



# Virtual Trial Room

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**Abstract**—With the development of technology, online shopping, known as e-shopping, has grown exponentially worldwide today. Advances in electronic shopping have led to a revolution in shopping that allows consumers to shop anytime, anywhere. Although e-shopping has many advantages, its main disadvantage is that it is difficult for online shoppers to try on products, especially clothes. Therefore, the virtual room using AR is proposed to be created as a web application that allows buyers to see how the shirt will look and whether it will suit their body without putting the shirt on. This is done to improve the market for buyers and allow them to try on clothes for size, fit or style. In this development, AR, human body detection and motion tracking are combined, the user's body movements are tracked through the camera, and clothing patterns are adapted to the user's body. Use predictive modeling to identify, analyze and track the position of the skeleton. In addition, Body measurements and garments are analyzed and interpreted to help virtual garments fit the body perfectly [1]. Retailers are looking for better options to improve their e-commerce business amid the spread of the COVID-19 virus. This project will help them achieve their best work with the help of the internet and its extensive resources. This web-based application helps users try on clothes online while sitting at home [3]

**Keywords**—Human body detection, AR, skeleton-joint position, virtually analyzed.

## 1. Introduction

In modern life, people prefer to use to purchase items, and one of them is clothes. However, one of disadvantages of online clothes shopping is that it cannot provide a physical try-on. Thus, one does not know how much chosen clothes is fitted into one's body in size, style, color etc. Although they work very well, their performance is poor because they require 3D clothing models that take a lot of time to create. It has attracted the research interest of many people and emerged as a viable alternative to virtual risk. You need to be in front of the camera. With the help of algorithms, the camera scans the

human body from the environment. The webcam and monitor connected to the device's processor present the customer with a virtual clothing list. The webcam scans the scene and displays the video stream in the window. A list of the clothes the user must wear is also displayed on the monitor. When the user selects a location, an article of clothing is selected and the user is placed.

Virtual trial rooms use augmented reality (AR) and artificial intelligence (AI) technologies. AR technology can map a virtual version of a product to the customer's body or on top of a realistic 3D avatar. AI uses algorithms and machine learning

to take body measurements and create full-body 3D models of the shopper standing in front of the camera. The fact that many existing systems have different understandings of reality makes it possible to use the techniques in court. Many e-commerce sites such as Lenskart, Abof, Snapchat have developed VR-based applications. One idea is a virtual testing room that shows users the clothes they want. However, no application currently offers dynamic 3D images. In order to improve on this area we are proposing a new system called the "Virtual Trial Room". In the proposed system, we will describe a simple and efficient Trial Room with virtual usage. This application helps the user to visualize his/her own attire without actually wearing it. Initially the user needs to face the camera which focuses the user image and fit various costumes to it and displays. Therefore, there is an increasing demand to develop virtual trial room to simulate the visualization of dressing.

## 2. PROBLEM STATEMENT

In modern life, people prefer to use to purchase items, and one of them is clothes that reason we choose online shopping. However, one of disadvantages of online clothes shopping is that it cannot provide a physical try-on. Thus, one does not know how much chosen clothes is fitted into one's body in size, style, color etc. Thus project aims to overcome the technical challenges associated with implementing an AR-based Virtual Trial Room application, ultimately enhancing the online shopping experience by offering users a convenient and engaging way to explore and try on clothing items virtually.

## 3. SYSTEM ANALYSIS

Before creating a solution, we need to know what the current method is, the advantages and

disadvantages of the fields used and what the result is after the change or what we can do next to solve it. Ask a question better way all of this can be understood through a process called analysis. This process will help to understand what is being done inside and outside the system by understanding how we can add all the changes that we can integrate to make the system better and easy to use. This leads to reduced costs and helps to create suitable solutions and best results.

## 4. EXISTING SYSTEM

In the current system, to buy clothes, we will first try them on, then we will choose them, the size will be revealed and we will not feel comfortable. All of us I was satisfied with the product I tried. Lenskart is now experimenting with glasses and goggles using augmented reality. For other fields such as the fashion industry, consensus must be reached as everyone has differences and a lot of effort must be made to overcome this.

## 5. REQUIREMENTS

Requirements can be logical understanding whereas software requirements gives us understanding of the code, software to be used and below are the detail requirements for this proposed project .

- Processor : Intel i3, Ryzen 5
- RAM : 8GB / 16GB / 32GB
- Input Devices : Keyboard, Mouse
- Operating System : Windows 11
- Programming language : .Net ,C Sharp
- Tools and frameworks : vs code , Heide SQL
- Backend : Python

## 6. SYSTEM ARCHITECTURE

The architecture of this virtual trial room consists of a user, web camera, web page and output screen. The process starts with the user uses the web camera. These sensors identify and capture the points that the image is masked with the cloth frame that is sent to the web page and then the output is shown in on the output screen that way user can try cloths virtually.

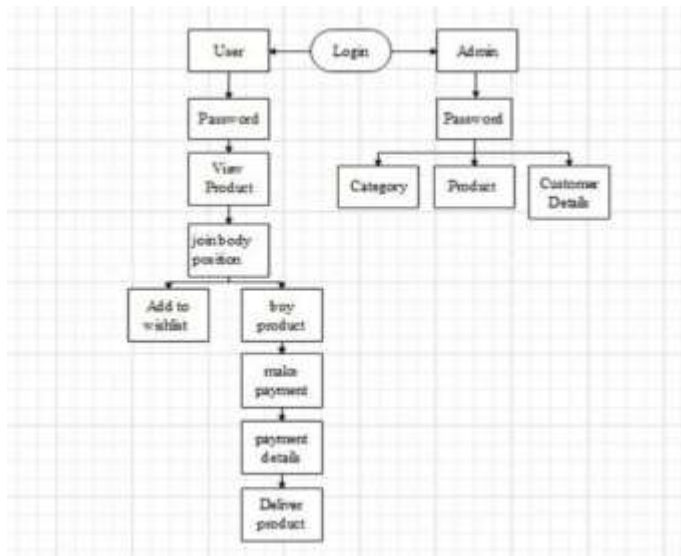


Figure 1. System Architecture of Virtual Trial Room.

**1 User Login / Admin Login :** User will first go to sign in fragment if he/she has not created profile then user will go to sign up In Or Sign Up user will have to enter username, email and password. After entering this user will have to click on that link to get verified after authentication user's profile will get created. User can sign in into the account now.

**2 Product Details:** In product details we have some category option , product details.

Product detail page (PDP) is a web page on an e-Commerce site that presents the description of a specific product in view. The details displayed often include size, color, price, shipping information, reviews, and other relevant information customers may want to know before making a purchase. Also this help to user for think of questions a customer might ask. always include the details: dimensions, size, materials, etc.

**3 Virtually Trial:** You should feel just as confident shopping for clothes online. So today we're introducing two new features that bring this trial room experience to you: Virtual try-on for apparel uses generative AI to show you clothes on a wide selection of real models, while new filters help you find exactly what you're looking for.

**4 Add To Wishlist :** After the checking the product if customer like that product but don't think about purchasing now then customer also wishlist or add to card that product. It helps to user it purchase after when they want.

**5 Deliver Product :** In this activity customer can buy the product .If user want to buy product the there is option of buy a product or add to cart .After that customer make a payment there is customers information.Then customer fill their payment details and confirm their order .After all customer get SMS of confirmation .Then product is delivered .

## 7. RESULTS

### 7.1. Admin Side Page

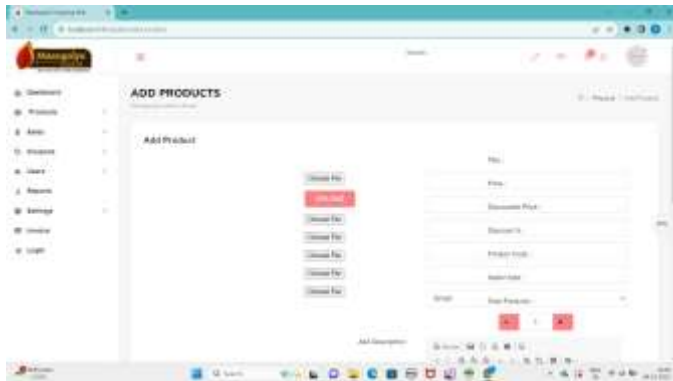


Figure 2. Add Product page

In this page admin can upload the product and their price and discount and size of the product also write description. This page serves as a crucial component for enabling users to upload clothing items to the system's database .

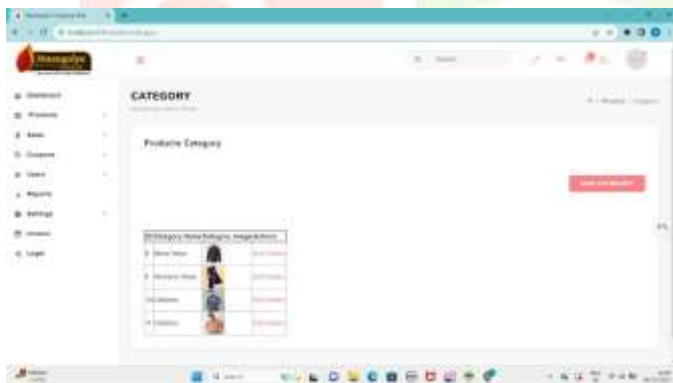


Figure 3. Category page

This category page this is also handled by admin page. we can see here category of clothes like Men and women as a central hub for users to explore and browse various clothing options available in each category .

### 7.2. User Side Page



Figure 4. Dashbord of user side

It is a Dashboard page. This page is handled admin. This page shows the monthly earning, product delivered messages and vendors and also graph of loss and profit

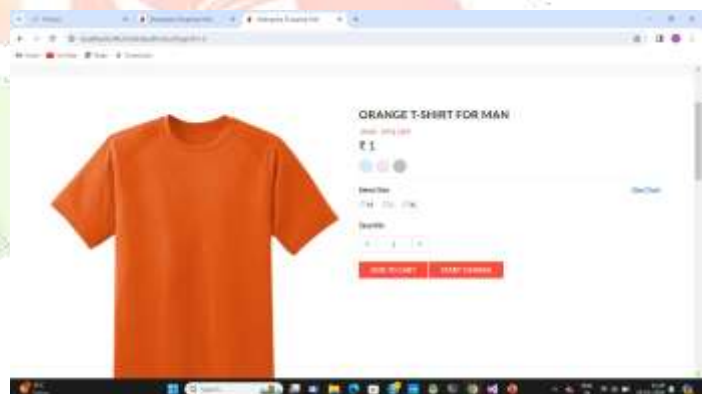


Figure 5. Add to cart page

This is add to cart page. In this page user can add the product in the wish list so user can see the product next time.





Figure 6. Cloths Try On body

In this Page selected cloths try on our body and it show how to fit cloths in our body.



Figure 7. Create account page

This is a create account page. In this page user can create their account when they want to purchase it

## 8. CONCLUSION AND FUTURE SCOPE

In this, Virtual trial rooms are a stepping stone towards revolutionizing the shopping industry. In this project how clothes can be mapped onto a customer's body effectively using the technologies. Customer can see the product from the home and if he or she likes that product then they can buy that product. Customer also can check the discount coupons.

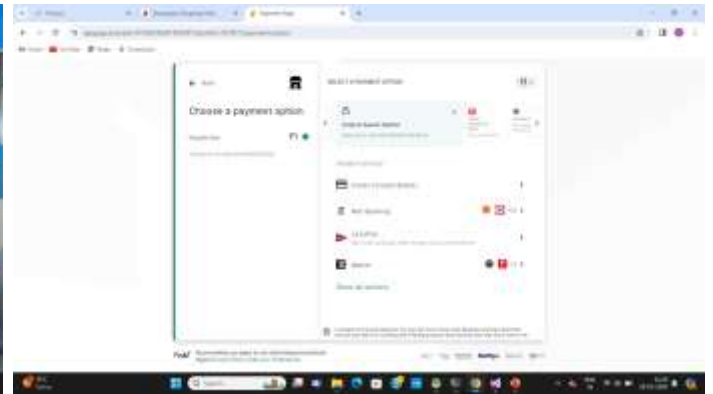


Figure 8. Payment page

This is payment page. In this page after the making the decision of purchasing product then user can purchase and we give the some option for payment .

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