BSc in Computing in Software Development

Year 4

Applied Project and Minor Dissertation

*<Covid-19 Contact tracing Application>*

*<G00343624> <Neil Byrne>*

Contents

[Introduction 3](#_Toc464117570)

[Reason for Choosing Project 3](#_Toc464117571)

[Technologies you plan to use 3](#_Toc464117572)

[Architecture 3](#_Toc464117573)

[Work Allocation 3](#_Toc464117574)

Student Number(s): G00343624

Student Name(s): Neil Byrne

Supervisor: Gerard Harrison

GitHub Link:

# Introduction

A mobile application containing the user’s contact details that through NFC can transfer the information to an NFC receiver. In the real world these receivers would be owned by a variety of businesses/institutions. This information is then hosted on a web server which can be viewed and manipulated by the business/institution. Each time the user uses the application (tap their phone on the NFC receiver) a geo tag will be used to keep a record on the app of where the user has been. The receiver will be connected to an ESP32 board that will use HTTP protocols to send the information to the web server. In the case of a user contracting Covid-19 they would know where they must contact. Then the business/institution can go through their record and contact each user of a possible outbreak.

# Reason for Choosing Project

I chose this project for several reasons. I recently started playing with an Arduino board and found the programming of the hardware very interesting. However, for this project I am going to use an ESP32 board for its low cost and IOT benefits. Although in previous years we have studied the MEAN stack I would like to develop a fully comprehensive project around it. Contact tracing is already being implemented through pen and paper. I believe this is a contradiction to GDPR as that information can be easily stolen. Creating an application for this purpose can protect user’s information and streamline the contact tracing process.

# Technologies you plan to use

NodeMCU ESP32 board

PN532 NFC RFID Module

MEAN Stack (Mongodb, Express, Angular.js, Node.js)

HTTP protocols

# Architecture

Mongodb – Database

Express – Backend

Angular – Frontend

Node.js – Handle the modules

# Work Allocation

This is a team of one and I will be completing the whole project myself.