

# Navigational tool based on Android system in hospital

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**Abstract:** A direction framework that can be utilized for restorative examination in healing centers moves toward becoming to pull in consideration. As a position estimation innovation for indoor direction, a Wi-Fi situating framework has been contemplated. Be that as it may, Wi-Fi radio waves are not accessible in the medical centers since that influence operations of restorative hardware. In this paper, propose another real-time indoor direction framework utilizing Personal Handy-telephone System (PHS) and Android gadget for guests in hospital. The proposed framework uses a mix of Received Signal Strength Indication (RSSI) of PHS and Android gadget so as to gauge a client's indoor position without influencing operation of restorative gear. Through the test assessment, we have cleared up that the proposed framework has effectively guided subjects to the goals.

**Keywords:** Personal Phone handy system, Android and Indoor positioning system.

## I. INTRODUCTION

In a substantial multi specialty hospitals comprising of numerous restorative divisions, it is troublesome for guests to achieve their goals easily. Specifically, if there should be an occurrence of a restorative examination, guests regularly get lost since they ought to visit numerous medicinal divisions that are separated from each other. This causes a difficult issue especially for elderly individuals. To take care of this issue, a direction framework that can be utilized as a part of healing centers is drawing in consideration. In the direction framework, indoor position estimation is a standout amongst the most critical advances.

As the indoor situating innovation, Dead Reckoning has been generally contemplated. In the Dead Reckoning, a client's development is assessed by breaking down information acquired from different sensors (e.g., speeding up, spinner, and so forth.). Particularly, as of late, Android telephones turn into the best applicant of the detecting gadget since they are outfitted with a wide assortment of sensors. Besides, as an indoor position estimation innovation, a remote situating framework utilizing Wi-Fi has been examined. In any case, Wi-Fi get to focuses are not accessible in the doctor's facilities in light of the fact that 2.4GHz radio waves influence operations of therapeutic gear. Then again, an indoor Personal Handy-telephone System (PHS) is generally utilized for developing official phone in the healing centers. This is on the grounds that a PHS gadget does not utilize the 2.4GHz Industry-Science-Medical (ISM) radio groups and its most extreme transmission power is much lower than a wireless. Along these lines, this paper proposes another real-time direction framework for healing facilities utilizing a PHS and an Android gadget.

A user-friendly interface on the Android is also proposed, which can be easily understood even for elderly people. Furthermore, the effectiveness of the proposed system is evaluated through route guidance experiments.

## II. RELATED WORKS AND OBJECTIVES OF THIS STUDY

### 1. Issue of Guidance in Hospital:

Populace is expanding step by step and their medicinal services turns into a basic social cost. Medicinal examination at an early stage is imperative to distinguish a sign of maladies, henceforth will diminish medicinal cost for a short time later surgical operation, hospitalization, and so forth. Then again, there are numerous investigation things more than 10 in the medicinal examination and the review things are relied upon to increment assist with progress in therapeutic innovation.



**Fig.2.1 Existing Guidance system in hospital**

As appeared in the figure 2.1, the hospital comprises of numerous medicinal divisions and examinees ought to visit a great deal of examination rooms (e.g., C.T. scan, MRI, endoscopy, and so forth.) that are separated from each other. Hence, course of restorative examination is convoluted and direction in a healing center is a vital issue. In any case, mechanized direction which can lead guests to an suitable place at a proper time has not been built up yet in spite of the fact that IT is used for different exercises (e.g., Electronic Health Record) in medical centre.

## 2. Existing Studies

The position estimation framework utilizing a Global Positioning System (GPS) has progressed toward becoming accessible with a far reaching of cell phones furnished with GPS. In any case, the GPS can't be utilized as a part of indoor condition since GPS signs are hindered by dividers or roofs.

As indoor situating advancements, techniques utilizing radio waves transmitted from different transmitters have been looked into and created. In these frameworks, flag quality of radio waves of Wi-Fi is utilized. Nonetheless, these radio waves utilize the Industrial Scientific and Medical (ISM) groups, which may meddle with therapeutic hardware, and consequently should not be utilized as a part of clinics. Then again, PHS can be utilized for official phone in the doctor's facility on the grounds that the effect on medicinal hardware is little.

## 3. Objectives

Considering these circumstances, the current work proposes a direction framework which uses a mix of RSSI of PHS and Android gadgets. In this review, the point of review is to build up a direction framework on an Android gadget including savvy client interface which can be utilized by individuals.

## III. IMPLEMENTATION PLATFORM

### Hardware requirements

PIC16f877a microcontroller

Android cell phone

Bluetooth module

Voice playback kit APR33A3

### Software requirement

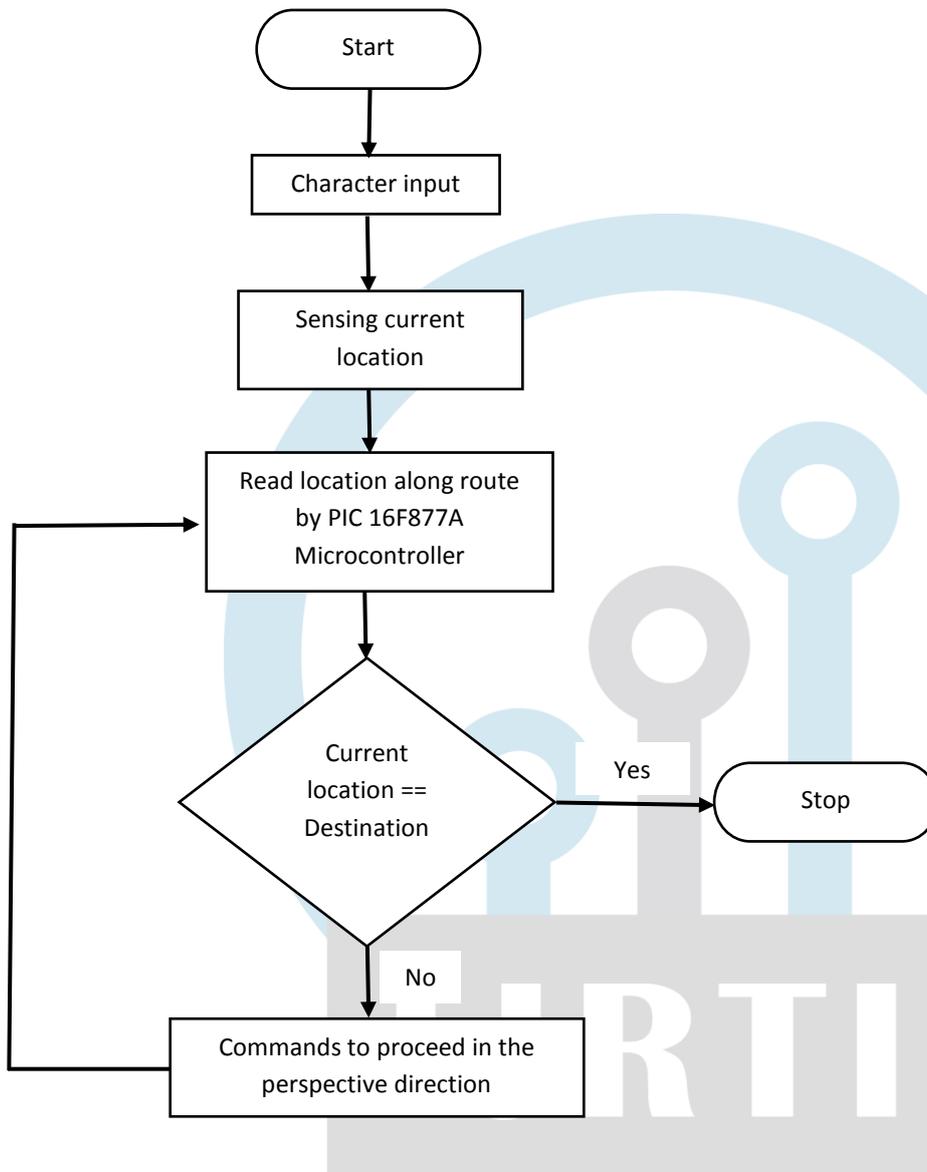
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#### IV. METHODOLOGY

The following flowchart, block diagram and Implementation explain the overall proposed system.

##### 1. Flowchart

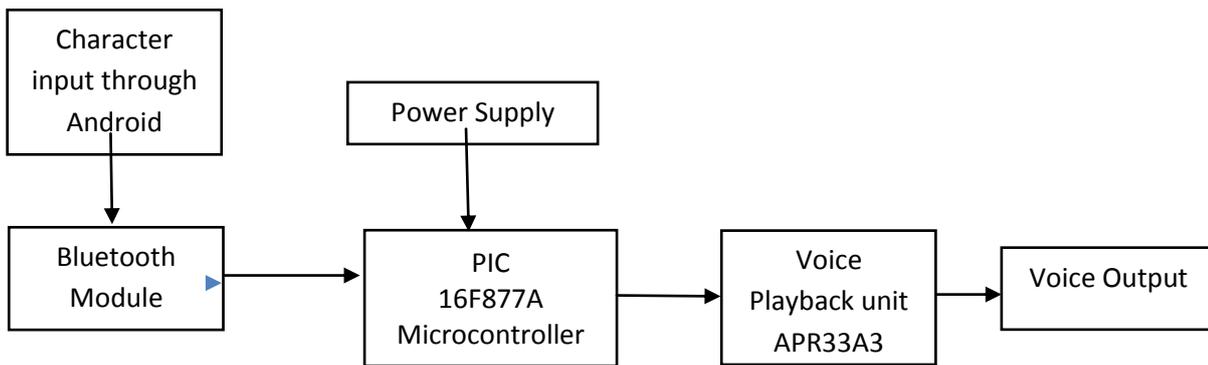


**Fig.4.1 Flowchart of Proposed Guidance system in hospital**

Figure 4.1 explains guidance system in hospital. Different directions possible are straight, right, left, move up and down. In achieving the task the controller is loaded with the program. First make sure Bluetooth module is paired with Android cell phone. Set the password for pairing Bluetooth and android. Destination is given as character input in android then the current location is sensed by transmitter. Microcontroller read location along route. If current location is equal to destination, It gives output as stop. If not commands to proceed in the perspective directions. Then click on the disconnect icon to disconnect the paired Bluetooth module.

##### 2. Block diagram

In this project pic microcontroller and Bluetooth module are communicating over UART 9600bps. The module comes and works on 5V power supply. In this profile the data send and receive to module directly comes on the RX pin of microcontroller. It becomes really easy to make device Bluetooth compatible. HC-05 has only 4 pins: 5V, GND, TX and RX. The 5V pin and the GND pin are used for power and the TX and RX pin implement a serial interface. The TX pin is used by the module to send information and the RX pin is used to receive information. Input to the module is character is set through android cellphone. This project makes use of microcontroller circuit to create destination and displayed the output through the speaker. The figure 4.1 explains the methodology of indoor guidance system in hospital.



**Fig.4.2 Block diagram of Proposed system**

### 3. Work implementation

By using hardware set up is done, Developed navigation system in the hospital with the help of Personal phone handy system and android cell phone. The PHS operate by using Bluetooth and voice playback unit for navigation which is operating by Android cell phone.



**Fig.4.3 Implementation of navigation system in hospital**

### V. ADVANTAGES

The advantages of current work are listed below

1. It is very quick navigation without Human intervention.
2. The system gives accurate route guidance system.
3. The system has less complexity.

### VI. CONCLUSION

By using Personal Handy Phone system and Android cell phone, Individual can easily locate their destination inside the hospital without human intervention. As the system uses smart phone, so that accuracy is increased.

### VII. FUTURE SCOPE

Later on study is to build up a dynamic estimation technique for client's walk for enhancing the direction achievement rate with less error.

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