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VIRTUAL MUSEUM ANDROID APPLICATION

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Abstract: The Virtual Museum Android App is a mobile application designed to provide an immersive museum experience to users. Users can explore the virtual museum by navigating through different galleries and exhibits, interacting with objects, and learning about their history and significance. The app also includes audio and visual guides, as well as educational resources, to enhance the user's learning experience. The app would use graphical modelling and augmented reality technology to create a realistic and interactive environment for users to explore.

Index Terms **- Audio and visual guides, Educational resources, Graphical models.**

I. INTRODUCTION

As you enter our virtual museum, you'll see that we've curated an extensive collection of exhibits and artifacts from different eras and parts of the world. You can browse through our galleries at your own pace and learn about the objects on display through detailed descriptions, images, and videos. Our exhibits are designed to be interactive, engaging, and informative, giving you a deeper understanding of the history, art, and culture of our world. One of the advantages of our virtual museum is that you can explore our exhibits from anywhere in the world, at any time. You can zoom in on objects, rotate them, and view them from different angles. You can also participate in quizzes, games, and activities that test your knowledge and make learning fun. We believe that museums play an essential role in preserving and sharing our collective heritage, and we're committed to making that heritage accessible to everyone. So come on in and explore our exhibits. We're sure you'll discover something new and fascinating.

II. LITERATUREREVIEW

The authors have introduced android application that recognizes the article which displays the information in image, audio, video or in text format. Now a day, museums are improve visitor's ability to access the information with their own smart phone. In our project we made a virtual museum app especially for our TamilNadu people. So we can easily get the audio explanation about the required thing in our own mother language and also in English. On paper, this approach sounded simple, and many museums jumped on board with a positive outlook about the potential. Online approach for ticket booking for museum reduces paperwork and creates transparent system. While smart phones are well equipped for outdoor as well as indoor tasks. This provides a guidance task in museum. Since smart phones and wireless Internet connection became ubiquitous in the last years, location based interaction, supported via the Global Positioning System (GPS) or Wi-Fi identification became a standard pattern for mobile phone usage. This enabled a variety of context aware applications, which now constitute a considerable part of phone apps, e.g. a dynamic Tourist Guide.

III. RESEARCH METHODOLOGY

1. **Data Gathering -** In the gathering of data, most of the information was collected from the guides of Museums in TamilNadu.

2. **Android SDK and JDK -** The Android Software Development Kit and Java Development Kit were instrumental in the development that allows the developer to build a mobile application that is compatible with Android platforms. This SDK is used in the development of the app that is compatible with Android devices.

3. **Innovation -** The principal innovation of Medieval is the interactive 3D model. It is displayed as a map with a scrollable timeline and includes numerous clickable 'hotspots'. Using the map and timeline, users access over an hour's worth of interactive video covering daily life, historical events, interesting stories and famous characters that existed over 700 years.

IV. TECHNOLOGIES USED

Government Museum Tirunelveli Tour- A virtual Museum application for android devices. A 360º panoramic photography based that allows the users to experience a realistic tour in government museum Tirunelveli.
A Virtual Reality 360° Photography-based Application- The Smithsonian American ArtMuseum (SAAM) Media and Technology Office created a gallery-sized virtual reality application celebrating Renwick gallery, home to the SAAM's collection of contemporary craft.
Indoor virtual archaeology: It Is sometimes not possible to visit a site or explore its findings on-site: here, our application Can act as a presenter, which superimposes information or annotations on e.g. an inaccessible excavation site at face or on posters of it in a museum.

V. SYSTEM ARCHITECTURE

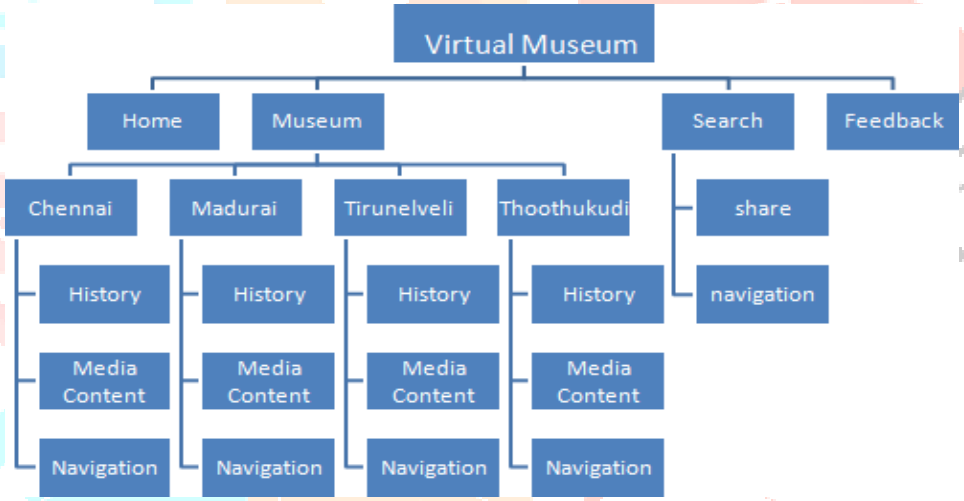


Fig.1 Architecture Diagram

Figure 1 diagram shows the relationship between different components of system. This diagram is very important to understand the overall concept of system. Architecture diagram is a diagram of a system, in which the principal parts or functions are represented by blocks connected by lines that show the relationships of the blocks. This is typically used for a higher level, less detailed description aimed more at understanding the overall concepts and less at understanding the details of implementation.

DATA FLOW DIAGRAM

- The DFD is also called as bubble chart. It is a simple graphical formalism that can be used to represent a system in terms of input data to the system, various processing carried out on this data, and the output data is generated by this system.
- The dataflow diagram (DFD) is one of the most important modeling tools. It is used to model the system components. These components are the system process, the data used by the process, an external entity that interacts with the system and the information flows in the system.
- DFD show the information moves through the system and how it is modified by a series of transformations. It is a graphical technique that depicts information flow and the transformations that are applied as data moves from input to output.
- DFD is also known as bubble chart. ADFD may be used to represent a system at any level of abstraction. DFD may be partitioned into levels that represent increasing information flow and functional detail.

VI. SYSTEM TESTING

System testing of a museum app is an essential part of the development process to ensure that the app works as intended and meets all of the requirements. Here are some steps that can be taken to perform system testing of a museum app:

Test the functionality of the app:

System testing should begin with testing the basic functionality of the app, such as navigation, search, exhibit details, feedback forms, and media sharing. All the features and functions of the app should be tested to ensure that they work as intended.

Test the performance of the app:

The app's performance should be tested by checking the loading speed of exhibits, the responsiveness of the app, and the stability of the app under different conditions, such as slow internet connection or low battery levels.

Test the compatibility of the app:

The museum app should be tested on different devices, such as smartphones and tablets, to ensure that it works on all platforms and operating systems.

Test the security of the app:

The security of the app should be tested by checking for vulnerabilities such as data breaches, unauthorized access, or malware.

Test the usability of the app:

The usability of the app should be tested by checking how easy it is for users to navigate the app, find information, and use its features.

Test the integration of the app:

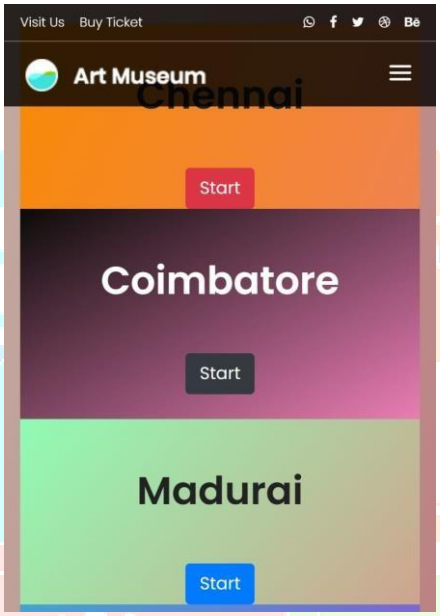
If the museum app is integrated with other systems or services, such as social media platforms or ticketing systems, the integration should be tested to ensure that it works seamlessly.

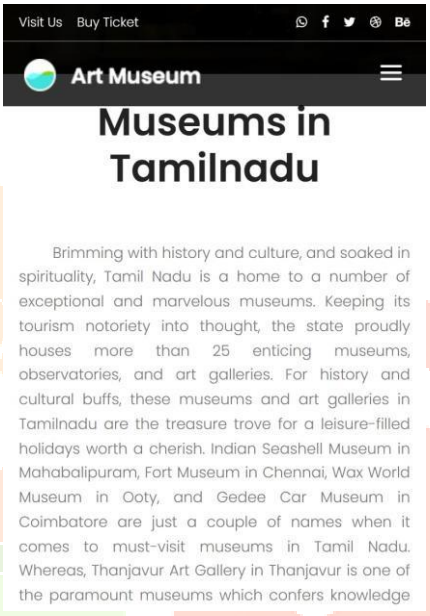
Conduct user testing:

- User testing should be conducted to obtain feedback from real users and identify any issues or areas for improvement.
- By performing system testing of the museum app, developers can ensure that the app is reliable, secure, and user-friendly, and meets the requirements of the museum and its visitors.

VII. MODULES DESCRIPTION

Home -Home page consist of the information about the museums. Here we can know about the details ofMuseum history.





Museums – Here we can know about what kind of things instead of an Museum. The instead things werelisted orderly in this page.

This module typically includes several elements:
Title: The exhibit's title is displayed at the top of the module, often in a large font to make it stand out.
Description: A detailed description of the exhibit or artifact is provided, which can include its history, cultural significance, and other

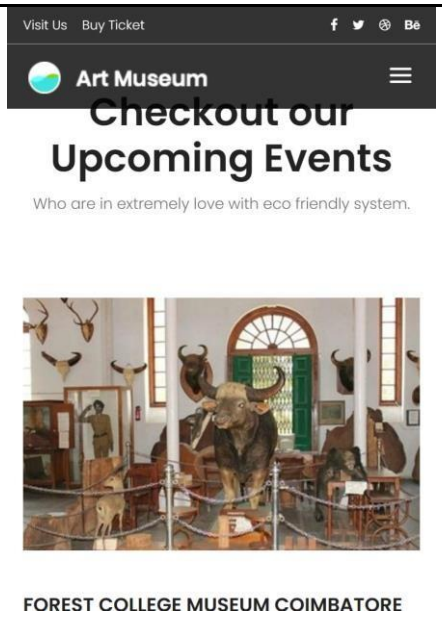
relevant details. This description can be accompanied by images, videos, or audio files to enhance the visitor's experience.
Gallery: A gallery of images or videos can be included to show different views of the exhibit or artifact, or to provide additional information about related items.
Social sharing: Buttons to share information about the exhibit or artifact on social media can be included to help promote the museum and its exhibits.
Visitor information: Links to visitor information, such as hours, admission prices, and directions, can be included to help visitors plan their visit to the museum.
History: A history module can be a valuable addition to a museum app as it helps to provide visitors with a greater understanding of the museum's background and context, which can enhance their overall experience. By showcasing the museum's history in a visual and interactive way, visitors can gain a deeper appreciation for the museum's exhibits and the role they play in preserving and showcasing cultural heritage.
Media Content: Media content can be included to show different views of the exhibit or artifact, or to provide additional information about related items.
Navigation: Navigation in a museum app is an essential component that helps visitors find their way around the museum and locate the exhibits or areas they are interested in. Navigation features are important to include in a museum app as they help visitors to easily locate and explore the exhibits and areas of interest within the museum. This can help to enhance the visitor's overall experience, encourage them to stay longer, and make their visit more enjoyable and memorable.
Search: A search module is an important feature to include in a museum app as it helps visitors to easily locate exhibits and artifacts that match their interests. By providing visitors with relevant and accurate search results, the museum app can help visitors to maximize their time and ensure that they have a positive and engaging experience during their visit.
Share details: Sharing media in a museum app allows visitors to share their experience with others and promote the museum to a wider audience. Social media integration allows visitors to share photos, videos, and other multimedia content directly from the museum app to their social media accounts, such as Facebook, Twitter, and Instagram.
Feedback: Feedback is an important element of any museum app, as it allows visitors to provide their opinions and suggestions about their experience. Feedback forms can be included in the museum app, which allows visitors to provide feedback about their experience, including their likes and dislikes, suggestions for improvements, and comments on specific exhibits or artifacts.

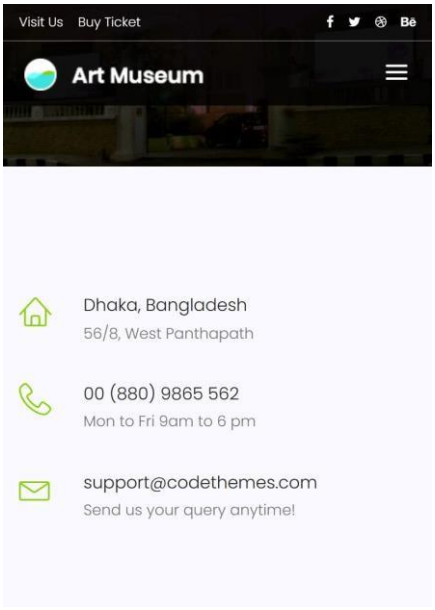
Audio Contends:

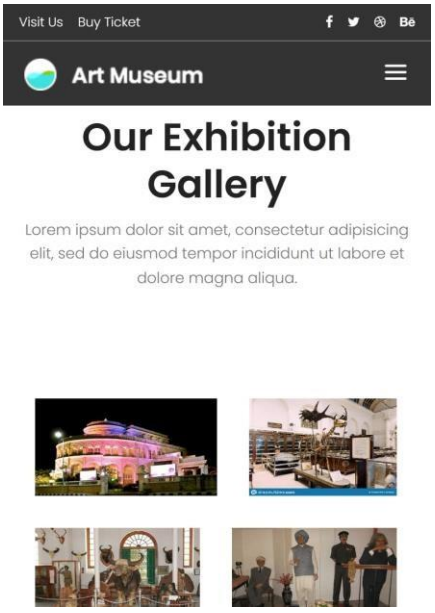
In the multimedia museum guide scenario the headset communicates with a hand-held companion device (smartphone or tablet). Thus, the user can obtain more multimedia information (audio details) in their own language. For that, a full-fledged multimedia museum application which connects to the museum guide device has been developed. It provides a unique opportunity for museums to provide their museum guide visitors with multimedia and interactive features. The museum guiding application enables users to receive additional content like photos, audios and text about the museum exhibits under demand. It also allows to add exhibits to a favourite list which preserves a personal memory of the museum visit.

Audio selection has two methods only our mother tongue tamil and the common language English.The user can select their language in Tamil or English. So user can get more knowledge from this application.

VIII. SAMPLE SCREENSHOTS







IX. FUTURE ENHANCEMENT

As technology advances, there are many ways that our virtual museum can be enhanced to provide an even more immersive and interactive experience for visitors. Here are a few potential future enhancements:

Virtual Reality (VR): Incorporating VR technology into our virtual museum would allow visitors to experience exhibits in a more realistic and engaging way. They could walk through virtual galleries, interact with objects, and even feel as though they are physically present in the museum.

Augmented Reality (AR): AR technology could be used to provide visitors with additional information and context about exhibits. For example, visitors could hold up their smartphones or tablets to exhibits and see additional information, animations, or 3D models overlaid on top of the object.

Artificial Intelligence (AI): AI technology could be used to create personalized tours for visitors based on their interests and preferences. The AI could analyze the visitor's browsing history, search queries, and other data to suggest exhibits that are likely to be of interest.

Interactive Exhibits: Interactive exhibits could be enhanced to provide visitors with more opportunities for hands-on learning and exploration. For example, visitors could manipulate digital models of objects, participate in simulations or games, or engage in virtual experiments.

Multilingual Support: To make our virtual museum accessible to people from around the world, we could provide multilingual support for exhibits. This could include providing translations of exhibit descriptions, audio guides, and other materials.

These are just a few of the many ways that our virtual museum could be enhanced in the future. By incorporating these and other technologies, we can create a more immersive and interactive experience for visitors and continue to provide access to the wonders of our world for generations to come.

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