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SOFTWARE REQUIREMENTS SPECIFICATION
(SRS DOCUMENT)

For

Travika
Version 1.0

By

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Bachelor of Science in Computer Science (2016-2019)

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Revision History

Name	Date	Reason for changes	Version

Application Evaluation History

Comments (by committee) *include the ones given at scope time both in doc and presentation*	Action Taken

Supervised by

Ms. Shahela Saif

Signature_____

1.   Introduction

This entire document will describe the requirement specification for the software of our proposed system. This system will provide personal virtual assistance to tourists with a choice to select an affordable travelling plan proposed by the system. The reader will be furnished with an exhaustive review of our whole system through defined functional and non-functional requirements, quality attributes, use cases and hardware as well as software interfaces. This document will lead us towards defining software design specifications of our system.

1.1   Purpose

Pakistan is overwhelmed with natural beauty and tourism could help in improving its economy but there is no a reasonable way to get personal assistance particularly in Pakistan. Tourists get overloaded with the data available on internet and it seems difficult to filter out useful information. Our proposed application is a personalized virtual travel assistant which will provide users an online personal assistance regarding travelling matters. Travika will be fully functional and trained using Artificial Intelligent and Natural Language Processing techniques. It shall guide users according to their interest, routine, budget and other priorities. It will also guide about weather conditions and other disruptions. It will efficiently engage its user using virtual conversation similar to Q&A. It would also use AI techniques to make a complete and personalized plan for tourists. Moreover, it will also offer users to have a virtual tour of different places of Pakistan.

1.2   Scope

The proposed application is a virtual assistant which will interact with users like a human, where the user is required to define his requirements to get appropriate assistance for travelling. The user doesn't need to switch among different web pages for flight recommendation. Instead, he needs to tell assistant his place of arrival and destination, and other details like numbers of seats, airplane class, date etc. Using web scraping, the application will collect data from the internet and using ML techniques, it will show the filtered results as recommendations. Similarly it can also recommend hotels and restaurants on the basis of user's requirements. Moreover, it will also help user to make a travelling plan according to interest and routine. Additionally, it will also show the public response on social media in the form of user rating for different places of Pakistan. Above all recommendations based on user's requirements, it will make a complete economical travelling plan according to the budget and number of days provided by the user. It will also make an alerts about the weather disruptions and will modify the plan according to user's suggestions. An additional feature of this proposed application is a virtual tour. It will allow users to have a virtual tour of different places of Pakistan. For this purpose, the user doesn't need to switch to google maps or any other application, instead this functionality will be available on this application.

2. Overall description

2.1 Product perspective

This system is free-standing system. It is not the newer version of an existing system, nor belong to any larger system. This system is designed for users that want a travelling plan in Pakistan. The proposed system is a personal virtual travel assistant which will be able to make an affordable travelling plan for the traveller, keeping in view the traveller's budget and staying period, i.e. hotels for stay, flights and other travelling costs. This system will also forecast the weather changes and alert the user to make a perfect plan without any disruption. The propose system will recommend the travel packages/deals after data mining to provide tourists with an economical travelling plan. The system will also be trained according to the tourist's routine. Additionally, it will also allow users to have a VR based tour of any place a user wants to visit or recommended by an assistant based on his interests, routine or requirements etc. All of these functionalities have never been a part of any single system before.

2.2 Operating environment

The system is compatible with Android and iOS. The frontend of the system will be built on React Native so it will run on Android version 4.1 or greater and iOS version 9.0 or greater. Virtual tour will be only be available on those mobiles which are Gear VR headset compatible and supports android version 4.1 (API 16) or greater.

2.3 Design and implementation constraints

Our proposed system does not have any design and implementation constraints.

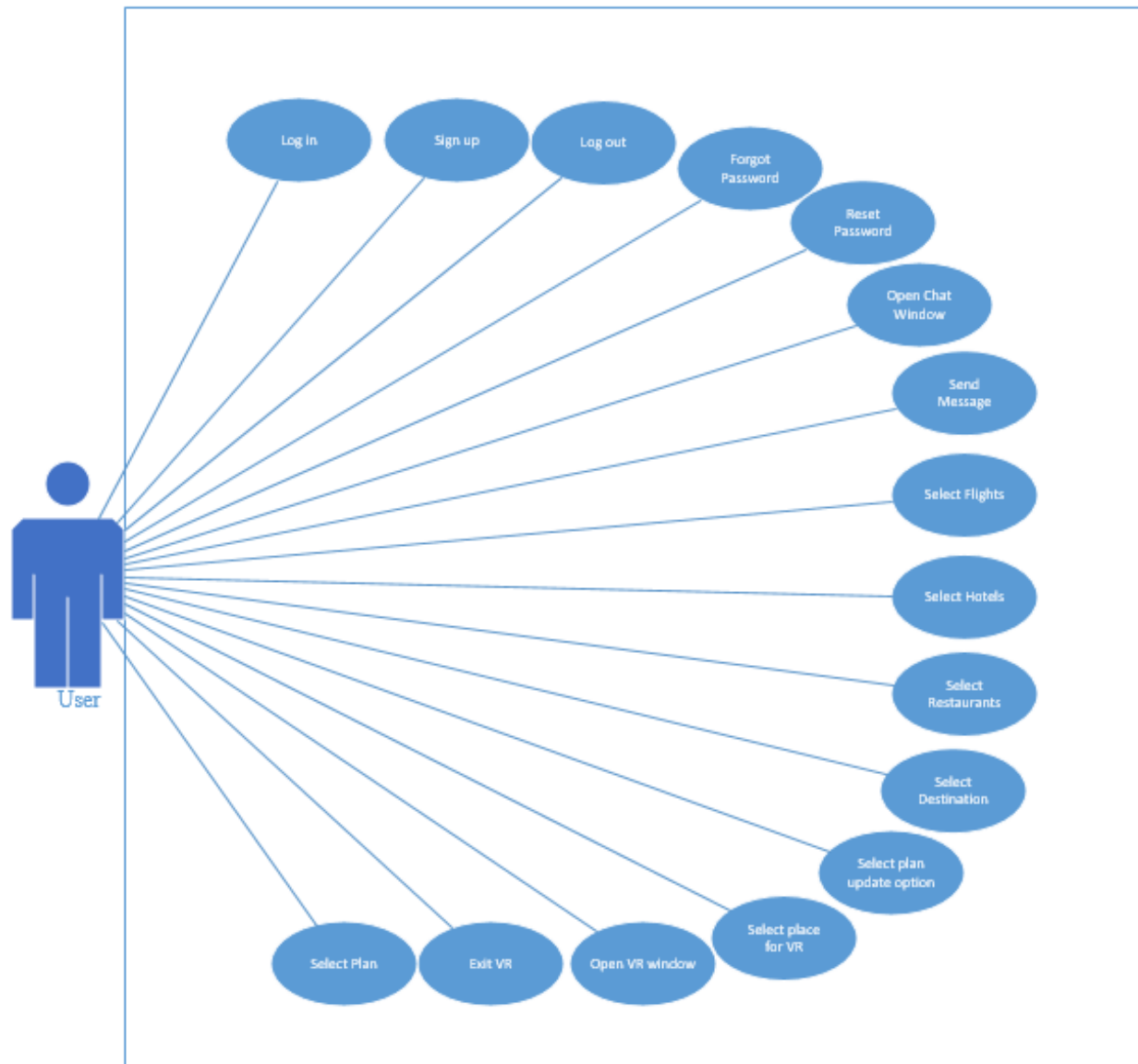# 3. Requirement identifying technique

3.1 Use case diagram

Figure 1: Use Case Diagram (User)

3.2 Use case description

User Management

Use Case ID:	1.1

Use Case Name:	Sign Up
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will create a new account and register him in system's database.
Trigger:	"Sign Up" Link
Preconditions:	User does not have an account for using this system.
Post conditions:	1. User will be register in a database. 2. User will also be logged into the system.
Normal Flow:	1. User will select a "Sign Up" link. 2. User will enter the username, email and password. 3. System will check whether a provided email has already been registered in system's database or not. 4. User will press "Sign Up" button. 5. System will create a new account with the provided information in system's database. 6. System will display the chat window.
Alternative Flows:	None
Exceptions:	In step 3, if the provided information will be matched with any existing records in system's database: 1. System will prompt the user that this email is already registered. 2. User with try again by providing a different email address. 3. System will resume at step 3.
Business Rules	None
Assumptions:	1. User has an email address. 2. User understands English language.

Use Case ID:	1.2
Use Case Name:	Log In
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will be able to access his account.
Trigger:	"Log In" button
Preconditions:	User must have login credentials.
Post conditions:	1. The user will be successfully logged into the application. 2. The main screen will be displayed.
Normal Flow:	1. User will tap on application's logo from the mobile's menu. 2. System will display login page with login form. 3. User will type its login credentials and press 'login' button.

	4. System will call the user to authenticate the system. 5. System after authenticating will redirect the user to its home page.

Alternative Flows:	3a. In step 3, if the user has given wrong credentials.
	    1. System will prompt the user that he has given invalid credentials.
	    2. System will not proceed to the home page.
	    3. System will resume at step 3.
	3b. There will be an option for "forgot password" if user does not remember his password.
	    1. User will input his alternative email address here the authentication email will be sent.
	    2. User will check his email to recover his password.
	    3. System will redirect user's request to reset password link.
	    4. User will reset his password.
	    5. System will redirect to the home page

Exceptions:	In step 4, server can be down or not responding In step 3, if login credential are not valid, login process will be omitted and error message will be displayed.
Business Rules	None
Assumptions:	User can understand English language.

Use Case ID:	1.3
Use Case Name:	Resetting Password
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will reset the password for his account.
Trigger:	"Reset" button
Preconditions:	1. User must exist in database previously. 2. User must be logged into the system or must gone through a verification process.
Post conditions:	User will successfully reset his password.
Normal Flow:	1. System will display an editable form to reset password. 2. User will fill up the required fields of the form and press "Reset" button 3. System will update the new password against user's information in database.
Alternative Flows:	None
Exceptions:	In step 3, Server can be down or not responding when pressing "Reset" button.
Business Rules	None
Assumptions:	User has forgotten the password.

Use Case ID:	1.4

Use Case Name:	Log Out
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will log out from the application.
Trigger:	"Log Out" button
Preconditions:	User is logged into the system.
Post Conditions:	User will have no more access to talk to a chat bot or to perform any other actions on this system.
Normal Flow:	1. User taps on "Log Out" button. 2. User logs out from the application.
Alternative Flows:	None
Exceptions:	None
Business Rules	None
Assumptions:	User can understand English language.

Use Case ID:	1.5
Use Case Name:	Display a Chat Window
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will get an access to chat window of the system.
Trigger:	"Chat" button
Preconditions:	User is logged in or signed up for the system.
Post conditions:	The user will get an access to chat window will be able to chat with Travika.
Normal Flow:	1. User will fill up the log in form. 2. System will check the entered user credentials. 3. System will display the main chat window. 4. User will now be able to start a conversation with a chat bot.
Alternative Flows:	In step 1, if user is not registered in system's database then user has go through a sign up process. 1. User will tap a "Sign up" link. 2. System will show an editable sign up form. 3. User will fill the required fields with correct information. 4. User will tap a "Sign up" button. 5. System will resume at step 3.
Exceptions:	None
Business Rules	None

Assumptions:	User can understand English language.

Use Case ID:	1.6
Use Case Name:	Send message
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will type any text message and press "send" button to ask queries and talk to Travika.
Trigger:	"Send" button
Preconditions:	User is logged in or signed up for the system.
Post conditions:	The user will get an access to chat window will be able to chat with Travika.
Normal Flow:	1. User will type a text message and press a "send" button. 2. System will respond to the message and whole chat will be displayed in chat window.
Alternative Flows:	None
Exceptions:	None
Business Rules	None
Assumptions:	User can understand English language.

Flight Recommendations:

Use Case ID:	2.1
Use Case Name:	Select recommended flight
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will press a button "Take it" button present against each flight recommended by the system to select flights.
Trigger:	"Take it" button
Preconditions:	User is logged into the system.
Post conditions:	Selected flight will be stored by the system.
Normal Flow:	1. System will display the list of available flights. 2. User will press a button "Take it". 3. System will store the name of selected flight into the database.
Alternative Flows:	None
Exceptions:	1a. In step 1, if any hotel near desired place is not available. 1. The following response is generated: "Flights up to your requirements are not available. Please modify your requirements." 2. User will send a new message or change his requirements. 3. System will resume at step 1.

	1b. In step 1, if user does not provide required details like place, budget etc.
	  1. System explicitly asks for required information.
	  2. User provides all required details.
	  3. System will resume at step 1.

Business Rules	None
Assumptions:	User can understand English language.

Hotel/Restaurants Recommendations

Use Case ID:	3.1
Use Case Name:	Select recommended hotel
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will press a button "Select" button present against each hotel recommended by the system to select hotel.
Trigger:	"Select" button
Preconditions:	User is logged into the system.
Post conditions:	Selected hotel will be stored by the system
Normal Flow:	4. System will display the list of available hotels. 5. User will press a button "Select". 6. System will store the name of selected hotel in the database.
Alternative Flows:	None

Exceptions:	1a. In step 1, if any hotel near desired place is not available.
	  4. The following response is generated: "Hotels up to your requirements are not available. Please modify your requirements."
	  5. User will send a new message with changed requirements.
	  6. System will resume at step 1.
	1b. In step 1, if user does not provide required details like place, budget etc.
	  4. System explicitly asks for required information.
	  5. User provides all required details.
	  6. System will resume at step 1.

Business Rules	None
Assumptions:	User can understand English language.

Use Case ID:	3.2
Use Case Name:	Select recommended restaurant
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will press a button "Select" button present against each restaurant recommended by the system to select restaurants.

Trigger:	"Select" button
Preconditions:	User is logged into the system.
Post conditions:	Selected restaurant will be stored by the system.
Normal Flow:	7. System will display the list of available restaurants. 8. User will press a button "Select". 9. System will store the name of selected restaurant in the database.
Alternative Flows:	None

Exceptions:	1a. In step 1, if any hotel near desired place is not available.
	    7. The following response is generated: "Restaurants up to your requirements are not available. Please modify your requirements."
	    8. User will send a new message or change his requirements.
	    9. System will resume at step 1.
	1b. In step 1, if user does not provide required details like place, budget etc.
	    7. System explicitly asks for required information.
	    8. User provides all required details.
	    9. System will resume at step 1.

Business Rules	None
Assumptions:	User can understand English language.

Recommendations based on routine/interest:

Use Case ID:	4.1
Use Case Name:	Select place (recommended on the basis of routine)
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will press "Select" button present against each place provided by the system to select any one suitable destination for him.
Trigger:	'Select' button.
Preconditions:	User is logged into the system.
Post conditions:	System will recommend places for user according to his routine.
Normal Flow:	1. User will press a button "Select". 2. System will store the name of a places as user's destination.
Alternative Flows:	None
Exceptions:	None
Business Rules	None
Assumptions:	User can understand English language.

Social Media Analysis:

Use Case ID:	5.1
Use Case Name:	Recommend Highly Rated places
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will press a button "Highly Rated" from the options suggested by the system in the chat window and the system will ask further (if required) then will provide the highly rated place on the basis of social media ratings.
Trigger:	'Highly rated' button
Preconditions:	User is logged into the system.
Post conditions:	Places will be recommended to the user which are highly rated on social media.
Normal Flow:	1. User will press a "Highly Rated" button from the options suggested by the system in chat window. 2. System will ask further (if required). 3. System recommends places which are highly rated on social media websites after performing social media analysis.
Alternative Flows:	None
Exceptions:	None
Business Rules	None
Assumptions:	User can understand English language.

Make a plan:

Use Case ID:	6.1
Use Case Name:	Select plan
Actors:	Primary Actor: User Secondary Actor: System
Description:	User will press a button "Select" button present against each plan provided by the system to select any one adequate plan for him.
Trigger:	"Update Plan" button
Preconditions:	1. User is logged into the system. 2. System has already made a plan for the user.
Post conditions:	Plan will be updated according to user's desire.
Normal Flow:	1. User will press a button "Select". 2. System will store the information related to that plan into the database.
Alternative Flows:	None

Exceptions:	None
Business Rules	None
Assumptions:	User can understand English language.

Use Case ID:	6.2
Use Case Name:	Select update plan options
Actors:	Primary Actor: User Secondary Actors: System
Description:	User will press a button "Select" button present against each plan update option provided by the system to select any one adequate plan for him.
Trigger:	'Make a plan' button
Preconditions:	User is logged into the system.
Post conditions:	An affordable plan will be provided to the user in chat window.
Normal Flow:	1. User will press a button "Select". 2. System will store the information related to that plan into the database.
Alternative Flows:	None
Exceptions:	None
Business Rules	None
Assumptions:	User can understand English language.

Optimized disruption Management

Use Case ID:	7.1
Use Case Name:	Enable weather alerts
Actors:	Primary Actor: User Secondary Actor: System
Description:	User will press an icon for "Enable Weather Alerts" to enable weather forecast daily notifications for the place user planned to go.
Trigger:	"Weather Forecast" button
Preconditions:	User is logged into the system.
Post conditions:	System will alert the user about weather updates on daily basis.
Normal Flow:	1. User will press an icon for "Enable Weather Updates". 2. System will check for online updates regarding weather forecast. 3. System will notify user about weather updates. 4. System will check weather updates on daily basis.
Alternative Flows:	None
Exceptions:	None
Business Rules	None

Assumptions:	User can understand English language.

Use Case ID:	7.2
Use Case Name:	Weather Forecast
Actors:	Primary Actor: User Secondary Actor: System
Description:	User will press a button "Weather" from the options suggested by the system in the chat window and system will provide the weather updates.
Trigger:	"Weather" button
Preconditions:	User is logged into the system.
Post conditions:	System will inform the user about weather updates for the place user planned to go.
Normal Flow:	1. User will press a button "Weather". 2. System will check for online updates regarding weather forecast. 3. System will provide the weather updates.
Alternative Flows:	None
Exceptions:	None
Business Rules	None
Assumptions:	User can understand English language.

Virtual Tour

Use Case ID:	8.1
Use Case Name:	Virtual Tour
Actors:	Primary Actor: User Secondary Actor: System
Description:	System will allow the user to watch a VR tour of desired places.
Trigger:	"Virtual Tour" button
Preconditions:	1. User is logged into the system. 2. User must have a VR gear headset. 3. User must have a VR gear compatible handset.
Post conditions:	User will have a VR tour of a desired place.
Normal Flow:	1. User presses VR Tour button present on the Home screen. 2. User enters a name of a place and presses a 'Select' button. 3. User can now watch a VR Tour of selected place.
Alternative Flows:	None
Exceptions:	Panoramic street views are not available for a selected place.
Business Rules	None

Assumptions:	User can understand English language.

Use Case ID:	8.2
Use Case Name:	Select place for VR tour
Actors:	Primary Actor: User Secondary Actor: System
Description:	User will select a place for VR tour.
Trigger:	"Exit" button
Preconditions:	1. User is logged into the system. 2. User must have a VR gear headset. 3. User must have a VR gear compatible handset.
Post conditions:	User will have a VR tour of a desired place.
Normal Flow:	1. User will enter name of a place in the provided field. 2. System will redirects the user to VR tour of that place.
Alternative Flows:	None
Exceptions:	Panoramic street views are not available for a selected place.
Business Rules	None
Assumptions:	User can understand English language.

Use Case ID:	8.3
Use Case Name:	End VR Tour
Actors:	Primary Actor: User Secondary Actor: System
Description:	System will allow the user to end a VR tour of desired places.
Trigger:	"Exit" button
Preconditions:	4. User is logged into the system. 5. User must have a VR gear headset. 6. User must have a VR gear compatible handset.
Post conditions:	User will have a VR tour of a desired place.
Normal Flow:	3. User will press "Exit" button present on the right corner of VR screen. 4. System will end VR tour and redirect to home screen.
Alternative Flows:	None
Exceptions:	None
Business Rules	None
Assumptions:	User can understand English language.

4. Functional Requirements

Identifier	1.1
Title	Sign Up
Requirement	User will be provided a link with an editable form asking for: 1. Username 2. Email 3. Password These details will be stored to database
Source	Team members
Rationale	To create a new user in database and to get an access to the system.
Business Rule (if required)	None
Dependencies	Null
Priority	High

Identifier	1.2
Title	Log In
Requirement	User will be provided a link with an editable form asking for: 1. Email 2. Password
Source	Team members
Rationale	To log in for secure access
Business Rule (if required)	None
Dependencies	Null
Priority	High

Identifier	1.3
Title	Forgot Password
Requirement	User will be provided a link for entering verification code.
Source	Team members
Rationale	User wants to log in to system but does not know the correct password.

Business Rule (if required)	None
Dependencies	Null
Priority	High

Identifier	1.4
Title	Send Code
Requirement	The system will generate a unique code and send this verification code to the provided email.
Source	Team members
Rationale	The user might forget password and needs to verify his identification.
Business Rule (if required)	None
Dependencies	None
Priority	High

Identifier	1.5
Title	Verify Code
Requirement	User will be provided a link with an editable form to enter a received code. The system will match the entered verification code with the one that system sent to the user's email.
Source	Team members
Rationale	A provided code is verified by the system in order to reset password.
Business Rule (if required)	None
Dependencies	8.4
Priority	High

Identifier	1.6
Title	Reset Password
Requirement	User will be provided a link with an editable form asking for: 1. New Password 2. Confirm New Password These details will be stored to database against user's email.
Source	Team members

Rationale	To reset a password
Business Rule (if required)	None
Dependencies	None
Priority	High

Identifier	1.7
Title	Send
Requirement	User will press a 'Send' button to send a message to a chat bot as well as it will be appeared on chat window.
Source	Team members
Rationale	User wants to talk to a bot in human understandable language.
Business Rule (if required)	None
Dependencies	8.1 or 8.2
Priority	High

Identifier	1.8
Title	Log out
Requirement	User will press a 'Log out' button.
Source	Team members
Rationale	To log out of an application
Business Rule (if required)	None
Dependencies	8.1 or 8.2
Priority	High

Identifier	1.9
Title	Enable Voice
Requirement	User will select an icon for 'Voice' to enable voice conversation with an assistant.
Source	Team members
Rationale	To initiate voice conversation with an assistant.
Business Rule (if required)	None

Dependencies	1.1 or 1.2
Priority	High

Identifier	1.10
Title	Verify Login Credentials
Requirement	System will verify in such a way that provided credentials must fulfil the following requirements: 1. Provided email must exist in the database. 2. Password must be the one that is stored in the database.
Source	Team members
Rationale	To select restaurant from a list provided by a system.
Business Rule (if required)	None
Dependencies	1.1 or 1.2
Priority	High

Identifier	1.11
Title	Verify Signup Credentials
Requirement	System will verify in such a way that provided credentials must fulfil the following requirements: 1. Provided email must not exist in the database. 2. Username must be unique or different from the usernames that are already in the database.
Source	Team members
Rationale	To provide a secure access to registered users only.
Business Rule (if required)	None
Dependencies	1.6
Priority	High

Identifier	1.12
Title	Display chat window
Requirement	System will display a chat window after authenticating a user.
Source	Team members

Rationale	To provide an access to start a conversation with Travika.
Business Rule (if required)	None
Dependencies	1.6
Priority	High

Identifier	2.1
Title	Collect requirements for Flights
Requirement	System will collect user requirements including place of departure, destination, class of flight, number of seats etc.
Source	Team members
Rationale	To collect user's requirements for the flights.
Business Rule (if required)	None
Dependencies	None
Priority	High

Identifier	2.2
Title	Scrap data for Flights
Requirement	System will scrap data from top websites for the flights.
Source	Team members
Rationale	To collect flights data.
Business Rule (if required)	None
Dependencies	1.1
Priority	High

Identifier	2.3
Title	Apply conditions for Flights
Requirement	System will apply the user's requirements as conditions on the scrapped data.
Source	Team members
Rationale	To apply user's requirements.
Business Rule (if required)	None

Dependencies	2.2
Priority	High

Identifier	2.4
Title	Filter data for Flights
Requirement	System will filter data on user's requirements from the database.
Source	Team members
Rationale	To filter data.
Business Rule (if required)	None
Dependencies	2.3
Priority	High

Identifier	2.5
Title	Recommend Flights
Requirement	System will provide available flights from the filtered data.
Source	Team members
Rationale	To select flight for a trip.
Business Rule (if required)	None
Dependencies	1.4
Priority	High

Identifier	2.6
Title	Select Flights
Requirement	User will be allowed to select a flight from the list of flights recommended by the system.
Source	Team members
Rationale	To select flights from a list provided by a system.
Business Rule (if required)	None
Dependencies	2.5
Priority	High

Identifier	3.1
Title	Collect requirements for Hotels
Requirement	System will collect user requirements including destination, amount range, range of miles etc.
Source	Team members
Rationale	To collect user's requirements for the hotels.
Business Rule (if required)	None
Dependencies	None
Priority	High

Identifier	3.2
Title	Scrap data for Hotels
Requirement	System will scrap data from top websites for the hotels.
Source	Team members
Rationale	To collect hotels' data.
Business Rule (if required)	None
Dependencies	3.1
Priority	High

Identifier	3.3
Title	Save scrapped data for Hotels
Requirement	System will save the data of the hotels on the CSV file that is scrapped from the top websites.
Source	Team members
Rationale	To save hotels data.
Business Rule (if required)	None
Dependencies	3.2
Priority	High

Identifier	3.4
Title	Apply conditions for Hotels

Requirement	System will apply the user's requirements as conditions on the scrapped data.
Source	Team members
Rationale	To apply user's requirements.
Business Rule (if required)	None
Dependencies	3.3
Priority	High

Identifier	3.5
Title	Filter data for Hotels
Requirement	System will filter data on user's requirements from the database.
Source	Team members
Rationale	To filter data.
Business Rule (if required)	None
Dependencies	3.4
Priority	High

Identifier	3.6
Title	Recommend Hotels
Requirement	System will provide available hotels from the filtered data.
Source	Team members
Rationale	To select hotels.
Business Rule (if required)	None
Dependencies	3.5
Priority	High

Identifier	3.7
Title	Select Hotels
Requirement	User will be allowed to select a hotel from the list of hotels recommended by the system.
Source	Team members

Rationale	To select hotels from a list provided by a system.
Business Rule (if required)	None
Dependencies	3.6
Priority	High

Identifier	3.8
Title	Collect requirements for Restaurants
Requirement	System will collect user requirements including destination, amount range, range of miles etc.
Source	Team members
Rationale	To collect user's requirements for the Restaurants.
Business Rule (if required)	None
Dependencies	None
Priority	High

Identifier	3.9
Title	Scrap data for Restaurants
Requirement	System will scrap data from top websites for the Restaurants.
Source	Team members
Rationale	To collect Restaurants' data.
Business Rule (if required)	None
Dependencies	3.8
Priority	High

Identifier	3.10
Title	Save scrapped data for Restaurants
Requirement	System will save the data of the Restaurants on the CSV file that is scrapped from the top websites.
Source	Team members
Rationale	To save Restaurants data.
Business Rule (if required)	None

Dependencies	3.8, 3.9
Priority	High

Identifier	3.11
Title	Apply conditions for Restaurants
Requirement	System will apply the user's requirements as conditions on the scrapped data.
Source	Team members
Rationale	To apply user's requirements.
Business Rule (if required)	None
Dependencies	3.10
Priority	High

Identifier	3.12
Title	Filter data for Restaurants
Requirement	System will filter data on user's requirements from the database.
Source	Team members
Rationale	To filter data for the Restaurants.
Business Rule (if required)	None
Dependencies	3.11
Priority	High

Identifier	3.13
Title	Recommend Restaurants
Requirement	System will provide available Restaurants from the filtered data.
Source	Team members
Rationale	To select Restaurants.
Business Rule (if required)	None
Dependencies	3.12
Priority	High

Identifier	3.14
Title	Select Restaurants
Requirement	User will be allowed to select a Restaurant from the list of Restaurants recommended by the system.
Source	Team members
Rationale	To select Restaurants from a list provided by a system.
Business Rule (if required)	None
Dependencies	3.13
Priority	High

Identifier	4.1
Title	About interest
Requirement	System will process user's query about his interests and consider it in later recommendations.
Source	Team members
Rationale	To select a destination for tourism.
Business Rule (if required)	None
Dependencies	None
Priority	High

Identifier	4.2
Title	Recommend the places based on users interest
Requirement	After processing the query and fetching out the results relevant to user's interests, system will recommend the places to the user.
Source	Team members
Rationale	To recommend the places relevant to user's interest.
Business Rule (if required)	None
Dependencies	4.1
Priority	High

Identifier	4.3

Title	Get Google location history
Requirement	System will get the information about user's daily routine using his Google location history.
Source	Team members
Rationale	To observe the routine of a user.
Business Rule (if required)	None
Dependencies	None
Priority	High

Identifier	4.4
Title	Maps on graph
Requirement	After getting Google location history of a user, system will map those coordinates on Google map.
Source	Team members
Rationale	To recommend the places relevant to user's routine.
Business Rule (if required)	None
Dependencies	4.3
Priority	High

Identifier	4.5
Title	Get name of locations
Requirement	After mapping on Google Map, system will get the list of names of location.
Source	Team members
Rationale	To recommend the places relevant to user's routine.
Business Rule (if required)	None
Dependencies	4.3, 4.4
Priority	High

Identifier	4.6
Title	Recommend the places based on routine

Requirement	System will recommend places on the basis of the data received by Google location history.
Source	Team members
Rationale	To recommend the places relevant to user's routine.
Business Rule (if required)	None
Dependencies	4.3, 4.4, 4.5
Priority	High

Identifier	5.1
Title	Filtering the place.
Requirement	System will filter the user's desired place from user's query.
Source	Team members
Rationale	To get a place user wants to visit.
Business Rule (if required)	None
Dependencies	None
Priority	High

Identifier	5.2
Title	API call
Requirement	System will make an API call to the social media site for getting the data.
Source	Team members
Rationale	To reach the data on social media sites.
Business Rule (if required)	None
Dependencies	5.1
Priority	High

Identifier	5.3
Title	Stipulate the pages.
Requirement	System will stipulate for the pages of the desired place.

Source	Team members
Rationale	To stipulate the data from social media sites.
Business Rule (if required)	None
Dependencies	5.1
Priority	High

Identifier	5.4
Title	Categorize the place
Requirement	System will categorize the places on the basis of ratings.
Source	Team members
Rationale	To specify the top rated pages.
Business Rule (if required)	None
Dependencies	5.1
Priority	High

Identifier	5.5
Title	Recommend the top rated places
Requirement	System will recommend the user about the top rated pages.
Source	Team members
Rationale	To show the top rated pages.
Business Rule (if required)	None
Dependencies	5.1
Priority	High

Identifier	6.1
Title	Collect requirements for plan
Requirement	System will collect user's requirements like budget and number of days of stay.
Source	Team members
Rationale	To collect user's requirements.

Business Rule (if required)	None
Dependencies	None
Priority	High

Identifier	6.2
Title	Apply conditions
Requirement	System will apply user's requirements as conditions on the data like flights, hotels and restaurants booking.
Source	Team members
Rationale	To apply user's requirements.
Business Rule (if required)	None
Dependencies	6.1
Priority	High

Identifier	6.3
Title	Make calculations
Requirement	System will calculate the total cost for flight, hotels and restaurants keeping in view the provided budget.
Source	Team members
Rationale	To provide an affordable plan
Business Rule (if required)	None
Dependencies	6.2
Priority	High

Identifier	6.4
Title	Make plans
Requirement	System will make affordable plans for the user after calculating the user's requirements.
Source	Team members
Rationale	To make an affordable plans.
Business Rule (if required)	None

Dependencies	6.3
Priority	High

Identifier	6.5
Title	Recommend plans
Requirement	System will provide a list of plans which meet provided user requirements.
Source	Team members
Rationale	To recommend plans
Business Rule (if required)	None
Dependencies	6.4
Priority	High

Identifier	6.6
Title	Select plan
Requirement	User will press 'Select' button present against each plan created by a system.
Source	Team members
Rationale	User wants to select a plan.
Business Rule (if required)	None
Dependencies	6.5
Priority	High

Identifier	6.7
Title	Update plan options
Requirement	System will provide options to update a plan like: 1. Change hotel 2. Change restaurant 3. Change flights 4. Change destination System will allow user to change any one of the above in order to update plan.
Source	Team members

Rationale	To update a plan.
Business Rule (if required)	None
Dependencies	6.6
Priority	High

Identifier	6.8
Title	Select Update option
Requirement	User will select any option to change destination, flight, hotel or restaurant which is a part of plan.
Source	Team members
Rationale	To update a plan.
Business Rule (if required)	None
Dependencies	6.7
Priority	High

Identifier	6.9
Title	Update plan
Requirement	System will update a plan by the changes made by a user.
Source	Team members
Rationale	To update a plan.
Business Rule (if required)	None
Dependencies	6.8
Priority	High

Identifier	7.1
Title	Track the plan
Requirement	System will track the plan after making it done with the planning.
Source	Team members
Rationale	To track the plan for checking disruptions later.
Business Rule (if required)	None

Dependencies	None
Priority	High

Identifier	7.2
Title	Crawl the weather report.
Requirement	System will crawl the specified online weather reports for planned trips.
Source	Team members
Rationale	To crawl over every line of specified weather reports.
Business Rule (if required)	None
Dependencies	7.1
Priority	High

Identifier	7.3
Title	Stipulate keywords for weather disruptions
Requirement	While crawling system will keep searching for the specific keywords regarding weather disruptions.
Source	Team members
Rationale	To search for weather disruptions.
Business Rule (if required)	None
Dependencies	7.2
Priority	High

Identifier	7.4
Title	Crawl the news website
Requirement	System will crawl the specified online news websites after planning the trip.
Source	Team members
Rationale	To keep a check for specified news while crawling over the news website.
Business Rule (if required)	None
Dependencies	7.1

Priority	High

Identifier	7.5
Title	Stipulate keywords for news
Requirement	While crawling system will keep searching for the specific keywords regarding specified news.
Source	Team members
Rationale	To notify user about any destination in a trip.
Business Rule (if required)	None
Dependencies	7.1,7.4
Priority	High

Identifier	7.6
Title	Notify the user
Requirement	System will notify the user before the trip in the case of any disruptions found.
Source	Team members
Rationale	To notify the users in the case of any disruption.
Business Rule (if required)	None
Dependencies	7.1
Priority	Low

Identifier	7.7
Title	Interrogate to update the plan.
Requirement	System after notifying the user about disruption will ask him for the suggestion of update the plan.
Source	Team members
Rationale	To select a highly rated destination for a trip.
Business Rule (if required)	None
Dependencies	7.1
Priority	Low

Identifier	7.9
Title	Regulate the plan on its own
Requirement	If the user does not suggest the new plan, system will do the optimised calculations on its own using AI for the new plan.
Source	Team members
Rationale	To determine the new plan if user did not suggest new plan.
Business Rule (if required)	None
Dependencies	7.1, 7.8
Priority	High

Identifier	7.10
Title	Plan update.
Requirement	After interrogating from user or regulating on its own, system will again notify the user with new plan. If user accepts it, system will finally update the plan.
Source	Team members
Rationale	To notify the user about new plan and update it in the case of user acceptance.
Business Rule (if required)	None
Dependencies	7.1, 7.8 or 7.9
Priority	High

Identifier	8.1
Title	Gateway for virtual tour
Requirement	To experience a virtual tour the link will be provided on top corner of chat. By taping it, user will switch his mode from chat to the VR mode.
Source	Team members
Rationale	To switch the mode from chat to virtual tour.
Business Rule (if required)	None
Dependencies	None
Priority	High

Identifier	8.2
Title	Acquiring the place
Requirement	There will be an input field in which user will be asked to enter the desired city to visit.
Source	Team members
Rationale	To get a place for virtual tour.
Business Rule (if required)	None
Dependencies	8.1
Priority	High

Identifier	8.3
Title	API call
Requirement	System will make an API call to google street view.
Source	Team members
Rationale	To get the panoramas from google street view.
Business Rule (if required)	None
Dependencies	8.1
Priority	High

Identifier	8.4
Title	Searching the required panorama.
Requirement	System after getting access to google street view will now search for the required city's panoramic view,
Source	Team members
Rationale	To get the required panorama.
Business Rule (if required)	None
Dependencies	8.1, 8.3
Priority	High

Identifier	8.5

Title	Fetch the panorama.
Requirement	System after reaching the exact panorama on google street view will fetch it down to the server.
Source	Team members
Rationale	To get the required panorama.
Business Rule (if required)	None
Dependencies	8.1
Priority	High

Identifier	8.6
Title	Display into VR.
Requirement	System will display the fetched panorama into the VR headset (Gear VR) for the user to experience virtual tour.
Source	Team members
Rationale	To let the user experience the virtual tour.
Business Rule (if required)	None
Dependencies	8.1, 8.5
Priority	High

Identifier	8.7
Title	Copy the user's gestures.
Requirement	System will copy the headset's gestures and will set forth the view accordingly.
Source	Team members
Rationale	To make a virtual tour look realistic.
Business Rule (if required)	None
Dependencies	8.1, 8.5
Priority	High

Identifier	8.8
Title	End VR Tour

Requirement	User will be allowed to exit from a virtual tour of a selected place.
Source	Team members
Rationale	To exit VR tour of a selected place.
Business Rule (if required)	None
Dependencies	8.1, 8.6
Priority	High

5. Non Functional Requirements

5.1 Usability

We are developing this system for the use of general public. So anyone who will use this system must understand English language. This system interacts with user in human understandable English language. User does not need any sort of training to understand how to use this system.

An actual purpose for developing this system is that common men would easily be able to use it. Hence it is easy to use and does not involve any complexity.

- The use of NLP will make this system to understand and respond to user's text messages in human understandable language.
- Human like conversation with a system will help user to easily interact with a system.
- The user will be able to use this system without any training.

5.2 Reliability

System will be available 24/7 if user has internet connection. If our system fails then it will show user a message with some suggestion to resolve this problem instantly. This system will get improve with time after training. There is a possibility of less accurate results in beginning but will get better with time and training.
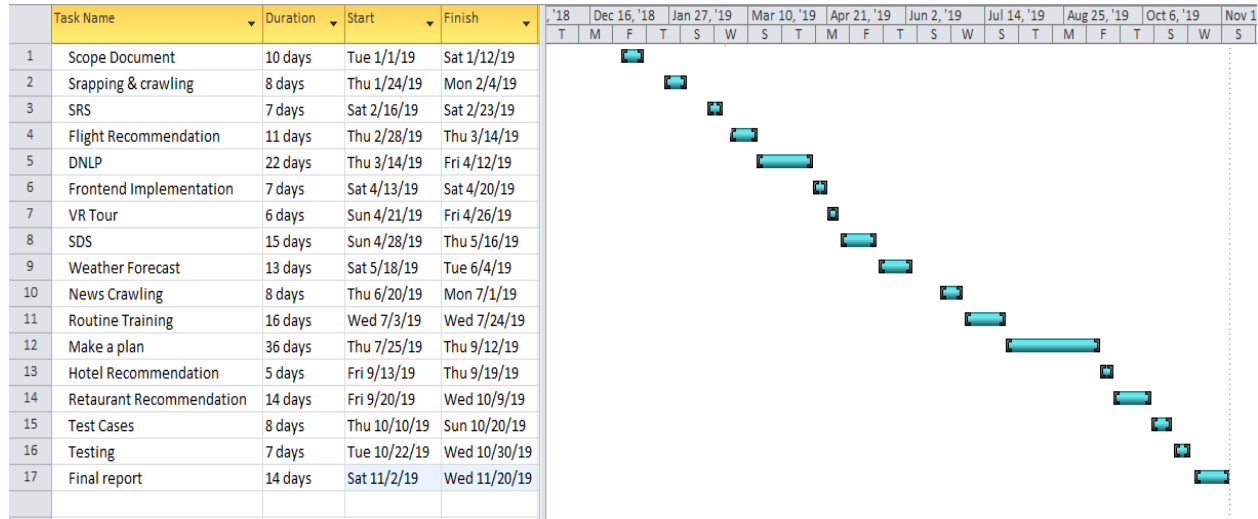
6.   Project Gantt chart

	Task Name	Duration	Start	Finish
1	Scope Document	10 days	Tue 1/1/19	Sat 1/12/19
2	Srapping & crawling	8 days	Thu 1/24/19	Mon 2/4/19
3	SRS	7 days	Sat 2/16/19	Sat 2/23/19
4	Flight Recommendation	11 days	Thu 2/28/19	Thu 3/14/19
5	DNLP	22 days	Thu 3/14/19	Fri 4/12/19
6	Frontend Implementation	7 days	Sat 4/13/19	Sat 4/20/19
7	VR Tour	6 days	Sun 4/21/19	Fri 4/26/19
8	SDS	15 days	Sun 4/28/19	Thu 5/16/19
9	Weather Forecast	13 days	Sat 5/18/19	Tue 6/4/19
10	News Crawling	8 days	Thu 6/20/19	Mon 7/1/19
11	Routine Training	16 days	Wed 7/3/19	Wed 7/24/19
12	Make a plan	36 days	Thu 7/25/19	Thu 9/12/19
13	Hotel Recommendation	5 days	Fri 9/13/19	Thu 9/19/19
14	Retaurant Recommendation	14 days	Fri 9/20/19	Wed 10/9/19
15	Test Cases	8 days	Thu 10/10/19	Sun 10/20/19
16	Testing	7 days	Tue 10/22/19	Wed 10/30/19
17	Final report	14 days	Sat 11/2/19	Wed 11/20/19

Figure 2: Sample Gantt chart

7.   References

- https://www.tripadvisor.com/
- https://www.experfy.com/blog/how-machine-learning-and-predictive-analytics-are-redefining-the-travel-industry

8. Plagiarism Report

SRS

ORIGINALITY REPORT

5%	2%	0%	4%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Higher Education Commission Pakistan Student Paper	3%
2	www.bc.msu.ac.th Internet Source	1%
3	Submitted to University of Derby Student Paper	<1%
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