International Research Journal of Innovations in Engineering and Technology (IRJIET)

ISSN (online): 2581-3048

Volume 4, Issue 5, pp 70-73, May-2020

Augmented Reality Based Tourism Application

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***Abstract* - Augmented reality (AR) in tourism has great potential to improve the experience of travelers. New AR mobile apps offer useful information, navigation, instructions, and translations. The tourism industry is firmly based on four whales: accommodation, transportation, catering and tourist attractions. A content management system for AR and knowledge of AR browsers is required. A Smartphone with an Internet connection will bridge the gap with tourism using augmented reality. Augmented reality in the idea is supposed to change what we see. It is said to enhance our experience and increase our pleasure in exploring the world. AR is a perfect tool for tourism. It creates new value and opens up new opportunities for tourism and the tourism industries.**

Keywords: Augmented reality, AR, Tourism application, web side module, system, Architectural design.

I. INTRODUCTION

Augmented reality (AR) is an interactive experience of a real environment in which objects found in the real world are improved by perception information generated by computer, sometimes through multiple sensory modalities, notably visual and auditory. AR can be defined as a system that fulfills three basic characteristics:

- A combination of real and virtual worlds.
- Real-time interaction.
- Accurate 3D recording of virtual and real objects. Augmented reality can greatly improve people's experience with maps and make them better and more practical. Your customers will be grateful to you for using interactive, user-friendly and useful navigation. AR applications open a window to the past. You can tell the story of a ruined building or show what was here hundreds of years ago. Augmented reality has unlimited potential for sharing information with people.

1.1 Aim

Our aim is to create an application which provides ease of access ,user friendly interface in finding out information about a certain location you are visiting and provide additional options in which way the user wants to view the information which may be audio and video.

- To provide application this can help the user in travels.
- To provide a user friendly application.

1.2 Scope

- The effective radius of the product can be increased with the addition of information i.e., location information.
- The future prospects for this product are high as people prefer comfort and ease of access.

II. DEVELOPMENT ENVIRONMENT

The tools, technologies, programming languages that we are making use of to develop and implement in this app are Java, JDK, Automatic Memory Management, MySQL, and Android Technology.

III. SYSTEM ANALYSIS

3.1 Existing System

In the existing world, tourism is a system where in you have the tedious task of employing a tourism company to help and be your guide. And manually searching for the information with regard to the location you are visiting. For each location to visit, user needs to go through the websites and search online to seek information.

Disadvantages

- Manual work
- Time consuming
- No proper knowledge of places, location, tourism spots
- Less efficient.

3.2 Proposed System

We propose to a system which is an integrated web and android application using which any user can get guidance about a place and history of that place. We intend to create an application which cuts out the middle man when it comes to tourism i.e., the tour guide which will be implemented on a augmented reality experience for the user where in they are able to experience the location through a audio or video graphical experience.

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Advantages

- Easy to use and handy
- User Friendly
- Time Efficient
- Knowledge of information availability is high

3.3 Functional Requirements

A functional requirement defines a function of a software system or its components.

3.4 WEB side Module

Admin:

- **Manage places:** Admin can add places, tourist spots, and visiting locations.
- **Manage resources:** Admin can add maps, audio, video and related information in the form of documents.
- **View tourists:** Admin can view tourists who visited places.

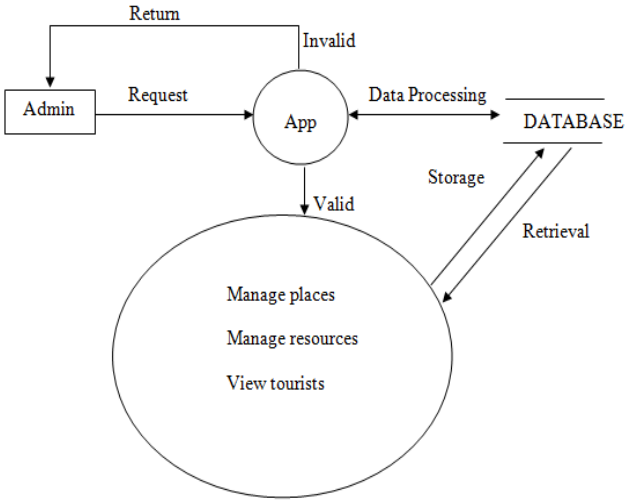

Figure 1: Admin data flow diagram

3.5 ANDROID side Module

User:

- **Select destination:** User can choose place of interest by clicking on select destination from our application.
- **Scan QR code:** User can scan QR code to get information about the desired place.
- **View Documentation:** User can view documents related to visited places.

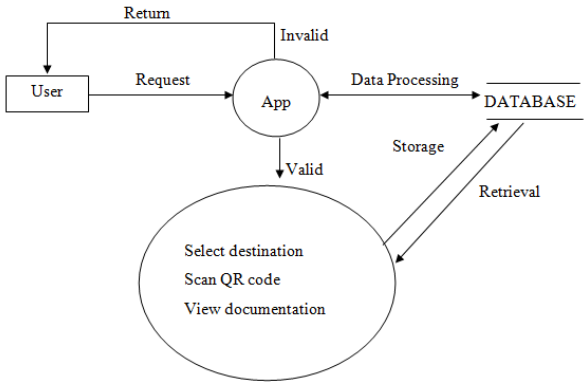

Figure 2: User data flow diagram

3.6 Non-functional Requirements

Reliability: Our Application is reliable in providing 24/7 uninterrupted service. Using our application, location can be easily tracked and alerts are sent immediately.

Security: Our application will provide security for the user's data by avoiding data breach.

Usability: Our application is very easy to install and use, thus fetching data and location becomes easy in our system.

Availability: The application and servers must never be down and provide user details and connectivity should be available to the customers without interruption in service.

IV. SYSTEM DESIGN

System design is the process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements.

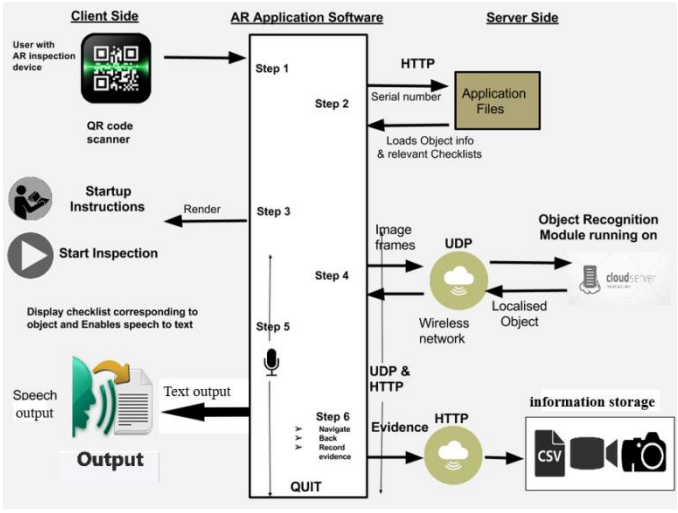

Figure 3: System design of proposed system

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The purpose of the design phase is:

- To plan a solution of the problem specified by the requirements document.
- This phase is the first step in moving from the problem domain to the solution domain.
- The design of a system is the most critical factor affecting the quality of the software.
- It has a major impact on the later phases particularly testing and maintenance.

V. ARCHITECTURAL DESIGN

Architecture focuses on looking at a system as a combination of many different components, and how they interact with each other to produce the desired result. The focus is on identifying components or subsystems and how they connect.

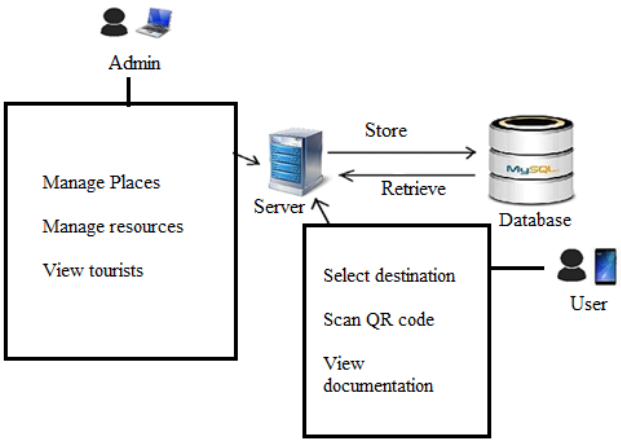

Figure 4: Architectural design

- The system is designed as combination of web application and an android application.
- The integrated modules have their own functionalities.
- Admin module is incorporated in web side.
- The user part developed is accessed through android application.
- The module data is stored in and retrieved from database.
- The processing takes place in the server.

VI. CONCLUSION

The proposed system developed is an integrated web and android application to help the users by saving time and eradicate manual search. This application is used to minimize the search rate by providing easy and handy platform to get information about the tourist places. Nowadays people prefer ease of access and a streamlined approach toward life and want to make the best of it. So our solution is to make an application to gain a better understanding about the location and the best part is that it's all at your finger tips.

By incorporating the mechanism of augmented reality which can greatly improve people's experience with maps, making them better and more convenient. The tourists will be grateful when they get to use an interactive, fun-to-use, and helpful way to navigate and get information about their desired places and visiting spots.

ACKNOWLEDGMENT

We would like to thank and express our heartfelt gratitude to God almighty for the abundant blessings without which this project would not have been successful. We would like to express our sincere gratitude to **Sri. Vasu,** Chairman of VVIET, **Mr. Kaveesh Gowda V**, Secretary of VVIET and all management members of VVIET, for their constant support.

We acknowledge and express our sincere thanks to our beloved Principal **Dr. Ravishankar M,** VVIET, Mysuru who is the source of inspiration. We would like to express our deepest sense of gratitude towards **Dr. Madhu B K**, Head of the Department, CSE, VVIET, Mysuru for his valuable suggestions, support and encouragement.

We would like to extend our heartfelt gratitude to **Mrs. Rumana Anjum, Assistant Professor**, Dept. of CSE, for the valuable guidance and advice. We would also like to thank her for valuable guidance and useful suggestions, which helped us in completing the project work on time. We would also thank all other teaching and non-teaching staffs of the Computer Science Department who have directly or indirectly helped us in completion of this project. Our thanks and appreciation also goes to our family and friends who have willingly helped us out with their abilities.

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Citation of this Article:

Suraj Samuel Manjunath, Rahul R Navalli, Mallikarjun G, Nandakishore, Prof. Rumana Anjum, "Augmented Reality Based Tourism Application" Published in *International Research Journal of Innovations in Engineering and Technology - IRJIET*, Volume 4, Issue 5, pp 70-73, May 2020.

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