# Home Decoration System Using Augmented Reality

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***Abstract-****This article presents a application for interior decoration which uses new enhanced technology which is augmented reality. In augmented reality, we replace real life with virtual object. Suppose we are in a home and want to see how taj-mahal look-like, so will we use technology of augmented reality to make it happen and addition to it we can also see the surrounding of our self. As we know home decoration is major concern of most of people, by this product we can do it by our-self Application consists of many virtual object like sofa, chair and many house-holding materials and we will superimpose reality with computer generated information. This interface will show user how their home will look after adding furniture to it..*

## I. INTRODUCTION

Augmented Reality is used to enhance the world by merging computer generated information to the real world. Augmented reality is mix concept of virtual reality as well as reality which include surrounding. The applications of AR. are in field of education, internet of things as well as in entertainment. In this System user can try a virtual furniture before physically placing it. This process, will be help user to choose correct furniture easier without going for a shopping, the main application of this project is to develop an Application for different furniture item for home decoration, This will help user to do online Shopping from home and they can actually see how it will look after placing furniture in real life environment.

## II. LITERATURE REVIEW

1. Deepak Uplaonkar, Saurabh Saoji, Surbhi Paranjape,Nikhil Andhalkar, Rajni Chorge, Rohit Jainapur has proposed a technique augmented reality system for the home furniture layout based on fiducial marker detection. In "Virtual Furniture Application based on Augmented Reality" paper. They took furniture objects as a data set. The advantage was that it was easily understood and handle. But the only disadvantage was that it was only useful for single object.

2. Vaibhav Raut, Umesh Sanap, Tejas Holam, Pranav Dubey has proposed a technique augmented reality system for the home furniture on android phone based on planar object tracking. In "Furniture Layout AR Application Using Floor Plans Based on Planar" paper. It had time efficiency and also high scalability also flexible. But the object could be viewed only in 2D pose.

3. Raviraj Patkar, Pratap Singh, Swati Birje has proposed a technique augmented reality system for the home furniture objects like chair, flower pot, jug etc. on android OS based on marker detection and reorganization method. In "Marker Based Augmented Reality Using Android OS"paper. Devices used in this paper were cheaper in cost but the speed of detecting or recognizing the marker was slow.

4. Taiki Fuji, Yasue Mitsukura, Toshio Moriya has proposed a technique augmented reality system for home furniture object based on marker detection. In "Furniture Layout AR Application Using Home Plans Based on Planar"paper. It was very fast for detection and tracking of the marker. Also it was a combination of multiple objects. But it was more costly as it required HMD Goggle and it was only developed for 2D objects.

5. Mai Lee, Aaron Zarraya Kangrong Zhu has proposed a technique augmented reality system for the home furniture on android phone based on marker detection. In an Augmented Reality Application Previewing 3D Décor Changes" paper. It was combination of multiple objects and easily handled but storage space requirement was high and it had slow processing and transmission speed.

6. Mr. Raviraj S. Patkar Mr. S. Pratap Singh Ms. Swati V. Birje, "Marker Based Augmented Reality Using Android OS" This paper proposes a marker based augmented reality application using Android operating system which will help to combine virtual objects with the real environment facilitating various applications as mentioned in this paper. The main advantage is use of low cost devices as compared to the costly head mounted display devices. Secondly with the help of this project you need not buy product and then see how it will suit your environment. In future images of objects from various views can be fetched directly from vendor's websites; same could be modelled into a 3D objects and augmented. Also multiple objects will be augmented which is

currently a major challenge.

## III. PROPOSED SYSTEM

- we are going to develop an Application using Marker Detection, so user have to place the marker in room where user want to place Furniture item and scan it with the user's camera.
- Through the camera user will capture the image from live feed of room, then it will search for marker and, than it will select the object from the database and place it on the marker.
- Convert target image (marker) into gray scale.
- The proposed system is a marker based system and its architecture as shown in figure 1 contains following modules.
- Camera
- Image Capturing Module
- Image Processing Module
- Marker Tracking Module
- Rendering Module
- Display Screen

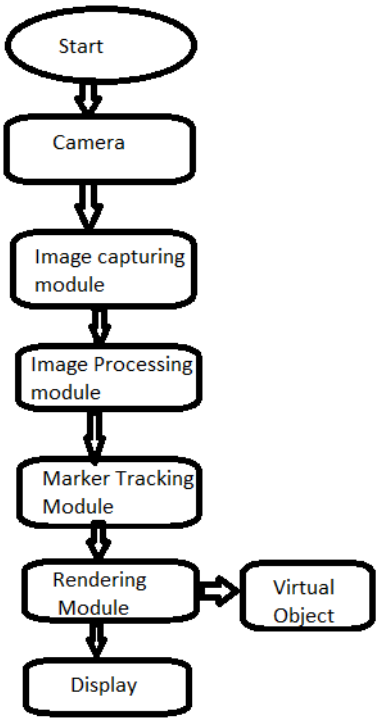


Figure 1

1. Initially input is taken by live camera. And this input is pass on to next level for analysis.
2. At image capturing module we capture our target image (marker) by given camera as seen figure2.
3. At image processing module we analyze our marker and detect it.
4. After detecting marker we have to render image with the virtual object which are sofa, lamp etc. as seen in figure 3and figure 4.
5. Last stage is to display the output on the given screen.

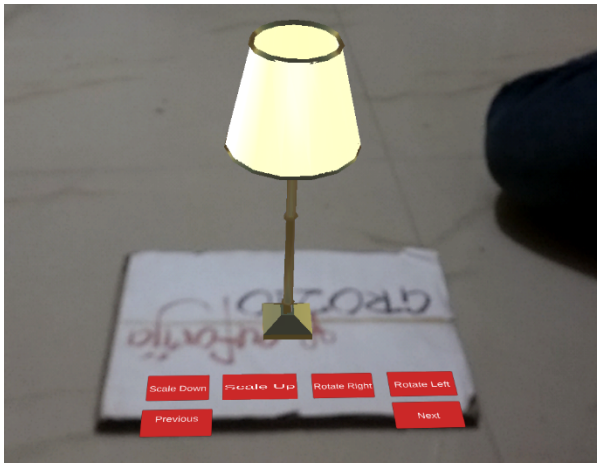


Fig.2 Marker

Fig.3 Display Screen

## IV. FUTURE SCOPE

Augmented Reality is used to enhance the world by merging computer generated information to the real world. The main scope of the project is to show the furniture's in a virtual object for better view. And to show how it will be after placing the furniture. Although this will result in increased performance and low memory consumption and increased reliability. This app can be further improved and extended for architecture, civil engineering, advertorial and other purposes. As we know many commercial sites like flipkart, amazon are selling product like furniture's so if we implement our project in this, it will help user to view which colours is perfect and what size is required etc.

## V. CONCLUSION

This paper proposed Home Decoration System using Augmented Reality, application using Android operating system which will help to combine virtual objects with the real environment facilitating various applications as mentioned in this paper. These system will help the customer to view the furniture object virtually in real environment object. Due to these system customer will come to know how his home structure would look after decorating their interior of the furniture object. These application system user to try multiple combination of object virtually without physical movement of furniture objects. These will help the buyer to determine how to setup furniture in home structure. These system would let the user to try multiple combination of object virtually without physical movement of furniture objects.

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