INDOOR NAVIGATION USING AUGMENTED REALITY

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Abstract: This project is to develop an integrated application based on visual positioning service (VPS) using augmented reality which is applicable on IOS applications. This can be deployed in any other IOS based applications and can be integrated like part of their applications. When the user access this part in the application, it enables the camera automatically and projects on to the environment in which it shows the real world to the user. And the application enable the user to choose the best path direction to reach the destination that which will be determined by the algorithms we used in our project .This application has no time limit, the reason behind not using time limit is, the user like to see the surroundings, textures and objects which are present inside a building. The application allows the user to start accessing the location at any initial point and ends at the final destination which has chosen by the user.

Keywords: Augmented Reality, Visual Positioning Service, Destination, AR Kit, Unity.

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1.   INTRODUCTION

Augmented reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information. Unity supports development of Augmented Reality for every major platform: for mobile, PC and web. AR opens up new ways for your devices, one of them is AR Kit which is Apple's software development kit that enables app developers to incorporate augmented reality into their apps and to be helpful with its Visual Positioning Service (VPS) which consists of inbuilt sensors that makes you to navigate without the use of any hardware devices throughout your day by letting you experience digital content in the same way you experience the world. It lets you search things visually, simply by pointing your camera at them. It can put answers right where your questions are by overlaying visual, immersive content on top of your real world.

The theme of the application is to navigate the users Indoor in large complexes, communities and etc. to reach their destination. It is an AR application which is developed by using unity and it not use any longitudinal or latitudinal points as it is based on the Wave points and colloidal points to recognize the objects, 2D or 3D planes and shapes while capturing the surrounding environment. Based on the recognition it navigates the path to the user.

2. DESIGN

Modules Description: System analysis uses various types of informationsystems to support many processors needed to carry out their business function. Each of these information systems has a particular purpose, andeach have a life of its own. This "life of its own "concept is called the System Development Life Cycle.

1.   Augmented-reality plane creation: In this module AR plane is created using AR Kit software development kit that was developed by Apple and consists of all the prefabs and sample scenes, background artifacts and imported into unity engine we can create our plane in order to co-ordinate the directions for navigation.

2.   Mapping: In this module, it maps the direction of 2D and 3D planes for the purpose of coordinating the surrounding environment.

3.   Scene creation: In this module, we are creating interfaces in   order to create a new in map where the input is recorded and get accessed by read map in which every map is stored in the form of input list.

4.   Camera access: In this camera is enabled by using the native camera tool kit to capture the 2D or 3D planes, shapes and objects.
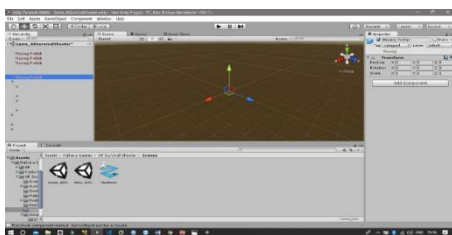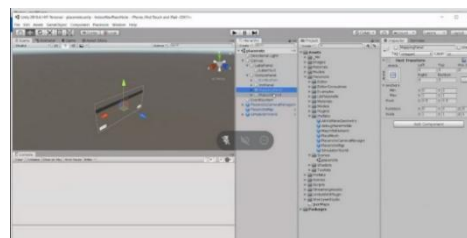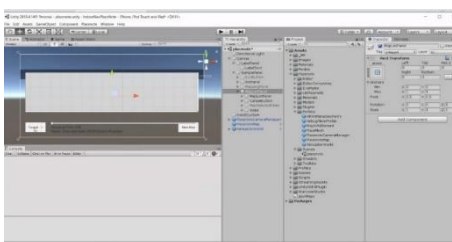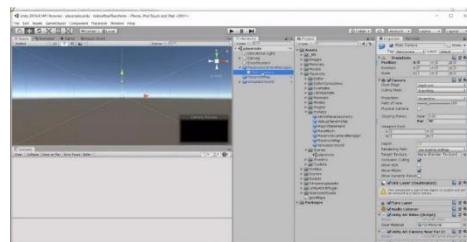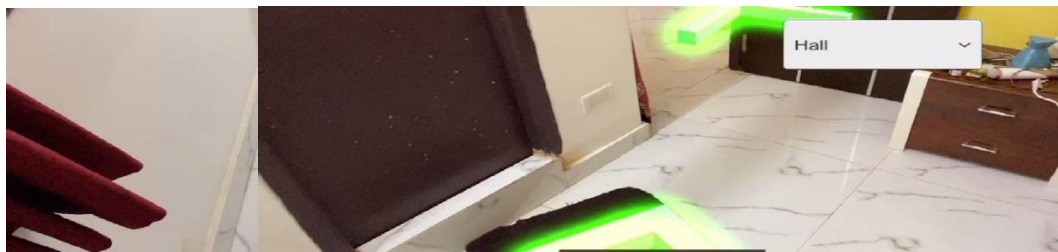

Fig.1.Plane Creation

Fig.2.Mapping.

Fig.3.Scene Creation.

Fig.4.Camera Access

3.   ANALYSIS

Being an Integrated Application it can be associated with any other IOS based application which will become a part of their software and can be accessed by multiple users will have a better experience in front of their camera within their own space.

4. RESULTS

The status of the application starts with creating map by recording the each and every destination points of an indoor helps the user by enabling best path to reach their destination while they read the map to get the input list of the indoor before navigating.

6 CONCLUSION

In conclusion, augmented reality is a futuristic step towards the digital age. With the advancement of the Internet of Things (IOT), the blend of both technologies could impact our lives on a daily basis. AR has amazing applications that can very well allowus to live our lives more productively, more safely, and more informatively. This paper has presented an initial effort at analyzing current AR games across various technologies used as well as game genres. Thetrend graphs show that modern AR games tend to make use of cheap and highly accessible equipment found on popular mobile consumer phones and laptops. They also show many avenues which are lacking in both research and commercial development. Hence researchers and game companiescan make use of the review in this paper to better focus their energies in terms of AR application this paper can be seen as simply an Initial and Final Points.

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