![Marwadi University Logo]	**Marwadi University** **Faculty of Technology** **Department of Information and Communication Technology**	
Subject: Capstone Project	**Project Definition and Scope - Intermediate Review**	
Project Definition	**Date: 24/09/2025**	**Enrolment No: 92200133001**

Team Member:
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Problem Statement:

Traditional tailoring lacks a digital solution for customers to visualize how different fabrics, colors, styles, and neck designs will look before stitching. This often leads to miscommunication, dissatisfaction, and alterations. The **Virtual Try-On** system aims to provide an interactive and realistic digital preview, helping tailors and customers make informed design choices efficiently.

Stakeholders:

Tailors: Improve the precision of designs and enhance customer satisfaction.
Customers: Experience a realistic preview of custom clothing before purchase.
Fashion Designers: Experiment with different materials and styles without physical samples

Objectives:
1. **Build V-try-on (Virtual Try On) Prototype**
   - Develop a prototype that allows users to upload their photos and try on different outfits (color, material, sleeve, and neck design).
   - Achieve at least 80% accuracy in clothing alignment with the user's body.
   - Use Python, Mediapipe, and AI models for pose detection and garment overlay.

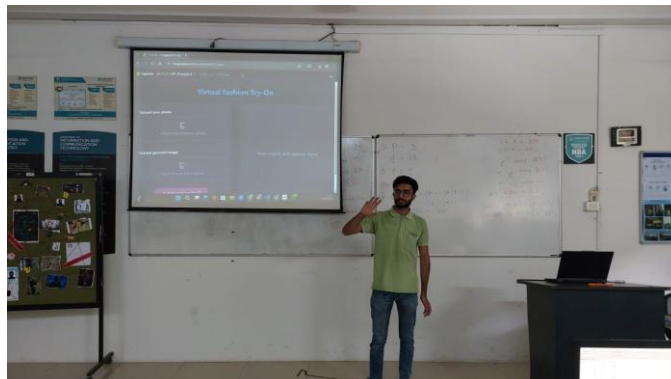2. **Implement digital measurement capture system**
   - Enable automated body measurement extraction from user-uploaded images.

3. **Create a web portal for admin and tailors**
   - Build a secure web portal where user upload it own photo and garment photo to perform try on.
   - Provides a professional workflow between customers and tailors.

4. **Evaluate user satisfaction and accuracy**
   - Conduct usability testing with 50+ participants.
   - Aim for 70%+ positive feedback on ease of use and accuracy.
   - Gather surveys and feedback after demo sessions.

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Relevance to ICT Domain:

The **Virtual Try-On project** is strongly aligned with the ICT (Information and Communication Technology) domain, particularly in the areas of **Artificial Intelligence (AI), Machine Learning (ML), Computer Vision, and Web Development**.

1. **AI & ML:**
   The project uses AI/ML models such as **pose estimation (Mediapipe)** and **image segmentation (SAM)** to map clothing designs onto the human body.

2. **Computer Vision & Image Processing:**
   The solution applies computer vision techniques for **body measurement extraction, garment overlay, and color/style adjustments**.
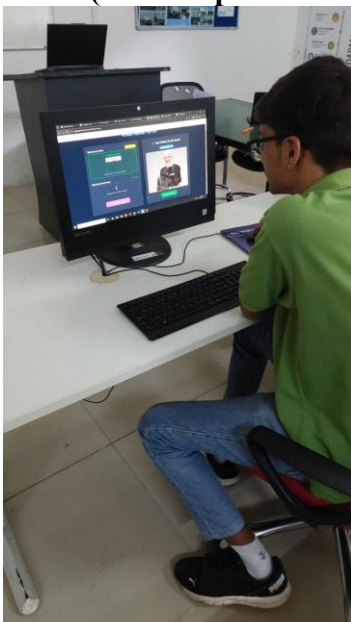
3. **Web Development:**
   The project integrates **Flask and AI models**, showcasing core ICT skills in full-stack development**.**

   It reflects ICT's focus on **end-to-end solutions** that combine front-end interfaces, back-end logic, and AI capabilities into a seamless user experience.

Target users / persons:
1. Retail Merchants
2. Tailors
3. Fashion Enthusiasts
4. End User (Outfit Buyers)

Evidence (selected peer-reviewed and industry sources)

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Challenges:

1. The virtual try-on currently works only for specific clothing colors and is limited to garments covering the shoulder or upper body region.

2. When users (especially females) have hair covering their shoulders, the system mistakenly detects it as part of the clothing, causing the hair color to change along with the garment.

Brief Literature Review:

- Image-based VTO systems focus mainly on swapping clothing in static images but struggle with realistic fabric draping and segmentation errors.
- 3D reconstruction methods provide higher realism but are computationally expensive.
- Consumer behavior studies show AR/VTO increases purchase intent and confidence but highlight adoption barriers like trust, accuracy, and usability.