**VIRTUAL DRESSING ROOM USING AUGMENTED REALITY (AR)**

**1. Introduction**

* Trying on clothes physically can be time-consuming and inconvenient.
* **Virtual Dressing Room** uses **Augmented Reality (AR)** to allow users to try on clothes digitally in real-time.
* The system includes three modules: **User, Retailer (Product Provider), and Admin.**

**2. Objectives**

* Provide a **real-time virtual try-on** experience using AR.
* Enable retailers to **upload and manage clothing items**.
* Allow users to visualize different outfits before purchasing.
* Implement an **Admin Dashboard** for user and retailer management.
* Improve customer experience with **AI-based recommendations**.

**3. Technologies Used**

* **Programming Languages:** Kotlin, Java (Android), Swift (iOS), Python (Backend)
* **Frameworks & APIs:** Google ARCore, Apple ARKit, OpenCV, Firebase
* **Machine Learning:** AI-based recommendation for outfit suggestions
* **Database:** Firebase Firestore, MySQL
* **Cloud Services:** AWS, Google Cloud

**4. Methodology**

1. **User Face & Body Detection:** Uses AR to track user movements.
2. **Clothing Overlay:** Digital clothes are mapped onto the user in real-time.
3. **Size & Fit Adjustment:** AI auto-adjusts outfits based on user measurements.
4. **Retailer Management:** Allows retailers to add new collections.
5. **User Interaction:** Users can rotate, zoom, and change outfits.
6. **Admin Supervision:** Monitors users, retailers, and system performance.

**5. Existing System**

**Disadvantages:**

* **Manual Try-On Required:** Customers must physically try clothes in stores.
* **Limited Online Shopping Experience:** Users rely on static images.
* **Size Issues:** Users struggle to find the right fit without trying on.
* **Time-Consuming Shopping:** In-store shopping requires long visits and waiting times.

**6. Proposed System**

**Advantages:**

* **Augmented Reality Try-On:** Users can try clothes virtually in real-time.
* **AI-Based Size Recommendation:** Ensures accurate fit based on body shape.
* **Retailer Integration:** Allows stores to list and showcase their products.
* **Enhanced User Experience:** Reduces shopping time and improves decision-making.

**7. System Modules**

**User Module (Mobile App)**

* Register/Login
* Try outfits using AR
* Save and share outfit previews
* Purchase clothes from the app
* Review and rate products

**Retailer Module (Web & Mobile App)**

* Register/Login
* Upload clothing items
* Manage stock and pricing
* View customer interactions

**Admin Module (Web Application)**

* Manage Users and Retailers
* Monitor sales and interactions
* Generate analytics and reports
* Handle customer feedback and support

**8. Feature Scope**

* **Real-time AR Fitting:** Users can see clothes on themselves instantly.
* **Gesture Control:** Allows users to swipe through outfit options easily.
* **Secure Payment Gateway:** Supports multiple payment methods.
* **Social Media Sharing:** Users can share outfit previews online.
* **Personalized Recommendations:** AI suggests clothing styles based on user preferences.
* **Multi-Brand Support:** Integrates multiple fashion brands into one platform.

**9. Conclusion**

* **Virtual Dressing Room** revolutionizes online shopping with **Augmented Reality**.
* Enhances user engagement by offering an **interactive and personalized** shopping experience.
* Improves decision-making by providing an accurate **virtual try-on solution**.

**Thank You!**