UNIVERSITY OF PLYMOUTH

IN PARTNERSHIP WITH PLYMOUTH UNIVERSITY

| Module Code: PUSL2021 | Module Name: Computing Group Project |
|---|---|
| Coursework Title: Project Proposal | |
| Deadline Date: 25 October 2023 | Member of staff responsible for coursework: Mr. Pramudya Thilakaratne |
| Programme: Computing Group Project | |

Group Details:

Group B - 58

| PU Index Number | Name | Role |
|---|---|---|
| 10899225 | K.A.S.A.Kahandawa | Project and Group Leader |
| 10899366 | A.M.S.D.Senevirathne | Planning Leader |
| 10899381 | W.M.U.N. Wickramasinghe | Quality Leader |
| 10899202 | K.U.D.L.Darshana | Technical Leader |
| 10899377 | A.A.Uaraka | Testing and Maintenance Leader |
| 10898677 | B.A.Ranamuka | Programming Leader |

**We confirm that we have read and understood the Plymouth University regulations relating to Assessment Offences and that we are aware of the possible penalties for any breach of these regulations. We confirm that this is the independent work of the group.**

Use of translation software:

We have not used translation software.

**Overall mark _____% Assessors Initials _____ Date_____**

# PUSL2021 Computing Group Project

## Project Proposal

# BeYoutify

Group B – 58

| PU Index Number | Name | Degree Program |
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| 10899225 | K.A.S.A.Kahandawa | BSc (Hons)Computer Security |
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| 10899202 | K.U.D.L.Darshana | BSc (Hons)Computer Security |
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# Table of Contents

# Project Overview and Introduction

The Gender-Neutral Makeover Assistant is a game-changing breakthrough that provides an inclusive and gender-neutral virtual makeover experience. This individual software, powered by Python-based programming and powerful face landmark identification techniques, transforms how people view and experiment with their appearances. Unlike previous makeover programs, which confine users to established gender stereotypes, this assistance removes these constraints, allowing individuals to express themselves freely.

This project is built around a broad and vast database that includes a wide range of haircuts, brows, and beards. This comprehensive collection serves as a blank canvas for users to imagine and experiment with many makeover options customized to their own looks. The Gender-Neutral Makeover Assistant provides a secure and friendly virtual environment by eliminating gender preconceptions, encouraging users to experiment with diverse styles, and unleashing their creativity.

This software's foundation is more than just visual change; it celebrates self-expression and identity. This assistant reimagines traditional beauty and salon experiences in a world where beauty and self-expression are continuously growing. Traditional makeover tools frequently limit creative exploration due to their adherence to gender standards, suffocating user originality. The Gender-Neutral Makeover Assistant, on the other hand, bridges that gap, allowing people to express their distinct identities openly.

This software allows users to confidently experiment with a wide range of makeover possibilities, ranging from hairstyles to eyebrows and beards, by seamlessly merging Python programming and powerful facial point detection technologies. It is a symbol of inclusivity, encouraging users to embrace their unique characteristics. Our software features a large range of looks influenced by many cultures and trends, ensuring that every user finds a style that fits their personality.

This project is more than simply a makeover; it is a voyage of self-discovery and empowerment. The Gender-Neutral Makeover Assistant is created to meet unique needs, whether you are an individual interested in experimenting with different appearances or a salon client ready to try new services. Imagine a world where self-expression has no limits and beauty is defined by your own individuality. With an emphasis on inclusivity, creativity, and self-expression, this program encourages you to proudly accept your identity and explore the limitless possibilities of personal growth.

## Objectives of the project

- Ensure the experience is user-friendly: Create a natural, appealing, and easily navigable user interface to allow people to easily explore and experiment.

- Promote creative exploration: A wide selection of styles and a user interface that is simple will inspire people to mix and match, creating unique, personalized designs.

- Facial recognition technology: Use OpenCV to identify facial landmarks and provide customers with a preview of the results of their chosen makeovers.

- Style Tips: Make a recommendation system that offers alternate makeover options using an SQL database of the style set.

- Database management: Create and maintain an SQL database to store application data, user preferences, and style collections.

## Target Users

- People exploring self-expression: People of all genders who want to express their identities, try various looks and fashions, and become more confident.

- Clients and salon clients: people who intend to frequent salons and want to try various haircuts, eyebrow shapes and beards before deciding on salon services.

- Makeup artists and hairstylists are experts in the fashion and beauty industries who look for ideas, inspiration, and trends to add to their work.

- Individuals who do not identify precisely as men or women and who seek inclusive spaces that allow them to experiment with different perspectives regardless of their gender.

- Educational and cultural institutions that wish to foster variety and cultural awareness by educating students about various cultural fashions and aesthetic ideals include schools, universities, and cultural groups.

- Salons and other beauty professionals: By highlighting their latest trends and services on the app, salons, hairstylists, makeup artists, and other beauty professionals hope to showcase their talent and attract clients.

- Bloggers and social media influencers are people who use social media platforms and seek to produce interesting tips, reviews, and information on various makeover trends.

# Application Features and Description

1. User-Friendly Interface -
   A user-friendly and simple interface that allows for easy navigation.

2. Real-Time Makeover -
   Users can experiment with haircuts, brows, and beards in real time and receive immediate visual feedback.

3. Face Landmark Detection -
   Advanced face landmark identification driven by OpenCV is used to precisely map and apply makeovers based on users' unique facial characteristics.

4. Makeover Recommendations -
   Personalized makeover recommendations developed from a comprehensive in-house database, catering to a wide range of styles and tastes.

5. Customization -
   Users can mix and match makeover pieces to create a personalized appearance.

6. Real-time live camera -
   For a more immersive makeover experience, users are allowed to use a live camera.

7. Save and Share -
   The ability to store makeover outcomes and share them with friends or on social media.

8. User Feedback Integration -
   An opportunity for consumers to submit input on makeover options, so contributing to ongoing progress.

9. Offline Mode -
   Face Make Studio works offline, so you may use it even if you don't have an internet connection.

10. Secure Database -
    A well-maintained SQL database saves makeover styles and protects data.
11. Cross-Platform Compatibility - The application is available for Windows and macOS, making it accessible to a wide range of users.

12. Development Tools -
    Visual Studio Code is used for development, ensuring a reliable and feature-rich codebase.

13. UI/UX Design with Figma -
    Figma is used to develop and prototype the project's user interface and user experience for seamless, visually appealing interactions.

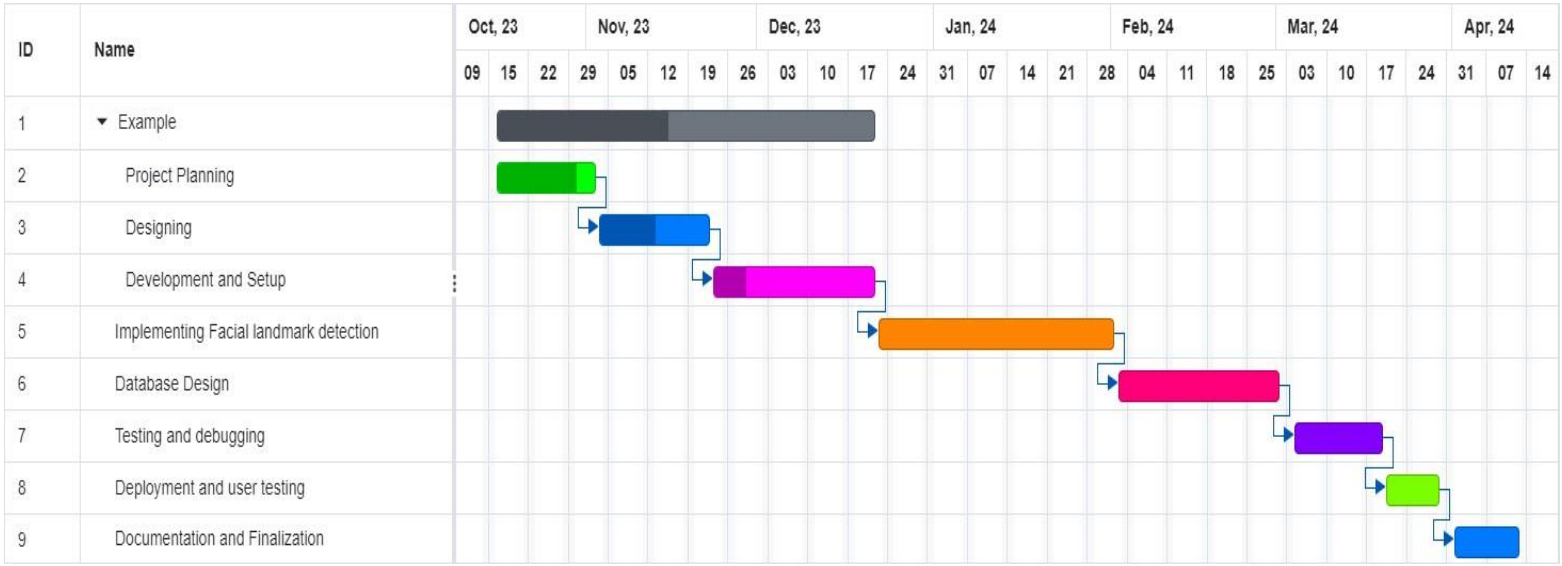
14. Privacy and Transparency -
    In all elements of the application's use and handling, data privacy and openness are prioritized.

15. Project Updates and Maintenance -
    Regular updates and maintenance are required to keep the application up-to-date and bug-free.

## Proposed Technologies and Tools

- Programming Language: Python
- Database: SQL for storing user preferences, style collections, and application data
- Image Processing: OpenCV for facial landmark detection and image manipulation
- Development Environment: Visual Studio Code
- Design Prototyping: Figma for user interface design
- Version Control: Git
- User Interface (UI) Design: Figma
- Cloud Services (Optional for Hosting and Storage): Amazon Web Services (AWS)/Google Cloud Platform (GCP)/Microsoft Azure

# Time Plan




| ID | Name | Start Date | End Date | Duration |
|---|---|---|---|---|
| 1 | Example | Oct 16, 2023 | Dec 21, 2023 | 49 days |
| 2 | Project Planning | Oct 16, 2023 | Nov 02, 2023 | 14 days |
| 3 | Designing | Nov 03, 2023 | Nov 22, 2023 | 14 days |
| 4 | Development and Setup | Nov 23, 2023 | Dec 21, 2023 | 21 days |
| 5 | Implementing Facial landmark detection | Dec 22, 2023 | Feb 01, 2024 | 30 days |
| 6 | Database Design | Feb 02, 2024 | Mar 01, 2024 | 21 days |
| 7 | Testing and debugging | Mar 04, 2024 | Mar 19, 2024 | 12 days |
| 8 | Deployment and user testing | Mar 20, 2024 | Mar 29, 2024 | 8 days |
| 9 | Documentation and Finalization | Apr 01, 2024 | Apr 12, 2024 | 10 days |

# References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