AR DEZINER APP

Prof. Bhagyashree Dharaskar[1], Pranav Ingole[2], Piyush Meshram[3],

Shreyash Niwant[4], Kharanshu Wanare[5]

Assistant Professor, Department of Computer Science and Engineering, Priyadarshini College of Engineering,

Nagpur, India[1]

Student, Department of Computer Science and Engineering, Priyadarshini College of Engineering, Nagpur, India[2,3,4,5,6]

Abstract: In the early days, if the user wanted to buy a piece of furniture without going to the store, it was possible, but not possible to check how the object actually looks in the structure of the apartment. Now, in our proposed system, it is possible for the user to buy the piece of furniture sitting at home without going to the stores. The main goal of "AR DEZINER" is to develop an Android application for virtual testing of various furniture using a mobile phone that supports AR camera. The app eliminates the human effort of physically visiting the furniture store, which is a very time-consuming activity. Also, it could be easier to use this technique when shopping online as an option for the user to try the furniture in their room that they want to buy and allow the user to visualize the space. what it will look like after furniture is placed on it. The user can try multiple combinations virtually without having to physically move the furniture. Our motivation here is to increase time efficiency and improve accessibility of furniture assembly by creating furniture augmented reality app. This system helps the customer see the object of the furniture. virtually in a real environment before purchasing the object. Thanks to this system, the customer knows what the structure of his house would look like after purchasing the furniture. This system would allow the user to try out multiple combinations of objects with virtually no physical movement of the furniture. These help the buyer determine how the furniture will fit into the structure of the home.

Keywords: Augmented Reality, Flutter, Android Studio, AR core

I. INTRODUCTION

Augmented reality is a technology that allows us to see objects in the physical world virtually, providing a composite view. Bring a variety of user experiences together. We will develop a system with augmented reality that will allow the user to try out virtual furniture. in the structure of the user's actual home before purchase. Furniture objects can be selected much more easily from this user. You don't have to go shopping and look for the great need of the user or use the measuring tape to find out whether the furniture would fit in the customer's room or not. The main goal of this project is to develop an application for various pieces of furniture in furniture stores practically without the use of real media, which is an incredibly exhausting and time-consuming activity. This will further help the user to test out the pieces of furniture in their room and to be able to see how it will look after the furniture is placed in it. The user can try out multiple furniture combinations virtually without physically moving the furniture. Our motivation here is to increase time efficiency and improve furniture accessibility by testing the manufacture of this design in augmented reality. Augmented Reality has been a hot topic in software development circles for a number of years, but is receiving renewed attention and attention with the launch of products like Google Glass. Augmented reality is a technology that uses computer vision-based recognition algorithms to augment sound, video, graphics, and other sensor-based inputs on real-world objects with your device's camera. It is a great way to provide real information and to present it interactively to make virtual elements part of the real world.

II. REVIEW OF LITERATURE

The studies show various approaches for augmented reality that has brought up development of various applications in the field of computer science. Research [1] shows it was very fast for detection and tracking of the marker and was combination of multiple objects. It required HMD Goggle and it was only developed for 2D objects that's why it was expensive. Research [2] shows data set of furniture object was used. It was easy to understood and handle. But was only useful for single object. Research [3] proposed the time efficiency and scalability were high and flexible. Main drawback was it can be only viewed in 2d pose. Research [4] proposed a technique based on marker detection and reorganization method. In this system devices used in this paper were cheaper in cost but the speed of detecting or recognizing the marker was slow. Research [5] The combination was of multiple objects but was slow in processing and transmission in speed and taking adequate storage space.

III. RESEARCH METHOD

The proposed module considers bookmark registration as the most critical area, as this is the basic function that provides users with an augmented reality experience. Without markers, AR objects are more likely to flicker and move on their own, or simply float and tilt into an odd position. and direction. Therefore, it is one of the first features to be developed before thinking about how AR objects can be modified in the application. It has been specified that the app will use a predefined marker and a custom marker, giving users more flexibility in choosing whether to print an A4 paper or just take a photo of their RM1 note. the marker around with them. On the other hand, to further improve the user experience, advanced tracking is also used on devices capable of providing more processing power. Extended tracking is the ability to easily track the marker's surroundings combined with sensors on the phone. and attempts to determine the estimated position of the marker when it is off-screen. In this project, a predefined bookmark was created using the technologies available online. The easiest way to create a bookmark is to generate a QR code, which can contain your company's domain name or other information. This is because a QR code is unique in its pattern and can provide the app with a clear method of distinguishing the front, back, left, and right of the image.

ARCore:
a. Motion Tracking: Allows the phone to understand your current position in relation to the real world. b. Environment detection: Allows the phone to detect the size and position of all types of surfaces, e.g., B. vertical, horizontal and angle. C. Light Estimation: Allows the phone to detect the ambient light conditions. As the user moves their phone around in the real world, ARCore can understand their surroundings and digitally emulate the real world in which to place objects. Motion tracking helps ARCore identify features that allow it to track your location relative to the real world environment. ARCore is now available for Java (Android), Unity (iOS and Android), Unreal Engine, iOS. Here we use Java and Android Studio. Sceneform: Sceneform provides features such as: a. An automatic compatibility check for ARCore-enabled phones. b. Checking permissions of the camera. CA graphical scenario API to abstract all complexities. d.An asset manipulation plugin.

IV. FUTURE SCOPE

There are still many possibilities that can be realized with this technology and therefore it is very suitable for future exploration of new functions. For example, creating moving AR objects that can then provide even more information. to the user. Also an interesting idea is to create a 3D target that gives length, width and height and allows AR objects to move behind or up and down. In addition, this application can also be used in fields other than business, such as for educational purposes, where users can interact with graphics from textbooks, which can be very useful for students who are more confident in their studies. In addition, the labor sector may finally have a better guide on how to maintain a machine, device or even software. They would not have to switch between manuals at times and return to their operations frequently, and they could also see a clearer and more concise picture of what to do and how to take recommended actions.

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