

School of Computing

CA326 Year 3 Project Proposal Form

SECTION A

Project Title Type tutor: a touch typing tool

Student 1 Name Shane Grouse ID Number 17502633

Student 2 Name Jack Liston ID Number 17497764

Student 3 Name _____ ID Number _____

(A third team member is exceptional and requires detailed justification.)

Staff Member Consulted Tomas Ward

Project Description (1-2 pages):

1. Description

We have decided that we are going to make a web application that is a training aid for teaching people to efficiently touch type. Touch typing is the most optimal form of typing where the user assigns certain columns of the keyboard to a particular finger. With a webcam, we will record the keyboard as the user types, tracking each of the specific fingers to ensure that they make each keystroke with the correct finger. Improving your typing speed and reducing typos is something that has an immediate effect on your productivity and being able to type quickly and accurately will allow you to focus more on solving the problem at hand.

We will use the data that we collect on users most common misclicks to personalize the experience for each individual user. We plan on emphasizing data visualization through tools like heat maps to ensure the user understands where their most common errors are occurring and we will generate a custom set of training tasks for them to complete to ensure they effectively tackle their most common errors. A users progress will be stored and connected to their account, meaning their progress will be accessible regardless of device.

The primary focus of the project is to implement a functional typing tool that correctly identifies which finger was used on a keystroke and visualizes this data at the end of a session. This will act as our inner scope and is the minimum bar we are setting ourselves. Our outer scope includes the generation of custom tasks, creating the account system and storing user data. We intend to implement these features, but this will depend on how long the inner scope development takes. The project will be written in python with the front end written in html/css and javascript. We will also be using flask, SQL and nginx for the back end of our project.

2. Division of Work

We will be splitting the project evenly as possible through each topic of the project. However, Jack will be putting more effort into hosting the web app, dealing with the front end and back end. Shane will work with the data sets that we collect to ensure that we give the most optimal learning experience to our users. We are both interesting in the visualization aspect but we think that as Shane will play more of a management role over the entire project Jack may end up dealing with the visual aspects slightly more but that is definitely subject to change.

3. Programming language(s)

- Python
- Html/CSS
- JavaScript
- SQL

4. Programming tool(s)

- OpenCV
- Flask
- Nginx

5. Learning Challenges

- Image recognition
- Data visualisation
- Hosting a web app
- Database management

6. Hardware / software platform.

- Laptops
- Linux
- Server space
- Database hosting software

7. Special hardware / software requirements

- Webcam