SOFTWARE REQUIREMENTS SPECIFICTAION

For

MAJULI RIVER ISLAND VIRTUAL TOUR (INTERACTIVE)

- Version 1.0
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1 Introduction

1.1 Purpose

The purpose of this document is to give a detailed description about the requirements of the VR app for a virtual tour of majuli river island and define it's functionality . It covers user interfaces, performance considerations, expected operating environment, interfaces with other software and hardware systems, as well as use cases. It will let the user experience the ecological, cultural and architectural heritage.
It will illustrate the purpose and complete declaration for the development of system along with the system constraints.

1.2 Document Conventions

FID Hierarchical Function Identities

DESC Description of the Functions

FR Functional Requirements

RAT Rational

DEP Dependencies

1.3 Intended Audiences

This Project is useful in context of two things first of all we have to preserve the heritage of the Majuli river island and also spread its cultural activities to outer world so the tourists can plan their trip according to their virtual experience and the school and college students can have an insight of the culture of the island. So the Intended users can be majorily classified into two categories: The students and The tourists.

1.4 Project Scope

This software is intended to assist students and visitors as they navigate the majuli river island. This software is an virtual reality application for oculus quest 2 HMD/ Oculus rift HMD Android-powered mobile devices that help out current and future students and tourists in recognizing the place in the premises, learning more information about specific sites(temples and villages)

2 Overall Description

2.1 Product Perspective

It would outline the features, functions, and requirements of the software product from the perspective of the end user or customer. This would include details on the user interface, navigation, multimedia components, accessibility, and overall user experience. It would serve as a blueprint for the development team to build a product that meets the needs and expectations of the target audience for the virtual tour.

2.2 Product Functions

- Navigation: The ability for the user to move through the virtual tour and explore different areas of the island.
- Multimedia components: The integration of audio, video, images, and text to enhance the user's experience of the tour.
- Information presentation: The ability to display information about the history, culture, and environment of the island in a clear and engaging manner.
- User interaction: The provision of interactive features, such as teleportation, 360-degree panoramic views, interactive maps, multimedia integration to engage the user and enhance their understanding of the island.

2.3 User Class and Characteristics

The users are divides in two classes

1. The students and
2. The tourists.

- The app should be user-friendly and accessible to the target user class.
- School and college students can have the benefits of taking virtual tour as well as learn about the culture and cultural sites of Majuli river island using this software
- Tourists class consists travelers, adventure enthusiasts, and nature lovers who are interested in exploring the island and its surroundings.

2.4 Operating Environment

- To take the virtual tour of Majuli river island we are going to use HMDs and android as the base platform to run the application and we are also going to use client/server database model for the authentication.

2.5 Design and Implementation Constraints

- **Technical Constraints :** platform compatibility, device specifications, and software dependencies.
- **Performance Constraints:** Performance requirements for the virtual tour app, such as response times, processing speeds, and storage capacity.
- **User Experience Constraints:** User experience requirements and expectations that must be met, such as ease of use, accessibility, and compatibility with different types of devices and platforms.
- **Content Constraints:** Requirements and restrictions for the content that will be included in the virtual tour, such as copyright and trademark regulations, data privacy, and cultural sensitivity.

2.6 Assumptions and Dependencies

Assumption:

1. Availability of high-speed internet connection for users to access the virtual tour.
2. The target audience is interested in exploring the Majuli River Island.
3. Assumes the phone is at least android 8.0 with APK 28 or better.
4. Assumes the user grants permission to use location data.
5. Assumes the functionality of Google Maps.

Dependencies:

- Integration with a mapping API for displaying the location of the island.
- Dependence on high-quality images, videos, and audio recordings for the virtual tour.
- The virtual tour should be compatible with VR technology for a more immersive experience.

3 External Interface Requirements

3.1 User Interfaces

- Overview: A brief description of the purpose and goals of the user interface.
- User Interaction: A description of how users will interact with the app, including input methods (e.g. touch, mouse, keyboard) and response times.
- Screen Design: A description of the layout and design of each screen in the app, including the use of graphics, images, and text.
- Navigation: A description of how users will move between screens, including navigation buttons and menu options.
- Error Handling: A description of how the app will handle errors and display error messages to the user.

4 Functional requirements

4.1 Tourist

4.1.1 Authentication System

FID – 01

Title – Login & Logout system

Input – User details

Output – Overview video Or Exit

4.1.1.1 Login

FID – 02

Title-Login of the user

Input-User details

Output-Overview Video

4.1.1.2 Logout

FID – 03

Title-Logout from the app

Input-Already login details

Output-Exit

4.1.2 Teleportation system

FID-04

Title-World in Miniature

Input-Location details of current place or of the other place

Output-View of the destination

4.1.2.1 Move forward

FID-05

Title-Forward direction

Input-Location details of destination

Output-View of the destination

4.1.2.2 Move back

FID-06

Title-Backward direction

Input-Location details of destination

Output-View of the destination

4.1.2.3 Move Right

FID-07

Title-Rightward direction

Input-Location details of destination

Output-View of the destination

4.1.2.4 Move Left

FID-08

Title-Leftward Direction

Input-Location details of destination

Output-View of the destination

4.1.2.5 Move Particular place

FID-09

Title-Particular Location

Input-Location details of destination

Output-View of the destination

4.1.3 Preview

4.1.3.1 More Info.

FID-10

Title-Get Info of the current

Input-Current Location

Output-Info of the current location

4.2 Students

4.2.1 Authentication System

FID – 11

Title – Login & Logout system

Input – User details

Output – Overview video Or Exit

4.2.1.1 Login

FID – 12

Title-Login of the user

Input-User details

Output-Overview Video

4.2.1.2 Logout

FID – 13

Title-Logout from the app

Input-Already login details

Output-Exit

4.2.2 Teleportation system

FID-14

Title-World in Miniature

Input-Location details of current place or of the other place

Output-View of the destination

4.2.2.1 Move forward

FID-15

Title-Forward direction

Input-Location details of destination

Output-View of the destination

4.2.2.2 Move back

FID-16

Title-Backward direction

Input-Location details of destination

Output-View of the destination

4.2.2.3 Move Right

FID-17

Title-Rightward direction

Input-Location details of destination

Output-View of the destination

4.2.2.4 Move Left

FID-18

Title-Leftward Direction

Input-Location details of destination

Output-View of the destination

4.2.2.5 Move Particular place

FID-19

Title-Particular Location

Input-Location details of destination

Output-View of the destination

4.2.3 Preview

4.2.3.1 More Info.

FID-20

Title-Get Info of the current

Input-Current Location

Output-Info of the current location

5 Non Functional requirements

5.1 performance requirements

- Response time: The software should respond to user requests and navigation within an acceptable time frame (e.g., 2 seconds).
- Load capacity: The software should be able to handle large numbers of concurrent users and a large amount of multimedia content.
- Scalability: The software should be able to accommodate increased traffic and data storage demands as the user base grows.
- Stability: The software should be stable and reliable, with minimal downtime or crashes.
- Compatibility: The software should be compatible with different devices and operating systems, such as desktop computers, smartphones, and tablets.

5.2 Security requirements

- Data encryption: The software should encrypt sensitive data, such as user information and multimedia content, to protect it from unauthorized access and theft.
- Network security: The software should have secure communication protocols in place to protect against network attacks and data breaches.
- Access control: The software should enforce role-based access control, ensuring that users can only access the data and functionality they are authorized for.

- Security updates: The software should be updated regularly with the latest security patches to protect against new and emerging threats.

5.3 Logical database requirements

- Data model: The software should have a clear and well-defined data model, describing the structure of the data and how it is related to other data.
- Data integrity: The software should enforce data integrity constraints, such as unique keys and referential integrity, to ensure the consistency and accuracy of the data.
- Data storage: The software should store data efficiently and securely, with fast retrieval times.
- Data backup and recovery: The software should have a robust data backup and recovery mechanism in place, to ensure that data is not lost in the event of a disaster or other outage.
- Data access control: The software should enforce role-based access control, ensuring that users can only access the data and functionality they are authorized for.

THANK YOU