

# Smart Museum having Audio Playback

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**Abstract:** In today's age, smartness is embodied into everything, every machine can communicate well. To reach this level, our environment needs to become equally intelligent using Internet of Things. These days, people are coming back to historic culture. Museum is a place where historical heritage prevails, hence developing smart museum. In order to make visitors pay heed, we are putting forth an IoT based project on Smart Museum environment which will facilitate information about various monuments in absence of human intervention. In this project, we bank on a device that will scan rfid tag from the monument, find the location name from information stored in memory. Then it will playback the information about the location by reading wav file from SD card.

**Keywords:** IoT, playback, rfid

## 1. Introduction

Often when we visit museum, we are in dilemma about where to start from? Or what is this monument about? And many more. Due to which visit to museum becomes boring and monotonous. To overcome this situation, we put forth a system for museums. Museum is place where historical heritage prevails, hence developing smart museum. In order to make visitors pay heed we are putting forth Smart Museum – an IoT based project which facilitates data regarding various monuments in absence of human intervention. Smart strategies to improve user encounters from each and every domain by replacing physical job, complex duties with IoT device. In such a scenario, a primitive work is entitled by using Internet of Things (IoT), which integrates augmentation of Internet with almost insignificant and trivial exertion "things" that are recognized as smart environment with a certain real motive to provide novel administrations to Users. Motive of this design project is to facilitate a novel multimedia interface for places such as museums and meetings. In the rush of advanced Mobile technologies and improved platforms of multimedia, this proposed system will prove as a beneficial medium which will integrate academics with multimedia

## 2. Literature survey

I did a literature study wherein I found out various papers proposing different systems on same grounds. Smart museum, using Bluetooth Low Energy which is established inside premises, placed on IoT device(having Raspberry PI

that will catch the visitor's motion, will perform subtraction algorithm in background for Image processing and will fetch the localized data. As a result, by directing to cloud processing centre only the matched frame, performance can be improved further [1]. To begin with, we need to upload all the data regarding the artifacts to the cloud. Then everyone can access the information regarding art-history and profiles by using smart phones via mobile application [2]. In this paper, we came across amalgamation of AR (Augmented Reality) and VR (Virtual Reality) technologies, named as MR. This gives user an experience which makes him feel like he is in real space and even lets him have an interaction with virtual objects. This is additionally recognized as a technique to execute reality and virtuality [3]. Alternatively, we can say that MR is Virtual Reality, with a hint of Augmented Reality. Combination of real world and digitalized virtual data is MR [4]. Currently, several fields have various applications of MR. Vicinity calculation [5] is one such application used to converse to and handle adroitness inside different social spaces. In order to handle the problem of indoor spread and to obtain higher precision, example coordinating calculation and unique finger impression procedure [6] were used. RFID for every visitor and a unique tag, including method of MAC Address are put to use for interfacing an exhibition auditorium's antiques certain sights and recordings on related gadget's system [7]. In [8] writer suggests a quality sign (RSSI) flag based on strategy of Localization of Bluetooth. It can similarly employ this Bluetooth Low. Energy in relative intelligent scenario protest's positions can be reinvented.

## 3. System overview

The system consists of an Arduino, RFID reader, SD card reader, RFID tags, audio amplifier and speaker.

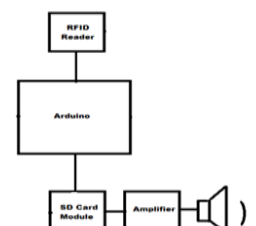


Fig. 1. Block diagram

Every monument in the museum will be embodied with a RFID tag having unique ID which will help to identify each one of them solely. EM 18 is the RFID chip used in our project which will read information via RFID will be attached to each monument which will have unique ID which will help to identify the monument. The RFID Reader used here is EM 18 chip which will read information via RFID tags and send this information to ATmega 328P microcontroller. The microcontroller processes data according to selected tag and depending upon the signal received of tag it will play the associated audio clip. Audio files to be played are stored in SD card which are read using SD card reader. The audio clip played has lower gain. To amplify it to audible sound the audio file is amplified using amplifier circuit.

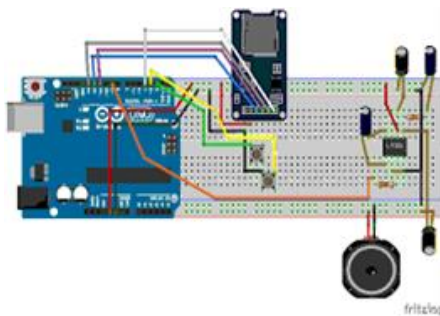


Fig. 2. Interfacing diagram

#### 4. Conclusion

Smart technology which is on verge of rise and its possibilities and applications prove limitless. We have realized that more opportunities will arise not only directly from a new technology, but also from mixing it with rest of the technologies or with pre-existing and novel datasets. To top it, we observe escalation in technology can unlash various ways of going about business for an association, potentially influencing the entire value chain wherein it functions. Concluding, we foresee that our design would prove beneficial for society and individuals by providing assistance in bridging the gap between education and technology. We anticipate to procure the following:

- To improve user experience
- With constructive application of RFID technology, education in zoos and conferences can be enhanced further.

#### 5. Future scope

This design is anticipated to amalgamate and to be proposed into several applications in near future, namely in multimedia improvement, trip guide, mobile application teaching, management of library, factory organization, expansion in field of medicine and in applications of Big Data, it will be popular in industries and several research zones.

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