Software Requirements Specification

for

edUFind

Version 1.3 approved
Prepared by Team UPS-Elon
Nanyang Technological University
22 March 2022

Functional Requirements	3
Non-Functional Requirements	5
Data Dictionary	6
Use Case Diagram	8
Use Case Descriptions	9
UI Mockup	25
Home Page	25
Login Page	26
Sign Up Procedures	27
Recommendations	28
Primary Schools	29
Secondary School	30
Junior College	31
School details	32
Shortlisted Schools	33
Account Settings	34
Class Diagram	35
Sequence Diagram	36
Registering User Account	36
Request Password Change	37
Shortlist Schools	37
Remove Shortlisted Schools	38
Retrieve Shortlisted Schools	38
Create Comment	39
Edit Comment	39
Display Comment	40
Like Comment	40
Search School	41
Select School	41
Dialog Map	42

Functional Requirements

- 1. Home Page
 - 1.1. The system must be able to display the list of schools based on their corresponding education level offered, indicated by the school's main level code
 - 1.2. The system must provide be able to allow the user to use the search box
 - 1.3. The system must allow the user to be able to filter schools of their choosing based on certain filters
 - 1.4. The system must allow the user to login to their account
 - 1.5. The system must allow the user must to view their shortlisted schools
 - 1.6. The system must allow the user to register their account
- 2. Search
 - 2.1. The system must allow the user to find and filter schools of their choosing based on
 - 2.1.1. Co-Curricular Activities (CCA)
 - 2.1.2. Elective Programmes
 - 2.1.3. Location
 - 2.1.4. Mother Tongue Language (MTL) offered
 - 2.1.5. Subjects Offered
 - 2.2. The system must allow the user to use the search box to search for schools directly
- 3. Creating User Account
 - 3.1. The system must allow the user to create an account by providing the following information
 - 3.1.1. Username
 - 3.1.2. Email
 - 3.1.3. Password
 - 3.2. The system must validate that all required information is provided by the user
- 4. Login
 - 4.1. The system must allow the user to be able to login to their account using their email and password
 - 4.2. The system must be able to check that the email and password are correct
- 5. Manage Profile
 - 5.1. The system must allow the user to change their password to ensure account security
 - 5.2. The system must allow users to edit their preferences (9. Recommendations)
- 6. Shortlisting schools (For registered users)
 - 6.1. The system must allow the user to shortlist schools
 - 6.2. The system must allow the user to delete shortlisted schools
 - 6.3. The system must allow the user to view shortlisted schools
- 7. Comments (For registered users)
 - 7.1. The system must allow the user to create comments
 - 7.2. The system must allow the user to edit comments
 - 7.3. The system must allow the user to delete comments

- 7.4. The system must allow the user to like comments
- 8. Displaying School Specific Data
 - 8.1. The system must be able to display the following information about multiple schools based on the filters selected by the user
 - 8.1.1. Name
 - 8.1.2. Address
 - 8.2. The system must be able to display the following information about the school selected by the user
 - 8.2.1. School Name
 - 8.2.2. School Website
 - 8.2.3. Address
 - 8.2.4. MRT Description
 - 8.2.5. Bus Description
 - 8.2.6. Type Code
 - 8.2.7. Nature Code (Co-Ed, All boys, All Girls)
 - 8.2.8. MTL Offered
 - 8.2.9. Subjects Offered
 - 8.2.10. Elective Programmes
 - 8.2.11. Support for Special Educational Needs
- 9. Recommendation
 - 9.1. System will enquire registered user for his/her preferences on first time log-in
 - 9.1.1. Region
 - 9.1.2. Mother Tongue
 - 9.1.3. Gender
 - 9.1.4. CCA Categories
 - 9.2. System must display schools relevant to user's selected preferences
- 10. Interfacing with data.gov.sg API

Non-Functional Requirements

- 1. Usability: Each tab will be clearly described so that the users can understand easily.
- 2. Reliability: System should be able to support up to 50 pax.
- 3. Performance: The system will be able to respond to user interactions within 2 seconds.
- 4. Supportability: Documentation and coding comments are consistent and traceable (with version control). The git update will be well commented and described appropriately.

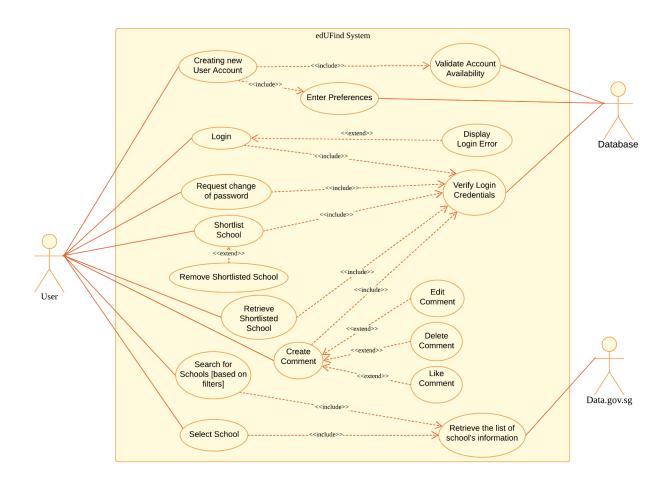
Data Dictionary

Term	Definition
User	A user is a person who is using the web application to find schools based on their interest and location in Singapore
System	A system refers to the web application
Search	Search is a feature that allows user to find schools based on school's name or certain keywords
Filter	Filter is a feature that the user can use to sort schools based on the school's characteristics (E.g., CCA, Subjects offered, etc.)
Shortlist	Shortlist is a feature that enables registered users to mark/save their preferred school. Users are also able to delete schools from their list or retrieve their list of shortlisted schools
Registration	Registration is a feature for users to create a new account (provided their email is valid). This enables users to use other features of the website, such as shortlisting and commenting
Registered User	A user that has created an account in the system and is logged into that account
Comment	A written remark by a user to denote their views on a particular school. The author of the comment can delete or modify the comment while other registered users can 'like' comments.
Nature Code	Refers to the gender that the school allows to be enrolled. Values include "Co-Ed", "Boys only" or "Female only"
Type Code	Refers to the type of school. Values include "Government School", "Government Aided School", "Independent School", "Specialized Independent School" and "Specialized School"
Elective Program	Types of learning programmes that the school's adopt, such as Chinese Language Elective Program (CLEP), Art Elective Program (AEP), etc
Education Level	The education requirement required to enter a school (Primary, Secondary and Junior College)
Main Level Code	Refers to education level reflected in the database. Values include "Primary", "Secondary", "Junior College", "Mixed Levels" and "Centralised Institute"
Co-Curricular Activities (CCA)	A non-academic activity that all students must undertake as part of their education

	There are 4 main categories of CCAs
Mother Tongue Language (MTL)	A mother tongue language is a second language (the first being English) that a student will learn in school (such as Chinese, Tamil and Malay)
Subject	The various knowledge studied or taught in a school that are currently offered to the enrolling student cohort
Special Education Needs	Types of special needs the schools can support (E.g., dyslexia, ADHD, mild Autism Spectrum Disorder, mild hearing loss, visual impairment and physical impairment)

Use Case Diagram

Refer to PDF File for the clear image



Use Case Descriptions

Use Case ID:	1		
Use Case Name:	Creating New User Account		
Created By:	Lim Kai Sheng Last Updated By: Andre Lim		
Date Created:	28 th January 2022	Date Last Updated:	22 nd March 2022
Actor	User		
Description:	User creates a new ad	ccount	
Precondition:		must not exist in the data e an internet connection	
Postconditions:	User account must be updated in database User password is encrypted in the database User can now log in using the created account		
Priority:	Medium		
Frequency of Use:	0 - 1 time per lifetime		
Flow of Events:	User keys in a valid username, email, password, confirm password and gender, in the respective fields System verifies:		
Alternative Flows:	AF-S3: System detects discrepancy between any of the verification 1. System displays respective error message 2. Return to Step 1		
Exceptions:	-		
Includes:	Validate Account Availability Enter Preferences		
Special Requirements:	-		
Assumptions:	-		
Notes and Issues:	-		

Use Case ID:	2		
Use Case Name:	Validate Account Availability		
Created By:	Andre Lim Last Updated By: Ling Yin		
Date Created:	28 th January 2022	Date Last Updated:	22 nd March 2022
Actor	System		
Description:	Only allow user to reg	ister an account if the er	nail is valid
Precondition:	User account must not exist in the database User must enter an email in a valid format (for example: xxx@abc.com) User must have an internet connection		
Postconditions:	User account must be updated in database User can now log in using the created account		
Priority:	Medium		
Frequency of Use:	1 - 3 times per lifetime		
Flow of Events:	 System will validate the account availability in the database System will add the user account in the database 		
. 1011 01 210110.			
Alternative Flows:	2. System will ad AF-S1: System detect database 1. System will dis corresponding 2. User enters a	d the user account in the state account has a splay error message "Accemail already exist" new email e "create account" button ain.	e database already exists in the count with
	2. System will ad AF-S1: System detect database 1. System will discorresponding 2. User enters a 3. User clicks the registration ag	d the user account in the state account has a splay error message "Accemail already exist" new email e "create account" button ain.	e database already exists in the count with
Alternative Flows:	2. System will ad AF-S1: System detect database 1. System will discorresponding 2. User enters a 3. User clicks the registration ag 4. Return to Step	d the user account in the state account has a splay error message "Accemail already exist" new email e "create account" button ain.	e database already exists in the count with
Alternative Flows: Exceptions:	2. System will ad AF-S1: System detect database 1. System will discorresponding 2. User enters a 3. User clicks the registration ag 4. Return to Step	d the user account in the state account has a splay error message "Accemail already exist" new email e "create account" button ain.	e database already exists in the count with
Alternative Flows: Exceptions: Includes:	2. System will ad AF-S1: System detect database 1. System will discorresponding 2. User enters a 3. User clicks the registration ag 4. Return to Step	d the user account in the state account has a splay error message "Accemail already exist" new email e "create account" button ain.	e database already exists in the count with

Use Case ID:	3			
Use Case Name:	Login			
Created By:	Andrew Ng Last Updated By: Kai Sheng			
Date Created:	28 th January 2022	Date Last Updated:	22 nd March 2022	
Actor	User			
Description:	User logs into his/her password	created account using th	ne registered email and	
Precondition:		e a registered account in e an internet connection		
Postconditions:	User has access to his/her account User can use additional features of the website such as Shortlisting Schools, Commenting etc			
Priority:	Medium	Medium		
Frequency of Use:	1 - 3 times per lifetime			
Flow of Events:	 User enters their email, and password in the login field User clicks on the "login" button System authenticates the account with the database 			
Alternative Flows:	AF-S2: User left the required field empty 1. System will display an error message 2. User fills up the required field(s) 3. Return to Step 2 AF-S3: User enters an invalid email or password 1. System will display an error message 2. User re-enters the respective field(s) 3. Return to Step 2			
Exceptions:	-			
Includes:	Verify Login Ci	redentials		
Special Requirements:	-			
Assumptions:	User will not forget his/her password			
Notes and Issues:	-			

Use Case ID:	4			
Use Case Name:	Display Login Error			
Created By:	Lim Kai Sheng Last Updated By:			
Date Created:	28 th January 2022	Date Last Updated:	22 nd March 2022	
Actor	System			
Description:	Displays "Invalid Ema	il or Password entered	" to the user	
Precondition:	User enters an invalid email or password when logging in User must have an internet connection			
Postconditions:	User is prompted to re-enter a valid email and password			
Priority:	Medium			
Frequency of Use:	1 - 3 times per lifetime			
Flow of Events:	User enters an invalid email and/or password Error message is displayed to the user User is prompted to re-enter a valid email and password			
Alternative Flows:	-			
Exceptions:	-			
Includes:	-			
Special Requirements:	-			
Assumptions:	-			
Notes and Issues:	-			

Use Case ID:	5			
Use Case Name:	Verify Login Credentials			
Created By:	Andrew Ng Last Updated By Adi			
Date Created:	28 th January 2022 Date Last Updated: 22nd March 2022			
Actor	System			
Description:	Authenticate account	information via email and	d password	
Precondition:	 User account must already exist in the database User must have an internet connection User is logged in User is assigned a token 			
Postconditions:	User can shortlist their shortlisted schools User can retrieve their list of shortlisted schools User can remove their shortlisted schools from the list			
Priority:	Medium			
Frequency of Use:	1 - 3 times per lifetime			
Flow of Events:	 User attempts to perform an action such as: a. Shortlist b. Commenting System checks if current User's assigned token is valid System allows the User to perform the action 			
Alternative Flows:	AF-S2: User account left idle for 24 hours 1. Token assigned to the user is expired 2. System will require the user to log in again			
Exceptions:	-			
Includes:	-			
Special Requirements:	-			
Assumptions:	-			
<u> </u>				

Use Case ID:	6		
Use Case Name:	Edit user account password		
Created By:	Andre Lim Last Updated By Andrew Ng		
Date Created:	28 th January 2022	Date Last Updated:	22nd March 2022
Actor	User		
Description:	User requests for a ch	nange of password	
Precondition:		logged into his/her accou e an internet connection	
Postconditions:	Password mus	st be updated in databas	e
Priority:	Medium		
Frequency of Use:	1 - 3 times per year		
Flow of Events:	 User logs into his/her account User clicks on his/her account User selects the "Account" option System prompts user to key in the old password, new password and confirm new password fields System validates the old password System validates the new and confirm password are identical User's account password is updated to the new password 		
Alternative Flows:	AF-S5: User enters an invalid old password 1. System will display an error message 2. User re-enters all three field(s) 3. Return to Step 5 AF-S6: User enters a mismatch of new passwords 1. System will display an error message 2. User re-enters the respective field(s) 3. Return to Step 5		
Exceptions:	-		
Includes:	Verify Login Credentials		
Special Requirements:	-		
Assumptions:	-		
Notes and Issues:	-		

Use Case ID:	7		
Use Case Name:	Shortlist School		
Created By:	Lim Kai Sheng Last Updated By Ling Yin		
Date Created:	28 th January 2022	Date Last Updated:	22 nd March 2022
Actor	User		
Description:	User can add schools schools	they are interested in to	their list of shortlisted
Precondition:	User account must already exist in the database User must be logged into his/her account User must have an internet connection		
Postconditions:	User's preferred schools will be saved in the database		
Priority:	High		
Frequency of Use:	0 - 10 times per day		
Flow of Events:	 User searches for schools based on preference User clicks on the "Plus" button to bookmark their shortlisted schools. System will save the user's shortlisted schools into the database. 		
Alternative Flows:	-		
Exceptions:	-		
Includes:	Verify login credentials		
Special Requirements:	-		
Assumptions:	-		
Notes and Issues:	-		

Use Case ID:	8			
Use Case Name:	Remove Shortlisted School			
Created By:	Andre Lim Last Updated By Andre Lim			
Date Created:	28 th January 2022	Date Last Updated:	22 nd March 2022	
Actor	User			
Description:	Shortlisted schools ca	in be removed by the use	er	
Precondition:	 User account must already exist in the database User must be logged into his/her account User must have an internet connection 			
Postconditions:	User's selected school will be removed from his/her shortlisted list			
Priority:	High			
Frequency of Use:	0 - 5 times per day			
Flow of Events:	 User clicks on the "My Shortlist" button to view their shortlisted schools User selects the shortlisted schools that he/she wants to remove User clicks on the "Delete" icon System will drop the user's shortlisted schools from the database 			
Alternative Flows:	-			
Exceptions:	-			
Includes:	1. Verify login cre	Verify login credentials		
Special Requirements:	-			
Assumptions:	-			
Notes and Issues:	-			

Use Case ID:	9			
Use Case Name:	Retrieve Shortlisted School			
Created By:	Andrew Ng Last Updated By Lim Kai Sheng			
Date Created:	28 th January 2022	Date Last Updated:	10 th February 2022	
Actor	User			
Description:	Displays list of shortlis	sted schools		
Precondition:	User account must already exist in the database User must be logged into his/her account User must have an internet connection			
Postconditions:	A list of User's shortlisted schools will be displayed			
Priority:	High			
Frequency of Use:	0 - 5 times a day			
Flow of Events:	User selects "My Shortlist" List of shortlisted schools for the user is fetched from the database System displays the retrieved shortlisted school(s) to the User			
Alternative Flows:	-			
Exceptions:	-			
Includes:	-			
Special Requirements:	-			
Assumptions:	-			
Notes and Issues:	-			

Use Case ID:	10				
Use Case Name:	Create Comment				
Created By:	Lim Kai Sheng Last Updated By				
Date Created:	28 th January 2022 Date Last Updated:				
Actor	User				
Description:	User is able to post th	eir comments about sch	ools		
Precondition:	User account must already exist in the database User must be logged into his/her account User must have an internet connection				
Postconditions:	Comments are displayed in the comment section of the respective school				
Priority:	Medium				
Priority: Frequency of Use:	Medium 0 - 5 times per year				
	0 - 5 times per year 1. User types in h 2. User clicks "po	nis/her comments in com			
Frequency of Use:	0 - 5 times per year 1. User types in h 2. User clicks "po 3. Comment is no	nis/her comments in com			
Frequency of Use: Flow of Events:	0 - 5 times per year 1. User types in h 2. User clicks "po 3. Comment is no	nis/her comments in com			
Frequency of Use: Flow of Events: Alternative Flows:	0 - 5 times per year 1. User types in h 2. User clicks "po 3. Comment is no the school	nis/her comments in com est" button ow publicly displayed in t			
Frequency of Use: Flow of Events: Alternative Flows: Exceptions:	0 - 5 times per year 1. User types in h 2. User clicks "po 3. Comment is no the school -	nis/her comments in com est" button ow publicly displayed in t			
Frequency of Use: Flow of Events: Alternative Flows: Exceptions: Includes:	0 - 5 times per year 1. User types in h 2. User clicks "po 3. Comment is no the school - 1. Verify Login Ci	nis/her comments in com est" button ow publicly displayed in t			

Use Case ID:	11				
Use Case Name:	Edit Comment				
Created By:	Andre Lim Last Updated By				
Date Created:	28 th January 2022 Date Last Updated:				
Actor	User				
Description:	User can edit his/her p	posted comment			
Precondition:	 User account must already exist in the database User must be logged into his/her account User must have already posted a comment User must have an internet connection 				
Postconditions:	User's comment is edited and displayed in the comment section of the respective school				
Priority:	Medium				
Frequency of Use:	0 - 4 times per year				
Flow of Events:	3. User modifies	"edit" button to start edit			
Alternative Flows:	AF-S2: User decides not to edit his post 1. User clicks on "cancel button" 2. Comment is not modified				
Exceptions:	-				
Includes:	Verify Login Cr	redentials			
Special Requirements:	-		-		
Assumptions:	-				
Notes and Issues:	-				

	<u> </u>				
Use Case ID:	12				
Use Case Name:	Delete Comment				
Created By:	Andrew Ng Last Updated By				
Date Created:	28 th January 2022 Date Last Updated:				
Actor	User				
Description:	User can delete his/he	er posted comment			
Precondition:	 User account must already exist in the database User must be logged into his/her account User must have already posted a comment User must have an internet connection 				
Postconditions:	User's comment is removed from the comment section of the respective school				
Priority:	Medium				
Frequency of Use:	0 - 4 times per year				
Flow of Events:	 User navigates to his comments User clicks on "delete" button User clicks "confirm" button to delete his/her comment Comment is removed 				
Alternative Flows:	AF-S3: User decides not to delete his/her comment 1. User clicks on the "cancel" button 2. Comment is not deleted				
Exceptions:	-				
Includes:	Verify Login Ci	redentials			
Special Requirements:	-				
Assumptions:	-				
Notes and Issues:	-				

Use Case ID:	13				
Use Case Name:	Like Comment				
Created By:	Lim Kai Sheng Last Updated By				
Date Created:	28 th January 2022 Date Last Updated:				
Actor	User				
Description:	User can like other po	sted comment			
Precondition:	 User account must already exist in the database User must be logged into his/her account User must have an internet connection 				
Postconditions:	"Liked" should be reflected on the intended comment				
	Medium				
Priority:	Medium				
Priority: Frequency of Use:	Medium 0 - 4 times per year				
	0 - 4 times per year 1. User clicks on	the "like" button Il update the comment's	"Liked" counts		
Frequency of Use:	0 - 4 times per year 1. User clicks on		"Liked" counts		
Frequency of Use: Flow of Events:	0 - 4 times per year 1. User clicks on		"Liked" counts		
Frequency of Use: Flow of Events: Alternative Flows:	0 - 4 times per year 1. User clicks on 2. The system wi		"Liked" counts		
Frequency of Use: Flow of Events: Alternative Flows: Exceptions:	0 - 4 times per year 1. User clicks on 2. The system wi		"Liked" counts		
Frequency of Use: Flow of Events: Alternative Flows: Exceptions: Includes:	0 - 4 times per year 1. User clicks on 2. The system wi -				

Use Case ID:	14				
	· ·				
Use Case Name:	Search for Schools [based on filters]				
Created By:	Andre Lim Last Updated By				
Date Created:	28 th January 2022 Date Last Updated:				
Actor	User				
Description:	Filter schools based o	n user's preference			
Precondition:	User must hav	e an internet connection			
Postconditions:	A list of schools will be displayed under the search bar based on the user's search query and filters				
Priority:	High				
Frequency of Use:	0-40 times per day				
Flow of Events:	System will pro User clicks on	s query in the Search bar ovide suggestions based the "Search" button with ys list of schools based o	on User's query out adding any filters		
Alternative Flows:	User selects the pre-defined filter from the drop-down System will filter the schools based in user's input criteria System will display the filtered schools				
Exceptions:	-				
Includes:	-				
Special Requirements:	-				
Assumptions:	-				
Notes and Issues:	-				

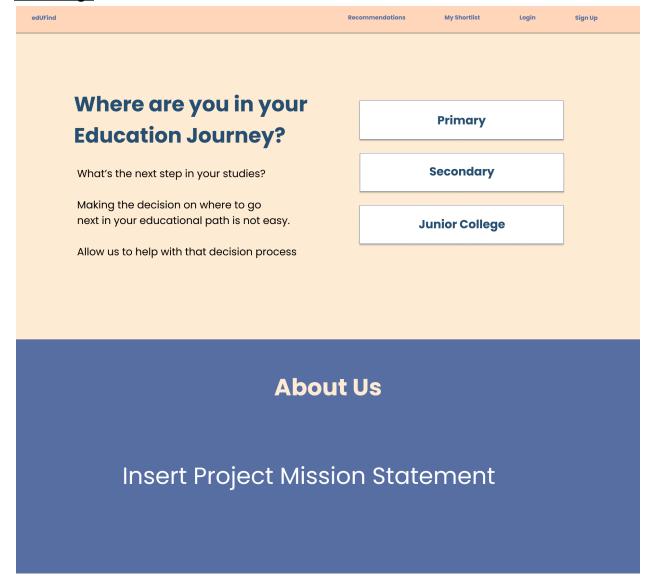
	<u> </u>				
Use Case ID:	15				
Use Case Name:	Select School				
Created By:	Andrew Ng Last Updated By Adi				
Date Created:	28 th January 2022 Date Last Updated: 22 nd March 2022				
Actor	User				
Description:	User selects a school	and its information is dis	played		
Precondition:	User must hav	e an internet connection			
Postconditions:	Selected school	ol's information is display	/ed		
Priority:	High				
Frequency of Use:	0 - 20 times per day				
Flow of Events:	 System displays a list of all schools User selects a school System displays the selected school's details 				
Alternative Flows:	AF-S1: Filters have been applied 1. System displays a list of schools meeting the criteria of the filters 2. Return to Step 2				
Exceptions:	-				
Includes:	Retrieve the list of school's information				
Special Requirements:					
Assumptions:	-				
Notes and Issues:	-				

Use Case ID:	16				
Use Case Name:	Enter Preferences				
Created By:	Andrew Ng Last Updated By				
Date Created:	10 th February 2022 Date Last Updated:				
Actor	User				
Description:	System recommends a list of schools to the user based on their preferences				
Precondition:	User account must exist in the database User must be logged into his/her account User must have an internet connection				
Postconditions:	Display a list of schools based on user's preferences				
Priority:	Medium				
Frequency of Use:	1-3 time per account creation				
	 User selects Gender, Region, Level of Education, Mother Tongue and CCA Category System displays a list of schools as recommendations 				
Flow of Events:	Tongue and Co	CA Category			
Flow of Events: Alternative Flows:	Tongue and Co	CA Category			
	Tongue and Co	CA Category			
Alternative Flows:	Tongue and Co 2. System display	CA Category			
Alternative Flows: Exceptions:	Tongue and Co 2. System display	CA Category			
Alternative Flows: Exceptions: Includes:	Tongue and Co 2. System display - -	CA Category			

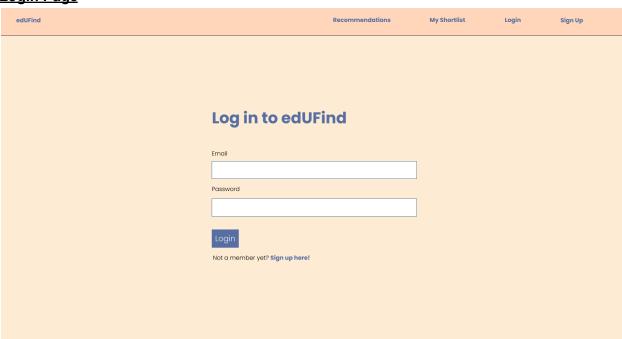
UI Mockup

Refer to UI Mockups v1.1.pdf F File for clearer images

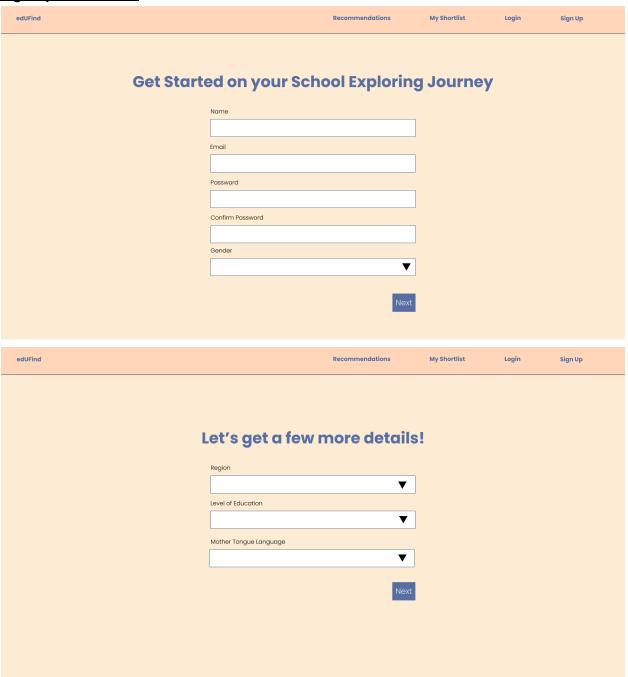
Home Page

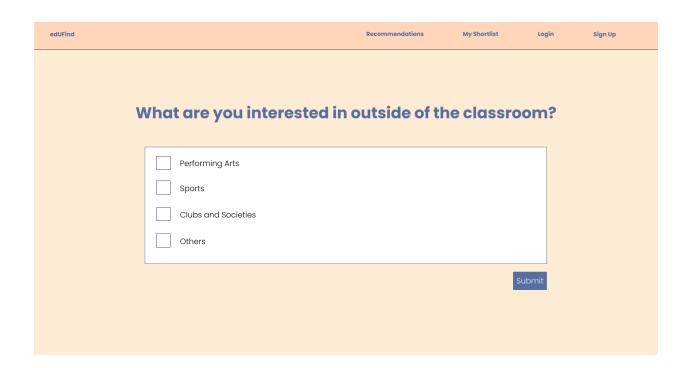


Login Page

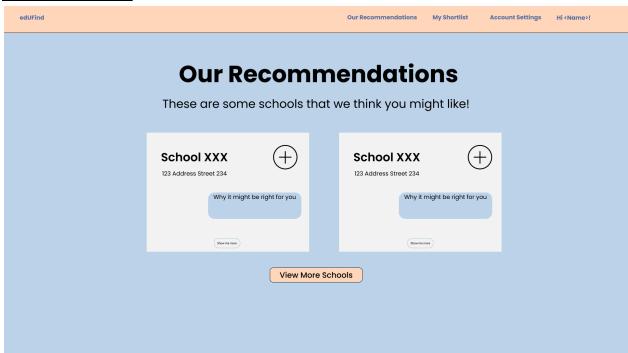


Sign Up Procedures

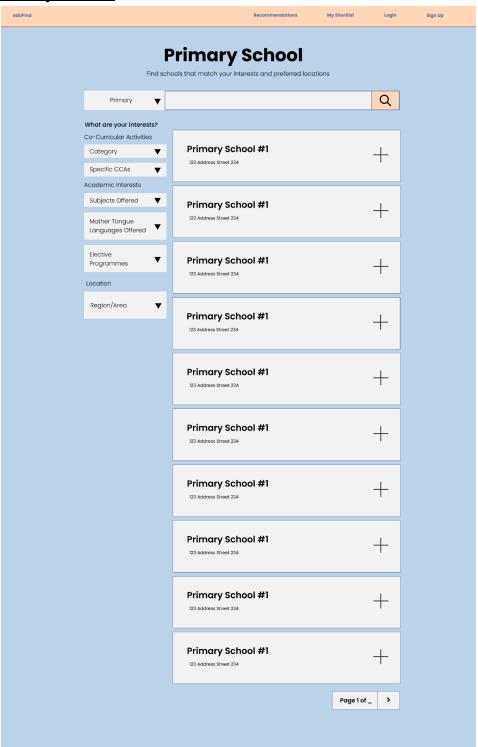




Recommendations



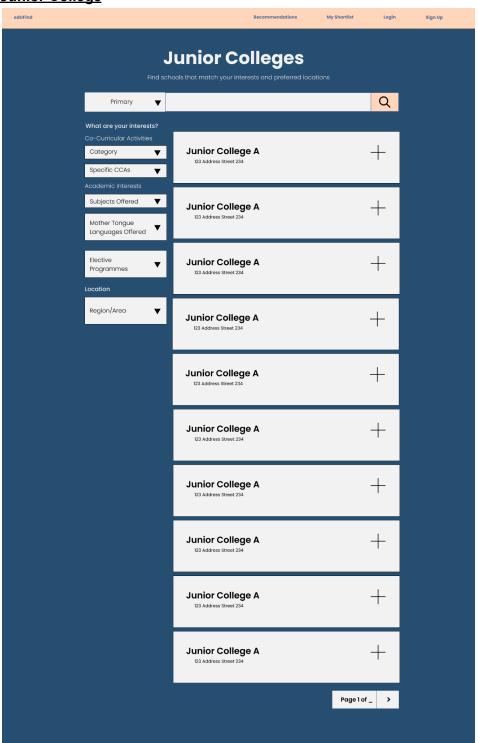
Primary Schools



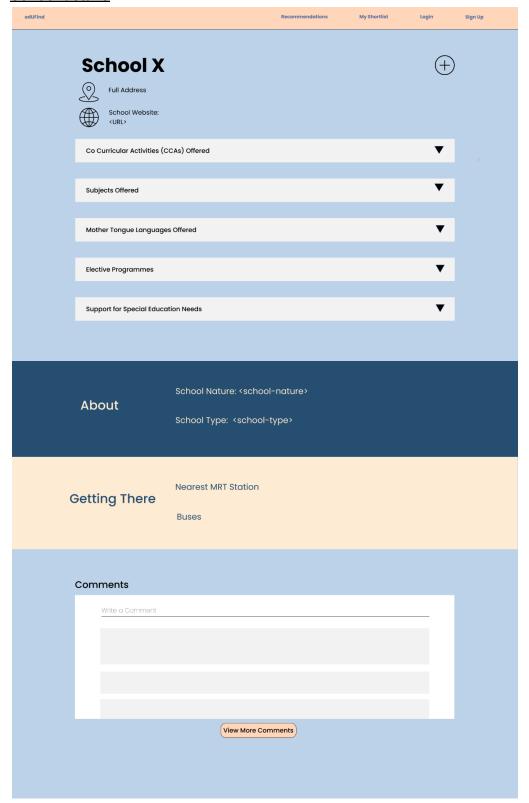
Secondary School



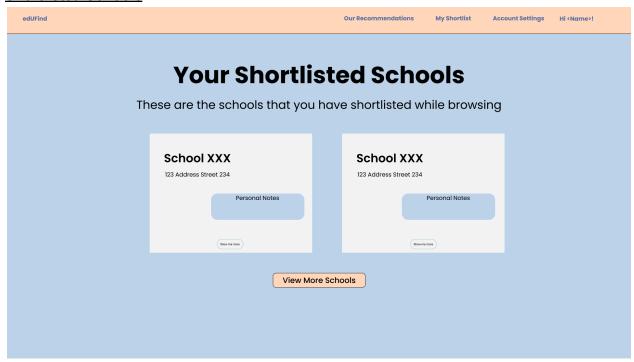
Junior College



School details



Shortlisted Schools

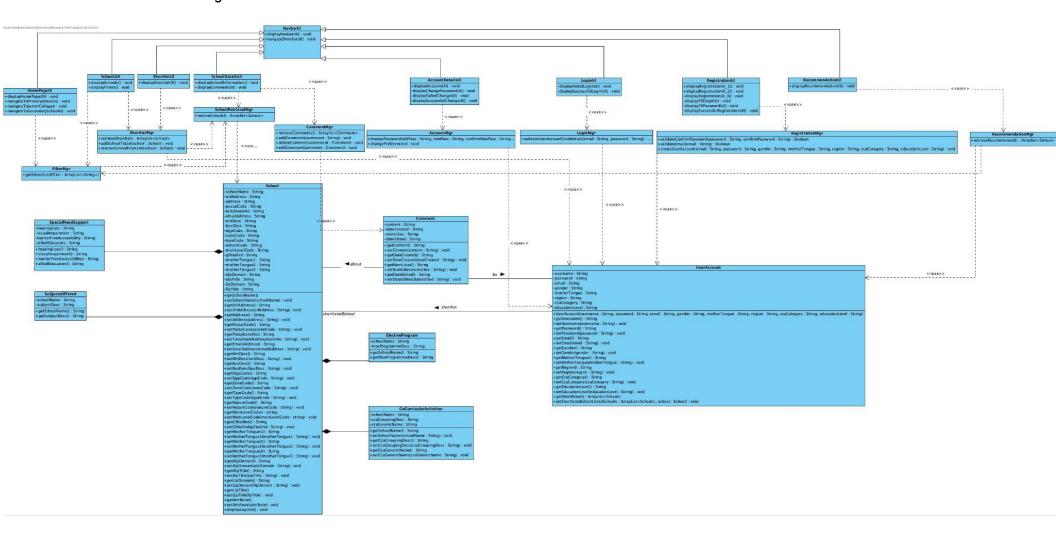


Account Settings

edUFind		Recommendations	My Shortlist	Login	Sign Up
	Account				
	Name				
	Email				
	Password				
	Confirm Password				
	Gender				
	Gerider				
	Region				
	Level of Education				
			▼		
	Interests				
	Co-Curricular Activites (CCAs)				
	Performing Arts				
	Sports				
	Clubs and Societies				
	Others				
	Mother Tongue Languages				
			▼		
		Savo	Changes		
		Suve	Changes		

Class Diagram

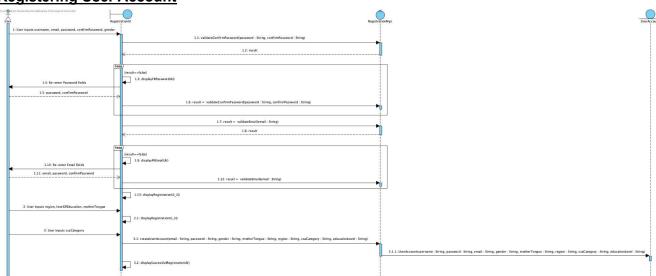
Refer to Class Diagram for the JPG File



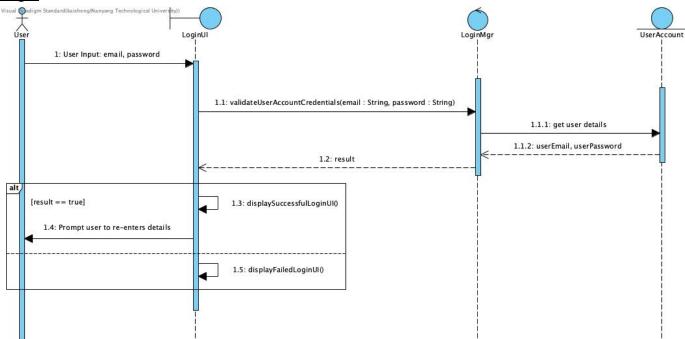
Sequence Diagram

Refer to Sequence Diagram folder for the JPG Files

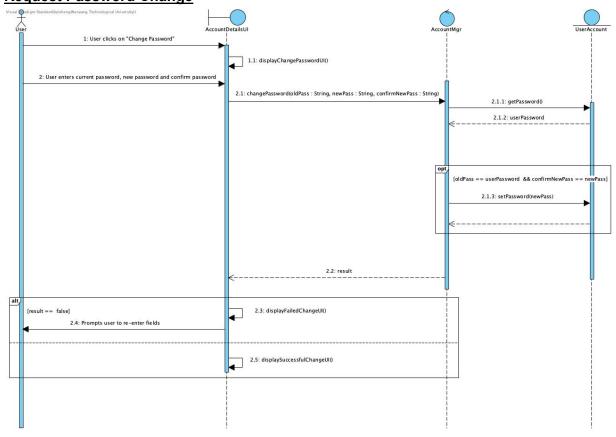
Registering User Account



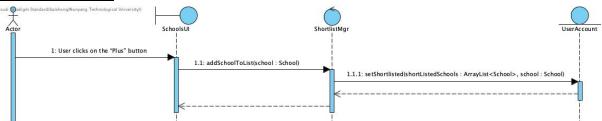
<u>Login</u>



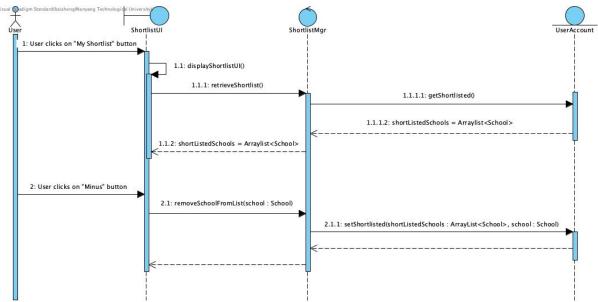
Request Password Change



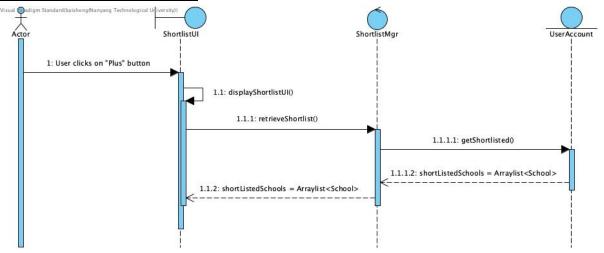
Shortlist Schools



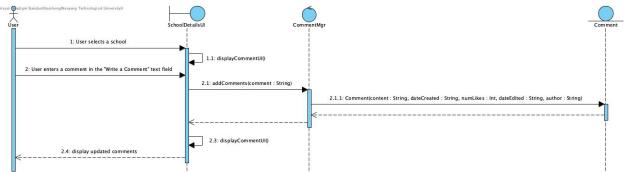
Remove Shortlisted Schools



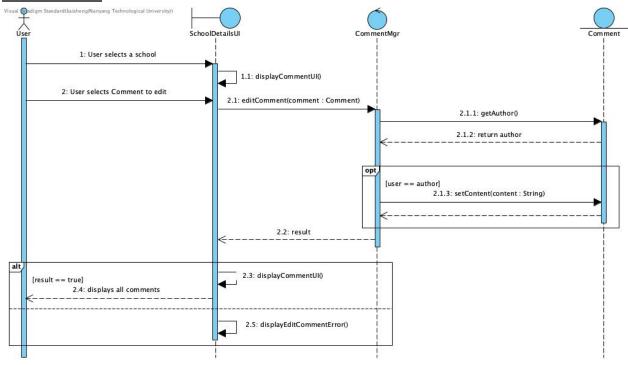
Retrieve Shortlisted Schools



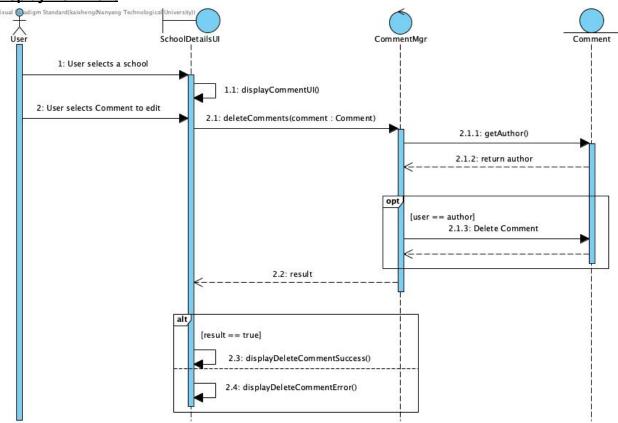
Create Comment



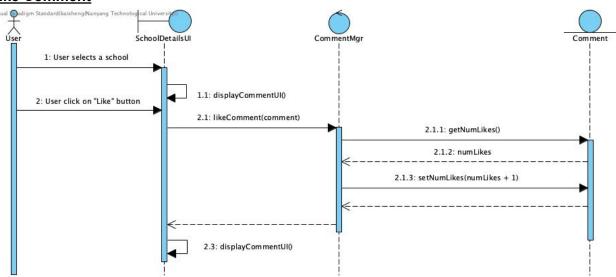
Edit Comment



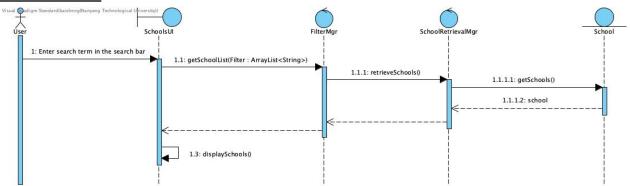
Display Comment



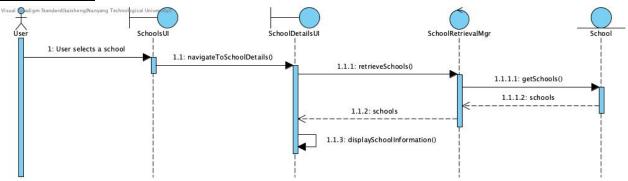
Like Comment



Search School



Select School



Dialog Map

Refer to Dialog Map.png for clearer image

