Idea/Approach Details

Ministry Category: Ministry of AYUSH

Problem Statement: To build a Program where visitor can navigate through the various facilities available in hospital

Problem Code: #AYUSH4

College Code: #4443

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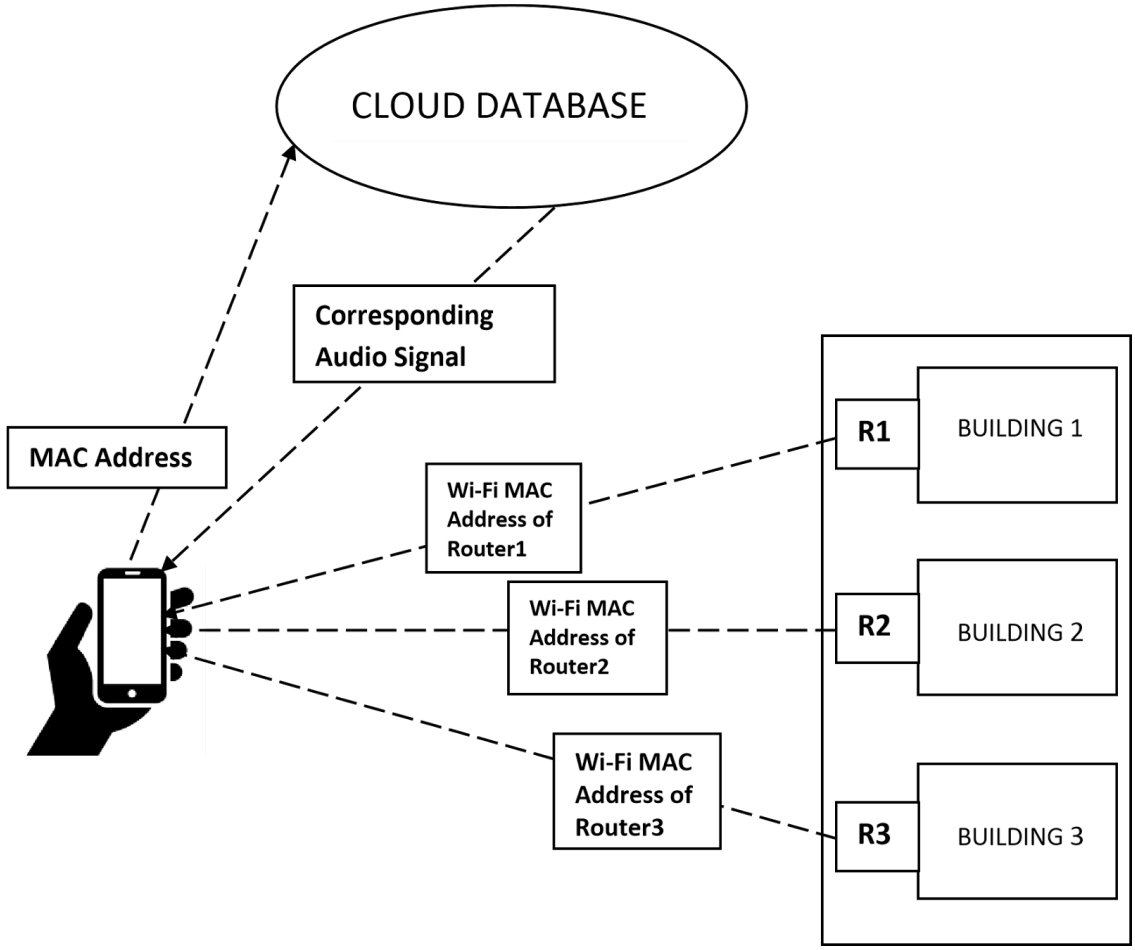
PROJECT IDEA:

Visitors and patients to a hospital are finding it hard to navigate to the required places without the help of others especially, in large sized hospitals. Hence, there is a need to develop a mobile app to help the patient and visitors to navigate to the various facilities in the hospital such as Pediatrics Centre, Emergency Department, OPDs etc. This application will be very useful when a patient arrives in an emergency conditions to direct them to the required destination and this in turn saves their life. This project aims to develop a mobile application using the current technologies to enable the patient and their caretakers to navigate to the required destination in the hospital. The proposed system will provide vocal assistance to the user based on their current location using an android application installed on the mobile tablet device. When the patient navigates, the mobile Wi-Fi will connect to the Wi-Fi access point installed in various parts of the hospital and identifies the MAC address of the corresponding Wi-Fi access point. This MAC address will be sent to the cloud server to identify the current location and the corresponding voice message for the navigation will be sent back to the mobile device and the same will be played to navigate freely without any hassles and reach the particular location. The proposed mobile application can be attached to the smart wheel chairs and stretchers to help the patient to navigate in the hospital. In addition, the voice messages in various languages will be stored in the cloud server and the patient will have the options for choosing the desired language for navigation. Finally, the proposed system can help the patient in saving their critical time and life.

TECHNICAL DESCRIPTION:

The mobile tablet device will be attached to the smart wheelchair and stretchers in the hospitals and connected to the Wi-Fi system in the building. Let us consider a large sized hospital with many buildings, rooms, labs and various departments. The wireless access

point will be placed at different junctions in the hospital and all these access points will be connected to a common server through a router. This database server will contain different audio files in various languages that have the details about the directions to be followed to reach different places in the hospital. The user will use the mobile tablet device to communicate with the server. To find out the particular location of a room, the mobile tablet device will read the MAC address of Wi-Fi access points placed in each of the room. In advance, all the MAC addresses of the rooms with respective locations is stored in the cloud server. The mobile will send the retrieved MAC address to the cloud which will inturn be compared with the pre stored MAC address. If the MAC address is matched the corresponding audio file will be sent back. The received audio file can be played using a headphone connected to the device. The Android application will sense the signal strength of the Wi-Fi routers and based on the signal level of each router, the exact indoor location to the user will be provided. This reduces the time and power consumption of the system. When the user moves away from the Wi-Fi access point, the tablet device will now get connected to the next Wi-Fi access point and once again the required directions will be provided by the server.



USE CASE:

The system can be used in large number of places due to the availability of internet in most of the hospitals. Time of communication is cut short as the person does not need to depend on the hospital staff for navigation. Moreover, the problem of losing time is avoided as the visitors using the system can find the required location without taking the wrong route or even long routes. Outpatients will find it useful to move from one centre to another to consult with various doctors. X-ray labs, scan centres will be present in different locations of the hospital and patients can move easily to these locations by using the system. Apart from important labs and doctor cabins, this system guides patients to find basic amenities such as water dispenser or restrooms along with other facilities such as gift shop and pharmacy. This system can be used by caretakers as well for patients who cannot carry a mobile tablet device. Attaching the tablet to wheelchairs and stretchers would mean that patients who are not able to carry the device can use it in a sitting or lying position. Due to its simple nature, the system can be used by children as well. In case they are lost , the children can use the app and find the help desk from where announcements can be made over the intercom. Since the system will be available in multiple languages, people do not need to worry about comprehending the language and this system can be used in places where english is not that frequently spoken.

SHOWSTOPPER:

Using of Wi-Fi for the system will help in the installation of Wi-Fi routers in all the hospitals, thereby boosting the internet services in the villages and areas without internet and helping in the vision of Digital India. Moreover, multi languages being used will facilitate people being made aware of the several languages. The messages can be sent via text or via voice. This helps the people who have hearing troubles and the visually challenged people respectively. Time taken to use the system will be very less because all the required data can be acquired from the cloud quite easily. Most people have smart phones or tablets can be given for this purpose so implementation also is not a problem.