SOFTWARE REQUIREMENTS SPECIFICATION

for

Majuli Island Virtual Tour

Version 1.0

Prepared by : Group 8
Arpan Khandare (200101018)
Naman Anand (200101070)
Paide Ashish (200101072)
Patel Bhoomiraj (200101075)
Souradeep kar (200101096)
Sujeet Kamble (200101097)

Submitted to : Samit Bhattacharya
Lecturer

February 5, 2023

Contents

1 Introduction

1.1 Purpose

Majuli is the world's largest river island, located in the Brahmaputra. It is on UNESCO's tentative list of World Heritage Sites. Majuli is submerging due to excessive sediment discharge caused by frequent low-magnitude seismic disturbances. The island, once filled with a rich cultural heritage, is now shrinking at a rapid rate and is a major source of concern for the inhabitants. To safeguard the sinking isle, the Union Government of India has sanctioned Rs. 250 crores. This is a government initiative to save the culture and ecology of this island. Our purpose in this project is to provide a virtual tour of the whole island so that anyone from anywhere can virtually visualize the cultural and ecological diversity of its inhabitants without cost.

1.2 Document Conventions

The format specified by IEEE was followed while creating this document.

User	Person interacting with the application
SRS	Software Requirements Specifications
APK	Android Package
Desc	Description
Dep	Dependency

1.3 Intended Audience and Reading Suggestions

This SRS is for developers, project managers, consumers, and users. Further, the discussion will provide all the internal, external, functional and non-functional informations about the Software.

1.4 Project Scope

"Majuli Island Virtual Tour" is intended for providing a Virtual tour of Majuli island and in particular Auniati Satra temple premises to Spiritual users, researchers and visitors.
The user will be able to smoothly experience 3D overview of the whole island with the main attractions being shown on the map. It will allow them to experience the ecology and cultural heritage of Majuli.

2 Overall Description

2.1 Product Perspective

The application gives the same experience of island to users without physically going there. It gives full interactive virtual tour of island. Our main goal here is to preserve its culture as it is the abode of the Assamese neo-Vaishnavite culture.

2.2 User Classes and Characteristics

"Majuli Island Virtual Tour" has basically 3 types of users :

I think Cultural Enthusiast should be there.

- Pilgrims
- Researcher
- Tourists

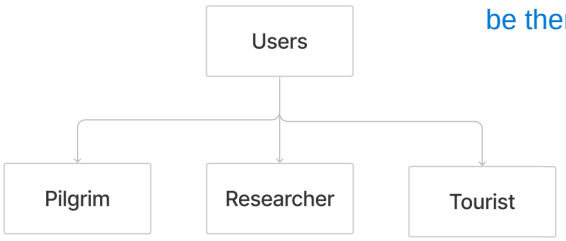


fig 1 : End User Types

2.3 Product Functions

"Majuli Virtual Tour" contains the traditions, flora and fauna of Majuli island. The product provides a real-life outing experience to the users.
Before using the main function of the software result process, users have to be registered.

2.4 Operating Environment

The environment is a smartphone enabled with Google Cardboard which is used to control user's virtual movement. The smartphone with its sensors(gyroscope, accelerator) detects the head movement and results in user's virtual movement.

3 System Features

3.1 Functional Requirements

3.1.1 Authentication

3.1.1.1 Create Account

Input- Email Id, User Name, Password, Interest
Output- Success or failure message
Desc- Creating a new account for user

3.1.1.2 Login

Load is an action

Input- Email Id, Password
Output- Login Status, Load data
Desc- User may log in on different device, so we will load his data there

3.1.1.3 Update Password

3.1.1.3.1 Send OTP

Input- User Email id
Output- One Time password
Desc- It sends one time password to given email id

3.1.1.3.2 Set New Password

Input- New Password
Output- Password update status
Desc- Verification of OTP is done, and new password is set

3.1.1.4 Forgot Password

3.1.1.4.1 Send OTP

Input- User Email id
Output- One Time Password

Desc- It sends one time password to given email id

3.1.1.4.2 Set New Password

Input- New password
Output- Password update status
Desc- Will successfully set new password after OTP verification

3.1.1.5 Change Username

Input- New username
Output- Updated username on cloud
Desc- User might want to change his username

3.1.1.6 Change Interest

Doubt.....

Input- List of Interests
Output- Status of Updating Interests
Desc- We will give personalized tours according to his interests

3.1.1.7 Logout

Input- User Id
Output- Logout status
Desc- Logout User from the device, redirect to login page

3.1.2 User Data

3.1.2.1 Save Data

Input- User Data
Output- Cloud save status
Desc- Save All data of user on cloud, so that his interests, bookmarks can be saved for future

3.1.2.2 Retrieve Data

Input- User Id
Output- Data from cloud
Desc- Retrieve data from cloud to continue previous tour

3.1.2.3 Clear Data

Input- User Credentials
Output- Data cleared from Cloud
Desc- To Erase all data of user from cloud

3.1.3 Teleportation

Input- Location on map
Output- Teleportation to that location
Desc- Rather than taking a long walk to travel to a specific location user may want to reach there immediately so he can directly teleport there

3.1.4 Bookmarking

Input- Location on map
Output- A modified map with added markers
Desc- User might want to bookmark a location so that he can visit it again in future

3.1.5 Minimap

3.1.5.1 User location

Input- User location
Output- Translation of user pointer in the minimap
Desc- As user travels in virtual world, the User pointer should move in real time

3.1.5.2 User View

Input- User FOV
Output- Rendering of Rotated map
Desc- As user looks around, map should also update accordingly in real time

3.1.6 Hotspots

Input- End user type
Output- Hotspot locations in map
Desc- Personalized hotspots for each user type so that tour don't become boring for any user

3.1.7 Volume

3.1.7.1 Narration Volume

Input- Narration volume ID
Output- Volume of the narration
Desc- User can adjust the volume of the narration to get good experience

3.1.7.2 Ambient sound volume

Input- Ambient volume ID
Output- Volume of the Background
Desc- User can adjust the Background volume to get good experience

3.1.8 Interaction

3.1.8.1 Random interactions

Input- User Type
Output- Predefined questions
Desc- To continue conversations we will give predefined questions to user he can ask to particular NPCs.

3.1.8.2 Interactions with NPCs

Input- Question id
Output- Answer id
Desc- To show some kind of conversation between the user and person
Dep- Random Interactions

3.1.9 Festivals

Input- Timeperiod / Festival name
Output- Changed decorations, particular video ids
Desc- At different time periods we will see the different atmospheres in the temple, interactions, activities, videos, etc.

3.1.9.1 Bhaona, Raasleela, Paalnaam videos

Input- Video id
Output- Rendering it on screen
Desc- Screens will show videos related to ongoing festivals

Dep- Festivals

3.1.9.2 Background music

Input- Audio id
Output- Audio in the background
Desc- Background audio inside temple will match with the current festival
Dep- Festivals

3.1.10 Tour Guide

3.1.10.1 Tour Destination

Input- Destination id
Output- Background narration and movement to the destination
Desc- The user may not be able to navigate properly, so we will provide some pre-planned tours or it will be moved to the bookmark marked by the user.
Dep- Bookmarking

3.1.10.2 Guide language

Input- Language id
Output- Language for narration
Desc- The user will be able to select different language or mute the narration of the majuli.
Dep- Language

3.1.10.3 Guide Voice

Input- Voice id
Output- Voice for narration
Desc- The user will be able to select different slags and different gender(male or female) for narration of the majuli.
Dep- Guide Language

3.1.11 Help

3.1.11.1 Show Help

Input : Prompt to view guide
Output : User guide

Description : User will be redirected to a website covering how to use various features of the software.

3.1.11.2 Ask a question

Input : Text containing question description
Output : Relevant answers
Description : User will write his question and on submission will be redirected to a discussion forum where he can view discussions on his question.

3.1.11.3 Report a bug

Input : Text description of the bug found
Output : Prompt displaying bug successfully submitted
Description : The user can report bugs in the software so that they could be addressed by the developing team.

3.2 Assumptions

Our assumption for the software is that , the device through which it is used has atleast 1 GB of ram.Also the device used to be is assumed to be android(version >7) or ios (>8.0).Also devices are assumed to have corresponding sensors(gyroscopic,acceletometer,etc).

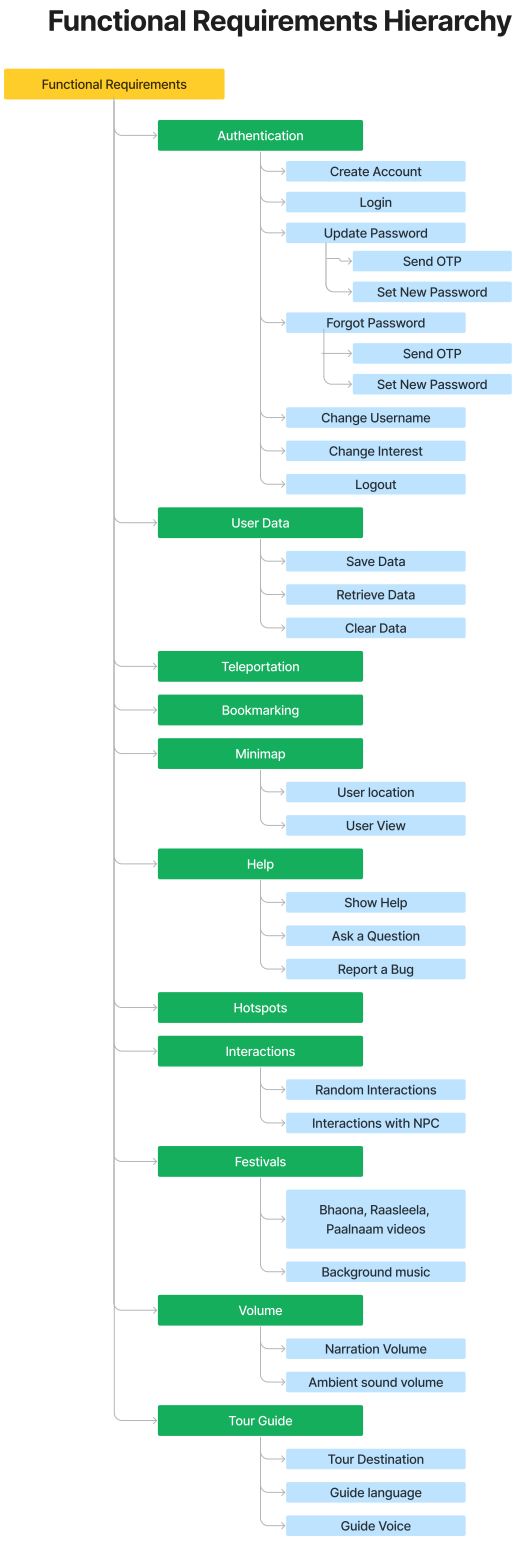


fig 3 : Functional Requirements Hierarchy

4 Nonfunctional Requirements

fig 4 : Brief NFR

4.1 Performance

1. Min ram of 1GB is required to load starting page quickly
2. Min refresh rate of 60hz for smooth and fluid experience
3. Rendering time of map should be less than 2 sec
4. The app should have fast and smooth navigation, with minimal latency.

4.2 Reliability

1. The system will be available for use to user for 24/7.
2. The system will allow the users to resume from the place where the system crashed/network failed.
3. The system will do periodic retries in case of failure of specific part.
4. Core functionalities should always work.
5. Error handling is done for out of the blue input given unintentionally by users.

6. The app will work for almost 99% of time

7. There is a potential for errors relating to the state of the operating system that could prevent the software from launching (for example not enough resources available, etc.). The chance of such an occurrence is at most 1%.

4.3 Portability

1. It works on both android(>4.1) and ios(>8.0).

2. The app should be designed with modular code, to allow for easy adaptation to different platforms and devices.

4.4 Usability

The user interface is so simple, which can be quickly learned by lay users with no or little time investment.The app should have ability to pause and return to the same point.

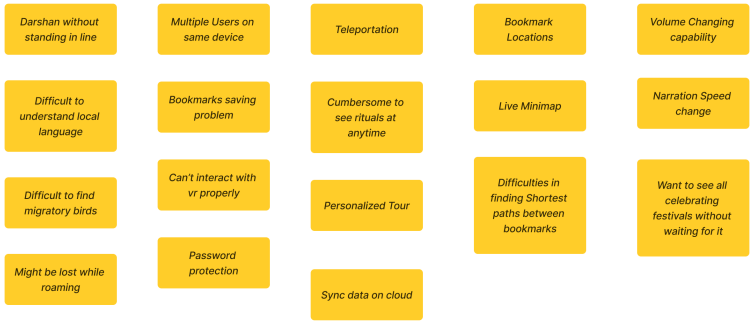
4.5 Maintainability

The app should be well-structured, clean, and organized code, making it easier to maintain and update. The app should be under version control, allowing for easy tracking of changes and rollback to previous versions if needed. Regular feedback from users is taken and corresponding changes and bug fixes will be addressed. Updates can be downloaded from google play store or apple app store.

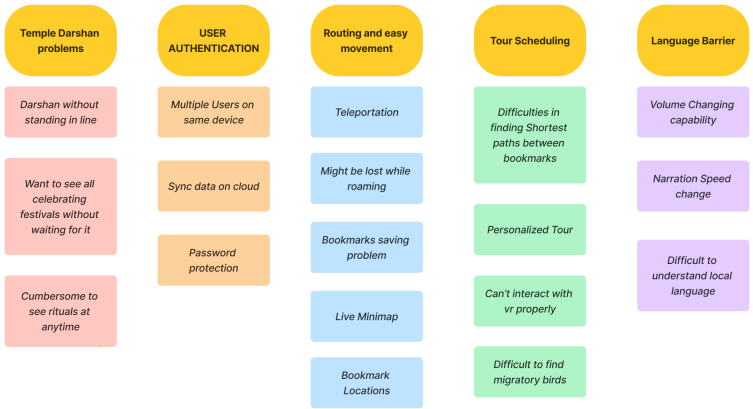
4.6 Security

Sensitive user information must be protected from unauthorized access. The requirement to verify the identity of users before allowing access to the system should be taken into consideration

5 Affinity Diagram



5.1 Grouping of Ideas



6 References

6.1 Youtube Vlogs of Majuli

- Kritika Goel
- Mandy Misra
- Vlog On With Prashant Day 1
- Vlog On With Prashant Day 2
- Jyotishree Regon
- Rittwik Nandan Kashyap
- yaiba's diary
- Prasar Bharati Archives

6.2 Websites

- Auniati Official Website