SRS Report

VIRTUAL MUSUEM GUIDE (SOPHOMORE CSE IIT GUWAHATI PROJECT)

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Introduction

The introduction of the Software Requirements Specification (SRS) provides an overview of the entire SRS with purpose, scope, definitions, acronyms, abbreviations, references and overview of the SRS. The aim of this document is to gather and analyze and give an in-depth insight of the complete **Virtual Museum Guide** by defining the problem statement in detail. Nevertheless, it also concentrates on the capabilities required by stakeholders and their needs while defining high-level product features. The detailed requirements of the **Virtual Museum Guide** are provided in this document.

Purpose

The purpose of the document is to collect and analyze all assorted ideas that have come up to define the system, its requirements with respect to consumers. Also, we shall predict and sort out how we hope this product will be used in order to gain a better understanding of the project, outline concepts that may be developed later, and document ideas that are being considered, but may be discarded as the product develops.

In short, the purpose of this SRS document is to provide a detailed overview of our software product, its parameters and goals. This document describes the project's target audience and its user interface, hardware and software requirements. It defines how our client, team and audience see the product and its functionality. Nonetheless, it helps any designer and developer to assist in software delivery lifecycle (SDLC) processes

Project Scope

Primarily, the scope pertains to those who visits museum and prefer digital information on their phone about the monument or read info given besides the monument on their phone. It focuses to help the visitors to the museum and Tourists which allow to find info about the artifact kept in museum.

This SRS is also aimed at specifying requirements of software to be developed but it can also be applied to assist in the selection of in-house and commercial

software products. The standard can be used to create software requirements specifications directly or can be used as a model for defining a organization or project specific standard. It does not identify any specific method, nomenclature or tool for preparing an SRS.

Overall Descriptions

Product Perspective

This android app is going to be run on android devices. This app helps tourists and museum visitors to get info about the artifact placed in the museum. It uses OpenCV for processing the image of the artifact placed in the museum.

Product Features

- Image transmitted by camera is processed by an image processor (OpenCV) wherein the processor checks if the image transmitted by camera matches the image in database.
- If the image matches, then information about the artefact is shown on the screen thus implementing the concept of augmented reality.
- To accommodate the possibility of error, there will be a comments section wherein the user can comment if the history is inaccurate or the image and the artefact history don't match.
- There will be an FAQ button which will contain instruction on general app use.
- The user can change the colour of text in which information is displayed for better readability.
- The app runs on all android phones with internet connection.

Operating Environment

Android phones, Camera quality at least 2 Mega Pixels, Android version 4.2 or above.

Functional Requirements

1.0.0 Search for the artefact

Input: Image taken by camera
Output: Data related to artefact
Description: Image taken by camera will be processed by an image processor and the data related to artefact will be shown on the screen. If the information will not be found in the database then corresponding to that information will be shown on the screen that “information not found”.

1.1.0 Ask for User Input

Input: User input through standard input device
Output: Based on the input given by user
Description: Here, it will be asked to user if he/she wants to search for an artefact or whether he/she have some FAQs.

1.1.1 Take Image

Input: User input through standard input device
Output: Camera will be opened
Description: Image of the artefact will be captured by the camera. The camera will send the image data to image processor.

1.1.2 Auto Rotation

Input: User choice through standard input device
Output: App is shown in Landscape or Portrait mode.
Description: According to the placement of the device (depending on the tilt of the device from its normal position) the app will be viewed in Landscape or Portrait Mode.

1.1.3 FAQs

Input: User choice through standard input device
Output: FAQs will be shown to the user
Description: On the frontend it will be asked to user if he/she wants to know how to use this app and why he/she should use this app.

1.1.4 Show Recent Activity

Input: User choice through standard input device
Output: Recent searches of the artefact will be shown to the user
Description: According to the user input information of the previously searched artefacts will be shown.

1.2.0 Image Processing

Input: Image data for processing
Output: Data produced after image is processed
Description: Image transmitted by camera is passed through image processor and some data attributes will be generated. These attributes will be the input of the next step.

1.3.0 Search Information

Input: Data for searching artefact
Output: Whether image information is present in the database or not
Description: Output of the image processor (from step 1.3) is sent to the server and a backend function searches the attributes in the database and after search is finished an output is generated which is called which tells us that whether image information is found in the database or not.

1.4.0 Check Status

Input: Status generated by Search information module
Output: information related to artefact is stored in packets
Description: The status generated by "*Search Information*" module is used to find whether the image information is present in the database or not and this information whether image information is present or not will be the input of the next entity.

1.5.0 Send Information

Input: Data which says whether image is present in the database or not
Output: Image information will be send to display by the output device
Description: If Output of the "*Check Status*" module says image is matched then the data is sent to the screen and if it says image is not matched then a message is sent to the screen that image is not matched. In both cases data sent will be the input of the next entity.

1.5.1 Display Information

Input: Data to be displayed on the screen
Output: The information will be shown on the screen
Description: The information sent to frontend in step 1.6 is shown on the screen. On the same page there will be an option to change colour of text and background of the text area if user wants better readability

1.5.2 Show Message

Input: Data sent by "*Check Status*" module
Output: A message will be shown on the screen.
Description: If "*Check Status*" module says image is not present in the Database then information is shown on the screen in the form of a message that image information is not found.

1.6.0 Change Style

Input: User input through standard input device
Output: Colour and background colour of text will change
Description: Colour of text will change and background colour of text will also change according to the options provided by the user after the information is displayed on the screen in step 1.5.1

2.0.0 FAQs

Input: user input through standard input device
Output: All FAQs
Description: This section will help user in accessing the app following points are included. How to use app and why they should use this app

Non-Functional Requirements

1.0.0 Contextual Enquiry:

- We observed user using other similar apps. In that app there is a feature to change the position of the text that the app displays. What we observe is that user mostly chooses the text position to be the centre of the screen.
- We observed that there should also be options for changing the text colour and background colour of information display for better readability.
- We also observed that user is facing problems in using various functionality of the app so we decided to add another section FAQ.
- We also observed that when the app takes more than enough time to show information. related to the artefact then the user is obliged to close the app. So we decided after observing many users to set a time after which the app will tell the user that internet connection is not good and to "Try Again Later".
- There are cases in which the app is not able to show information related to the artefact on the screen because of some background effects such as brightness, focussing of the camera, contrast, etc. So whenever such event happens the app should show the possible solutions on the screen in the sidebar.
- It was observed that the user on multiple occasions went to see the already searched artefact. So we decided to add "Recent Search History" feature to help the user save time.
- Some users preferred viewing information in "Landscape" Mode and others in "Portrait" Mode, so "Auto Rotation" was added to the product which will be changed according to the placement of the device.

External Interface Requirements

User Interfaces

XML and Java

Hardware Interfaces

Android version greater than 4.4

Software Interfaces

Android, Android Studio, DB2 (Backend database), OpenCV and JDK

Communication Interfaces

Java and XML