

Use Case Number	15
Use Case Name	Block Account
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Staff
Successful Post Condition	Selected User Account is blocked
Actors	Staff
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Search Accounts, Warn Account, Modify Account, Delete Feedback

Main Flow

1. The use case begins by the staff clicking the Block Account toggle button in selected user profile
2. The selected account profile is blocked and the database is updated

A1: The account is already blocked

3. Staff log is updated with the staff member name, command used and user account affected
4. The usecase ends

A1: The account is already blocked

1. The selected account profile is unblocked and the database is updated
2. The flow returns to the primary flow step 3

Use Case Number	16
Use Case Name	Edit account information
Author/Source	Ryan AlGadhi
Date of Creation	10/3/2018
Precondition(s)	User must be logged
Successful Post Condition	None
Actors	Seller and Buyer
Priority	1
Difficulty	Medium
Version	0.1
Related Use Cases	View account information

Main Flow

1. the usecase begins with the buyer or seller selecting view account information option
2. the user selects the edit option
3. the user is allowed to change the changeable set of information
4. the user updates the information
5. the user chooses update option
   A : the user chooses cancel option
6. the new new information gets sent to the database to update it
7. the user recives a message indicating that the update has been done successfully
8. the usecase ends

A : the user chooses cancel option

1. **the user is forwarded to view account usecase**
2. **the usecase ends**

Use Case Number	17
Use Case Name	Edit Property
Author/Source	Ryan AlGadhi
Date of Creation	10/3/2018
Precondition(s)	User must be logged in as Seller
Successful Post Condition	Property is saved and displayed publicly on the Seller profile and in properties browser
Actors	Seller
Priority	1
Difficulty	Medium
Version	0.1
Related Use Cases	View properties

Main Flow

1. the usecase begins with the seller being in the view properties option
2. the user is forwarded to a page showing the set of properties offered by the seller
3. the user selects edit option
4. the user selects the property that is wanted to be edited
5. the user is forwarded to another page that shows the full information of the property
6. the user updates the information that is editable
7. the use selects update option
   A: the user selects the cancel option
8. the new information is sent to the database to update it
9. the user receives a message indicating that the update has been done successfully
10. the usecase ends

A : the user selects the cancel option

1. the user is forwarded the view properties usecase
2. the usecase ends

Use Case Number	18
Use Case Name	Request banner ad
Author/Source	Ryan Algadhi
Date of Creation	10/3/2018
Precondition(s)	User must be logged in as Seller
Successful Post Condition	Property is saved and displayed publicly on the Seller profile and in properties browser
Actors	Seller
Priority	1
Difficulty	Medium
Version	0.1
Related Use Cases	Edit account information

Main Flow

1. the usecase begins with the seller choosing request ads option
2. the user is forwarded is requested to fill a form that is presented in a new page
3. the user sends choose send option
   A : the user chooses the cancel option
4. the form is sent to the faculty
5. the usecase ends

A: the user chooses the cancel option

1. **the user is forwarded back to the home screen**
2. **the usecase ends**

Use Case Number	19
Use Case Name	Respond to customer
Author/Source	Ryan Algadhi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Staff
Successful Post Condition	Selected User Account is blocked
Actors	Staff
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Search Accounts, Warn Account, Modify Account, Delete Feedback

Main Flow

1. the usecase begins with the staff choosing respond to customers option
2. the staff is presented with a list of the available requests to reply to.
3. the staff selects a certain request
4. the request is opened in a new tap
5. the staff starts replying to the customer by filling the presented text area
6. the usecase ends

Use Case Number	20
Use Case Name	Delete Feedback
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Staff
Successful Post Condition	Selected Feedback is deleted
Actors	Staff
Priority	1
Difficulty	Easy
Version	0.1

Related Use Cases	Search Accounts, Warn Account, Modify Account, Block Account

Main Flow

1. The use case begins by the staff clicking the Delete Feedback button underneath the target feedback in the user account
2. The selected feedback is deleted and removed from the database
3. Staff log is updated with the staff member name, command used and user account affected and saved in the system
4. The usecase ends

Use Case Number	21
Use Case Name	Modify account
Author/Source	Ryan AlGadhi
Date of Creation	10/3/2018
Precondition(s)	User must be logged in as Staff
Successful Post Condition	Selected User Account is blocked
Actors	Staff
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Search Accounts, Warn Account, Modify Account, Delete Feedback

Main Flow

1. the usecase begins with the staff selecting view account information option
2. the user selects the edit option
3. the user is allowed to change the changeable set of information
4. the user updates the information
5. the user chooses update option
   A : the user chooses cancel option
6. the new new information gets sent to the database to update it
7. the user receives a message indicating that the update has been done successfully
8. the usecase ends

A : the user chooses cancel option

3. **the user is forwarded to view account usecase**
4. **the usecase ends**

Use Case Number	22
Use Case Name	Create Accounts
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Admin
Successful Post Condition	A new account is created and saved in the system
Actors	Admin
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Search Accounts, Warn Account, Modify Account, Block Account

Main Flow

1. The use case begins by the Admin clicking the Create Accounts command in his Admin Interface
2. The admin is prompted to fill a form with the minimum required details such as username, password, email, account type, address and additional details such as profile picture, profile description.
3. The admin submits the form

A1: Duplicate Account Username

A2: Empty or missing minimum required details form is submitted

4. Staff log is updated with the Admin name, command used and user account created and saved in the system
5. The usecase ends

A1: Duplicate Account Username

1. A message is displayed to the admin indicating that the username is already taken
2. The flow returns to primary flow step 2

A2: Empty or missing minimum required details form is submitted

1. A message is displayed to the admin indicating that the minimum required details must be entered
2. The flow returns to primary flow step 2

Use Case Number	23
Use Case Name	Warn Account
Author/Source	Ryan AlGadhi
Date of Creation	10/3/2018
Precondition(s)	User must be logged in as Staff
Successful Post Condition	Selected User Account is blocked
Actors	Staff
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Block account

Main Flow

1. the usecase begins with the staff receiving a list of reported comments
2. the staff choose view comments option
3. the user is forwarded to another page with all the reported comments
4. the staff choose one comment to view
5. the staff chooses to send warning to the commenter
   A: the staff chooses to mark the comment as appropriate
6. the number of warnings does not exceed the limit
   A2: the number of warnings does exceed the limit
7. the warning is sent the reported user with the history of warnings
8. the usecase ends

A: the staff chooses to mark the comment as appropriate

1. **the reporting comment account is marked misusing the reporting feacher**
2. **the history of misusage is sent to the reporting account**
3. **the usecase ends**

A2: the number of warnings does exceed the limit

1. **the comminting account is blocked**
2. **a message of blockage is sent to the commenting account**
3. **the usecase ends**

Use Case Number	24
Use Case Name	View System Statistics and Logs
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Admin
Successful Post Condition	System Statistics are displayed
Actors	Admin
Priority	1
Difficulty	Medium
Version	0.1
Related Use Cases	None

Main Flow

1. The use case begins by the staff clicking the View Statistics button in the Admin Interface
2. The System Statistics such as number of purchases, registered accounts, seller accounts, buyer accounts, expected profits, system traffic, online users and others are displayed
3. The usecase ends

Use Case Number	25
Use Case Name	Approve ad request
Author/Source	Ryan AlGadhi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Staff
Successful Post Condition	Selected User Account is blocked
Actors	Staff
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Request banner ad

Main Flow

1. the usecase begins with the staff choosing view ad requests option
2. the staff is presented with a list of available set of requests
3. the staff chooses a certain request

4. the staff chooses to accept the request
   A: the staff chooses to reject the request
5. the staff processes the request by filling a form that I presented
6. the staff sends the chooses to send the form to the admin
   A2: the staff cancels the form filling
7. the usecase ends

   A: the staff chooses to reject the request
   1. a message of rejection is sent to the requester
   2. the usecase ends

   A2: the staff cancels the form filling
   1. the staff goes back to step 3
   2. the usecase ends

Use Case Number	26
Use Case Name	Manage advertisement
Author/Source	Ryan AlGadhi
Date of Creation	11/3/2018
Precondition(s)	User must be logged in as Staff
Successful Post Condition	Selected User Account is blocked
Actors	Staff
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	none

1. the usecase begins with the admin chooses the manage advertisements option
2. the admin chooses the requested ads view criteria
   A: the admin choose to view the current approved ads
3. the admin chooses one request
4. the admin accepts the request
5. the admin is presented with a new interface to choose where to place the ad
6. the new information about the ad system is sent to the database
7. the usecase ends

   A: the admin choose to view the current approved ads
   1. **the admin is presented with a new interface that shows where every ad is**
   2. **the admin edits the ads**

3. **the new information about the ad system is sent to the database**
4. **the usecase ends**

Use Case Number	27
Use Case Name	Validate Account Request
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	There must be an Account Request in the queue
Successful Post Condition	Selected Account Request is validated
Actors	System
Priority	1
Difficulty	Medium
Version	0.1
Related Use Cases	None

Main Flow

1. The use case begins by the System receiving an Account Creation Request
2. The System sends a confirmation message through the method included in the Account Creation Request

A1:72 Hours Timeout of Confirmation Link

3. Once response from the confirmation link is received, the account is validated and the database is updated
4. The usecase ends

A1:72 Hours Timeout of Confirmation Link

1. The confirmation link is deleted from the system and is invalidated
2. The Account Creation Request is deleted
3. Return to primary flow step 4 (end usecase)

Use Case Number	28
Use Case Name	Notify seller Notification list
Author/Source	Ryan Najeeb alGadhi
Date of Creation	9/3/2018

Precondition(s)	User must be logged in as Staff
Successful Post Condition	Selected User Account is blocked
Actors	seller
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	none

Main Flow

1. the usecase begins with the seller choosing to show notifications
2. the list of notifications is showed to the seller
3. the seller choose one notification to view
4. the seller replays to the notification
   E: the notification is not replyable
5. the usecase ends

E: the notification is not replayable

1. **the usecase ends**

Use Case Number	29
Use Case Name	Update System Statistics and Logs
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	User must be logged in as Admin
Successful Post Condition	System Statistics are displayed
Actors	System
Priority	1
Difficulty	Medium
Version	0.1
Related Use Cases	View System Statistics

Main Flow

1. The use case begins by the System when it is triggered by any saving request or update in the database
2. The System Statistics such as number of purchases, registered accounts, seller accounts, buyer accounts, expected profits, system traffic, online users, staff logs are updated accordingly
3. The usecase ends

Use Case Number	30
Use Case Name	View Profile
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	None
Successful Post Condition	Selected User Profile is displayed
Actors	Guest
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	Edit Property, Remove Property

Main Flow

1. The use case begins when the guest clicks on a user account username in any part of the system
2. The clicked user account profile is displayed with all details
3. The usecase ends

Use Case Number	31
Use Case Name	Remove Feedback
Author/Source	Asaad AlGhamdi
Date of Creation	9/3/2018
Precondition(s)	None
Successful Post Condition	Selected Feedback is removed
Actors	Buyer
Priority	1
Difficulty	Easy
Version	0.1
Related Use Cases	None

Main Flow

1. The use case begins when the buyer clicks on the delete button underneath his own feedback on the seller profile
2. The feedback is deleted and the database is updated
3. The usecase ends

4.4 Non-Functional Requirement

- The system shall conduct a properties database search that takes no longer than 2 seconds and break down the search into stages, the further the user scrolls down the search results page the more deeper search and display of less and less relevant results
- The system shall encrypt each user account sensitive information within the database in base-64 encoding
- The system shall have an availability of 99.9999% per year (31.6s downtime annually)
- The system shall have an expandable database
- The system shall be user-friendly and intuitive such that the average error clicks rate of a new user to reach a functionality is less than 3 clicks.
- The system shall be maintainable such that the average number of system critical bugs annually should not exceed 1 or all the occurring bugs origin is of a two or less common component and not more than that.
- The system shall be secure such that any suspicious activity such as multiple failed logins will result in lockout of the user attempted to login

5 System Evolution

As for all software projects, change is an inevitable truth. The United Real Estate system is no exception. The areas that are more susceptible to change would be:

- User Account Requests Validation Subsystem, as methods of account validation might change or evolve in the future.
- Properties Search subsystem, as more sophisticated criteria and search algorithm improvement is introduced.
- System Analysis and Statistics subsystem, because the type of required statistics might change.

Overall, the developer must take into consideration the fickle nature of these subsystems as they're likely to be exposed to change.

6 Conclusion

The ultimate goal of this project is to create a fully functional real estate database management system. United Real Estate Online system is responsible for facilitating sales, investments, and advertisements of real estate properties registered within the system as mentioned before. The work distribution and meetings are as follows:

Assignment	Credits
Introduction(Purpose, Problem Definition, Overview)	Asaad AlGhamdi
Process Model	Asaad AlGhamdi
User Requirements (Functional Requirements)	Asaad AlGhamdi
System Requirement:	
Use-case Diagram	Asaad AlGhamdi & Ryan Gadhi
Actors	Asaad AlGhamdi & Ryan Gadhi
Scenarios	Asaad AlGhamdi & Ryan Gadhi
Non-Functional Requirement	Asaad AlGhamdi
System Evolution	Asaad AlGhamdi
Reference	Asaad AlGhamdi
Conclusion	Asaad AlGhamdi

#	Meeting Goals	Attendees
1	• Visualize the system • Finalize Use cases • Choose a Process Model Duration: 8 PM – 1 AM, Date: 6th of March, Tuesday	Asaad AlGhamdi, Ryan Gadhi

7 References

1. Adamsoo, A. (2010) Web Based Project Management System https://www.theseus.fi/bitstream/handle/10024/16996/Aadamsoo_Anne-Mai.pdf

2. IEEE Software Engineering Standards Committee (1998) “IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications”, 10.1109/IEEESTD.1998.88286.