

# Hospital 360

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**Abstract** — Nowadays Computer graphics are widely used in many applications. But still the users need some change in experiencing the real world objects. Hence the developers of application have combined the concept of Virtual reality with the real world which was enhanced with computer graphics. This paper presents about an android application which is developed with the idea of AUGMENTED REALITY. This application supports the users to identify the hospitals nearby within a Specific distance. When the user opens the application, the phone is swiped in all the 360 degree direction. It provides the global location of the hospital and provides a three dimensional view of the hospital when the phone is placed at that direction. As the phone is turned the new direction is detected and the hospitals in that direction is shown. This app is not present in the current system and provides more of human interface and tends to be more user friendly.

**Keywords-** *Augmented reality, Virtual Reality, global location, mark less-based, human interface, user friendly.*

## I. INTRODUCTION

There are a number of services that provides detailed information about the geographical locations in and around the world that assist the users to reach their destiny properly. One such application is the Google Maps which provides the travel route to all the users despite their location across the globe. This system uses the global positioning system (GPS) to facilitate all the users who are in search of their routes to their destination. The disadvantage of this system is that when a user searches for a hospital, all the nearby hospitals in all the directions are shown. To overcome this problem, an android application is developed using the concept of Augmented Reality, which is more user friendly. The hospitals in one particular direction in which the user tilts his phone is shown in three dimension. In case the user turns some other direction, then the hospitals within a range in that direction is shown. As the user moves towards or away from the point, the app changes its values accordingly.

This application has got a wide range of goals towards the user. It aims more on human interfacing. The present system of Google Maps provides lots of information such as distance, time to reach destination, traffic, alternative routes and direction to reach a specific destination. But when a nearby hospital is searched without specifying any specific name, the system shows all the nearby hospitals in all the 8 directions. Thus this application is more users friendly as it identifies the hospitals only in a specific direction and guides towards it. Further the application can be developed to show the specializations in the hospital which enables the user to select the hospital or not prior to reaching the point. This system enables more convenience to the tourists where language is needed no more to locate an appropriate hospital.

## A. Augmented reality

The term Augmented Reality (AR) is used to describe a combination of technologies that enable real-time mixing of computer generated content with live video display. The term augmented reality was first coined by researcher Tom Caudell, at Boeing in 1990. The origin of the word augmented is augment, which means to add something. In the case of augmented reality (also called AR), graphics, sounds, and touch feedback are added into our natural world. Unlike virtual reality, which requires you to inhabit an entirely virtual environment, augmented reality uses your existing natural environment and simply overlays virtual information on top of it. As both virtual and real worlds harmoniously coexist, users of augmented reality experience a new and improved world where virtual information is used as a tool to provide assistance in everyday activities.

There are four types of Augmented Reality.

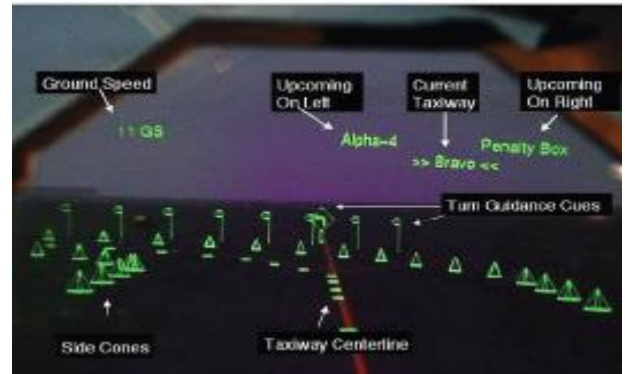
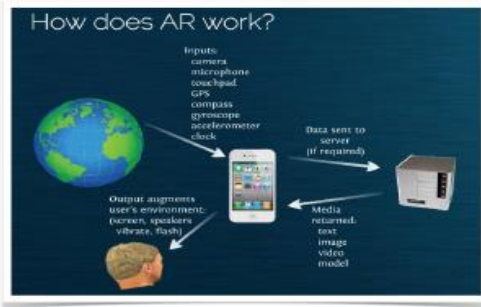
- Marker Based Augmented Reality
- Marker less Augmented Reality
- Projection Based Augmented Reality
- Superimposition Based Augmented Reality

What we are using in HOSPITAL 360 is Marker less Augmented Reality which uses a GPS, digital compass, velocity meter, or accelerometer which is embedded in the device to provide data based on your location. A strong force behind marker less augmented reality technology is the wide availability of smartphones and location detection features they provide. It is most commonly used for mapping directions, finding nearby locations.



## B. Working of ar:

- This is how actually AR works
- Pick a real world scene
- Add virtual object in it
- Delete real world object
- Not virtual reality since environmental reality



C. Applications:

AR is trending now a days and I see AR as a future world. AR has several applications and some of the most interesting applications of AR are in the following fields

D. In education:



E. In entertainment:



F. In medicine:



G. In military:

The Heads-Up Display (HUD) is the typical example of augmented reality when it comes to military applications of the technology. A transparent display is positioned directly in the fighter pilot's view. Data typically displayed to the pilot includes altitude, airspeed and the horizon line in addition to other critical data. The term "heads-up" name applies because the pilot doesn't have to look down at the aircraft's instrumentation to get the data he needs.

H. In tourism:



I. Ar in hospital 360

Augmented reality is used in hospital 360 to bring in high user interface. The procedure is

- Initially the device is placed in the necessary direction.
- the world coordinates are captured by the device.
- it is converted to system coordinates.
- then the details are retrieved through network.

J. Methodology

The application works based on the concept of AUGMENTED REALITY. It includes a camera, GPS and a network connection. Initially when the application is opened, the camera is opened by default and the GPS is switched on. In case the network connection is lost the system requests to enable it. Thus as a result the location of the user is identified. Since the camera is opened the direction in which the user faces is captured. Once the direction is captured, the hospital in that particular direction for a given range is displayed. The global location i.e. the latitude and longitude of the hospital is displayed along with the 3D view of the hospital. When the user turns, the camera captures the direction and thus again the hospitals in that direction are displayed. The display changes as the user moves forward or backward or even changes his/her direction accordingly. Further this system can be developed to display various characteristics of the hospital so that the user can decide to choose or not before he reaches the destination. Since all these functions are done just by swiping the device, this system employs the concept of augmented reality to bridge the gap between user, the device and the surroundings. This system enables more convenience to the tourists where language is needed no more to locate an appropriate hospital.

**K. Hardware requirements**

The hardware components required for the system are

- Dual core 64 bit,
- 8GB of memory,
- 24GB internal storage.

**L. Software requirement**

The software components required for the system are

- Android SDK,
- Necessary coding language like Java, C, C++ and Xml for design.

**M. Working****II. OUTCOME**

The outcome of the application finally enables more interface between the user, the device and the surrounding environment. This is a new step towards a smart tourism and also a smart health care.

**III. SUMMARY**

Finally the application with the specified requirements and with the goals and perspective is successfully developed.

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