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# Version

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| --- | --- | --- | --- |
| **Date** | **Issue** | **Description** | **Author** |
| 17/08/2020 | 0.1 | Initial draft | Diego C. |
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# Project Dates

## Project Commencement Date

25th March 2020

## Project End Date

21st November 2020

# Project Justification

Hairdressing lecturers at North Metropolitan TAFE Balga are currently using mannequins to teach students. A more efficient way of handling this would be by using a mobile app that would allow users to upload pictures and visualise in real time how they would look like with a different hair style or hair colour.

This feature differs from filters used in social media apps such as Snapchat in the sense that it is more accurate and takes various face shapes and skin tones into account by using Machine Learning tools to improve the results.

This project would greatly aid clients in their classroom activities.

# Project Scope

* The design, development, tests and deployment processes of the Android app (with a cross-platform codebase) will be completed within their respective timeframes outlined in the next section
* The app is expected to work on Android Pie (9) and later.
* Performance will be considered to make the app as responsive as possible, considering the computationally intensive tasks to be executed by the back end.
* Users will be able to upload pictures and change their hair styles and hair colours based on their face shape selection
* Users will be able to save the results locally on their phones or upload them to the API to be retrieved later
* Users will be able to view the history of their changes for each picture uploaded

# Project Deliverables

|  |  |
| --- | --- |
| *Scope Document* | The document outlining the scope of the project including the initial plan and management of issues, changes and communication. |
| *Requirements Document* | The document outlining the requirements of the project including risks and functional requirements. |
| *Coding Standards Document* | The document outlining the coding standards to be adhered to during the development phase of the project(s). |
| *Design Wireframes / Concepts* | Visual concepts demonstrating ideas of layouts and visual elements of the project(s). |
| *Final Applications* | The final tested, evaluated and deployed applications. |

# Project Completion Criteria

## Project Success

In order to ensure that the application is successfully deployed, it will be thoroughly tested during and after the development stage. Such tests will be carried out in the form of unit tests, functional tests and profiling tests.

Feedback from the clients will be discussed by the development team during Scrum meetings and through communication channels, such as Slack. Based on such feedbacks, the project plan will adapt to eventual changes so that the requirements are closely followed.

# Project Objectives

As primary objective of this project, the mobile app to be developed needs to be user-friendly and intuitive. For that purpose, it also needs to be performant, so that loading screens will be minimal, and users should be able to make changes to pictures that they have uploaded as previous changes are processed by the API and loaded in the background.

As secondary objectives, security measures and maintainability are also important considerations that will be analysed by the development team to ensure that the app conforms with the expectations of the clients and can be easily adaptable if new features need to be introduced in the future.

## Constraints

The app was initially planned to be fully cross-platform, but since no one in the development team has a Mac it would be difficult or not possible to accomplish such goal. Because of that, it will be developed only for Android, but the code base will stay cross-platform so that other developers will be able to launch it on iOS in the future if required.

Because of holidays and mid-semester breaks, it is expected that the development process may slow down at times, but the schedule will be adapted to such circumstances and the deliverables will be completed on time, nonetheless.

More specifically, between 25/09 and 05/10, developers will be on a break between terms 3 and 4.

Also, it is expected that any costs incurred should be handled by North Metropolitan TAFE, such as cloud infrastructure (AWS).

Assumptions  
  
It is assumed that clients are aware that the development team comprises of students that will be busy working on other assignments, so the project plan will not change based on unreasonable requests or feedback.

Also, such feedback should be provided as soon as possible (preferably within a week of receiving a prototype or another scheduled deliverable) so that there will be no significant delays in the development process.

If no feedback is received from the clients within a reasonable time frame (I.e. one week), it will be assumed that they are satisfied with the work in progress and development will continue according to the current project plan and scheduled tasks.

# Milestones

* *Analysis/Design phase of the project will be completed on or prior to 7th September 2020*
* *Development/Build Phase of the project will be completed on or prior to 6th November 2020*
* *Testing Phase of the project will be completed on or prior to 14th November 2020*
* *Deployment Phase of the project will be completed on or prior to 21st November 2020*

As stated in in the Constraints section, it is expected that some slowdown in the development phase may occur due to holidays and mid-semester breaks. The schedule will be adjusted as needed, but the date of deployment phase should not change.

# Project Approach

* Analysis of the requirements
* Design, mock-ups and/or wireframes based on the style guide provided
* Additions to the database and ASP.NET Core API previously developed to take images into account
* Development of the Python API to process images uploaded by users
* Development of the Android app
* Tests
* Deployment of the project

# Primary Plans

As outlined in the previous section (Project Approach), developers will initially analyse the requirements of the project and research tools to aid in the implementation of the required features. They will also take some time (as planned in the schedule) to familiarise themselves with the libraries and frameworks (e.g. Fast API, Flutter) to be adopted in the development process. In this initial stage, mock-ups or wireframes that reflect the desired look and feel of the app will be built

The development phase will then begin, starting with the Python API to process images (by changing hair features according to user input) and communicate with the previously built ASP.NET Core API (which handles user accounts and directly interfaces with the database of the project).

Once significant part of the API is completed, development of the app will start. At this point, the back-end infrastructure of the project should be nearly finished so that developers will be able to focus on the required features of the app.

After the app is completed, all the components of the project will be tested (individually and interfacing with each other) to ensure reliability.

Having been tested and critical bugs having been fixed, the project should now be ready to be deployed. Developers will configure an AWS instance for this and ensure that all the components are working live.  
  
Scheduled Meetings

Team meetings will be held on Mondays, Thursdays and Fridays to check the progress of each team member on their assigned tasks and help each other as needed, as well as to review each other’s code.

Scrum meetings will be held on weeks 8 and 12 of classes to review tasks completed on the current sprint and discuss the next one. The specific dates will depend on the availability of the developers.

Client meetings or communication via email to be arranged at regular intervals (3-4 weeks) subject to availability of the client.

# Issue Management

Issues regarding the project plan and tasks assigned will be tracked through the weekly report document written by the development team. Tasks will be tracked through Asana.

Code issues will be tracked through the GitHub issues section of the project repository(ies), as well as the communication channels used by the development team, such as Slack.

Major issues that would require changing the project plan significantly will be discussed with the clients.

# Change Management

Changes to the project and training for the development team will be carried out as needed.

Since not everyone in the development team is familiar with the choices of technologies outlined in the project specification, upskilling will be needed for the following:

Flutter: mobile framework to be used to develop the Style Me app that uses Dart.

Fast API: server-side web framework that uses Python, which will handle image uploads and the business logic to process such images through Machine Learning libraries.

Cloud Firestore, S3: storage solutions for the images processed by the app.

GNU/Linux, Digital Ocean, AWS: production environment of the APIs consumed by the app.

Scope (impacted parties): development team.

* Plan: train developers who are not familiar with these technologies with a series of tutorials gathered by other developers over 5 days. Teach them the main concepts of these technologies, provide examples and sample code for relevant use cases for this project (e.g. image upload, sending API requests).
* Benefits: By the end of this upskilling period, developers who were previously not familiar with these technologies should feel comfortable writing code using them and satisfactorily complete their tasks.
* Milestones: After 3 days, developers should be able to create simple applications from scratch using these technologies. After 5 days, they should be able to contribute to our project and work on their assigned tasks.

It is possible that the collaboration tools currently used by the development team (Asana, GitHub, Trello) are not sufficient for organisational purposes.

For instance, the free tier of Asana does not allow using timelines, which could be important to more easily visualise schedules and milestones outlined by the scope document of this project.

In such cases, 1 day should be enough for the developers to either familiarise themselves with the additional features introduced by the “premium” tier of the collaboration tools used or to learn a new collaboration tool altogether.

# Communication Management

Face-to-face communication among team members will be held on Mondays, Thursdays and Fridays at class hours. Online communication will be held through Slack and Asana.

Communication with clients will be held through email and meetings in Blackboard Collaborate. Face-to-face communication with the client liaison may also be held at North Metropolitan TAFE.

# Stakeholders

## Clients – Hairdressing lecturers at North Metropolitan TAFE Balga

Jade Uhrbom

Dawn Hetherington

Delia Stanley

## Client liaison

Keith Critchett

Project Manager

Guido Verschoor

## Project Team – Diploma of Software Development students at North Metropolitan TAFE

Diego C.  
Gerardo G.

Stefan S.

# Sign Off