

National College of Ireland

Project Proposal

The Healthy Vegan

October 2020

BSc. (Honours) in Computing

Software Development

2020/2021

Joey Tatú

15015556

joey.tatu@student.ncirl.ie

Contents

[Annotations 2](#_Toc55467609)

[1. Objectives 2](#_Toc55467610)

[General 2](#_Toc55467611)

[Checking health 2](#_Toc55467612)

[Features 2](#_Toc55467613)

[Database 3](#_Toc55467614)

[Artificial Intelligence 3](#_Toc55467615)

[2. Background 3](#_Toc55467616)

[3. Technical Approach 4](#_Toc55467617)

[Profile 4](#_Toc55467618)

[Food product querying 4](#_Toc55467619)

[Health and fitness 4](#_Toc55467620)

[Checking sclera 4](#_Toc55467621)

[Version control and methodologies 4](#_Toc55467622)

[1.0 Special Resources Required 5](#_Toc55467623)

[2.0 Project Plan 5](#_Toc55467624)

[3.0 Technical Details 5](#_Toc55467625)

[4.0 Evaluation 5](#_Toc55467626)

# Annotations

|  |  |
| --- | --- |
| App | Application |
| Sclera | White part of eyes |
| User | End-user who is using the app |
| Intent | A user page in an Android app |

# Objectives

## General

The objective of this project is to create a vegan health app that is different and more useful than other vegan health apps out there. Anyone, whether vegan or not will be able to use it. The Project will be developed into an Android application. Its main, innovative feature is checking the user’s health by the whiteness of their eyes.

## Checking health

A user will be able to get their health checked by allowing the app to scan their eyes. The whiteness to yellowness of their sclera will determine their health. This will be done via the device’s camera or by the device’s images. If their sclera is more yellow, the more ill they may be. At no point is this app a replacement for any medical professionals or services. It will only be a guide. This will be communicated to the user before they use the app.

## Features

Apart from checking the user’s sclera, the user will be able to record what they are eating and whether it’s vegan, vegetarian and/or allergen friendly. This will be done via database. The user can either manually enter a product or scan the barcode of said product. This would be useful for when the user is grocery shopping: they can use the app to scan a product and get information on whether the item is OK for them to eat.

The user will also be able to record exercise and to set daily nutrition values, like other fitness and health apps.

## Database

The database will be implemented via Google Firebase Realtime Database. This is a No-SQL database that is generally used for Android apps.

The main tables in the database will be Users, Products and Ingredients. Users table will contain the user’s information, their daily diet intake, their goals and their health check. Products will contain product information such as ingredients. Nutritional and storage information will also be included. Ingredients will contain the origin of the ingredient and whether it’s suitable for vegans, vegetarians or allergen dietary needs.

## Artificial Intelligence

Artificial intelligence will be used to personalise and implement individualism into the app. (Tatú, 2019) This app with “learn” or monitor what aspects of the app a user is utilising. The app will promote these sections more, with notifications and the like. This will also assist in optimisation of the app, where only required intents will be loaded and will minimise the user’s Internet usage from within the app.

# Background

The idea for this Project began in late August 2020 where it was decided that an Android app was to be created. As a *de facto*, there are many fitness and health apps available. A health app was proposed for this project, but it was felt that this idea has been exhausted with little success for less popular apps.

The author decided to become vegan in mid-September after they saw that male chicks are destroyed shortly after birth. This is known as “chick culling”. (Wray, 2020) This was a last straw from them, and they decided to become vegan. While personally eliciting information for switching to a vegan diet, there was not that was provided is just recipes and very general information. The author felt at a loss on how to correctly transition to veganism.  
  
Being vegan, one asks themselves: “Can I eat this?” After trying a few vegan Android apps (described more in Research below), there was no solid information from these apps on whether a product is suitable for vegan. The main answer that was received was “Not sure”. But that was an impasse, as there was no connection to where information could be retrieved to get information on whether the food is Ok for the vegan diet. This project is to redesign vegan, health and fitness apps that are currently available and go above and beyond with improvements. This is how the idea of a vegan health app was discovered.   
  
The idea behind identifying the sclera was founded due to a family member of the author having issues with their gut. This caused the person’s sclera to become a tint of yellow and their skin to become sallow. The author thought that a health app with scanning the sclera would be a beneficial idea.

# Technical Approach

<Technical approach diagram>

These are the main aspects of the app:

## Profile

The user will be able to create an account on the app if they wish. If not, the name “Guest” with a generated number afterwards will be their username. This is so the user can use the app across any device they use. When the user is creating their account, they can set up their dietary needs, restrictions, and their health goals.

## Food product querying

One section of the app will be where the user can check a food product on whether it is suitable for their diet. The user can do a search for the product brand and name of scan the barcode using their device’s camera. The information retrieved will show the ingredients of the product and its nutritional information. Ingredients not suitable for the user’s diet will be highlighted. The user can tap on that ingredient to get more information on that ingredient, such as its origins.

## Health and fitness

Another part of the app will consider the user’s health and fitness. This will deal with the user’s daily exercise, calorie intake, weight goals. The user’s location will determine their nearest gym, so that the option of attending a gym is provided, to where they can obtain professional services if needed.

Checking sclera  
The checking on the user’s sclera will be completely optional. If the user wishes to use this, they can either upload a photo of their eyes or take a new photo with the device’s camera. The photo will be analysed for different shades of white and yellow around the user’s iris. The more yellow the sclera is, the potential of the user being ill is greater. To reiterate; the user will be informed that this app is not a replacement for medical advice.

## Version control and methodologies

Version control will be handed using a GitHub repository. Most of the version control will be synced using Git Bash. The version control will be located online at <https://github.com/JoeyTatu/Software_Project_2020_21>.  
  
A mix of Kanban and Scrum will be used for the methodologies.

# Special Resources Required

If applicable, e.g., books, hardware, etc.

# Project Plan

Gantt chart using Microsoft Project with details on implementation steps and timelines

# Technical Details

Implementation language and principal libraries

# Evaluation

Describe how you will evaluate the system with real technical data using system tests, integration tests etc. In addition, where possible describe how you will evaluate the system with an **end user. (be careful here re Ethics etc)**