

COSC345 – Software Development – Initial Report

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Executive Overview

According to the Ministry of Health (NZ), ~6 % of New Zealanders suffer from some form of Anxiety disorder, with young adults being at the highest risk. With professional therapy for SAD being extremely expensive and inaccessible to many, there is a market to provide quality information and treatment to those unable to afford it. The aim of the project is to develop an easy to use, iOS application that will help young adults struggling with social anxiety disorder (SAD) rehabilitate. Ethan Brake will be the head developer and designer, Nathan Laing will carry out research on how we should aim to develop our product and Robert Giles will take the role of planning and reporting officer. The key software resources are Microsoft Project 2016 edition, Xcode (Swift) while the key hardware resources include laptops for development and apple devices for testing. Some of the risks are: loss of team members, arguments/creative disagreements, inaccurate market research, missing deadlines and loss of machines. The key dates are: 16th April 2018 (report due), 28th May 2018 (alpha release), ~week 4, semester 2 (beta release) and lastly ~week 12, semester 2 (finished product).

Introduction

The purpose of this report is to provide an overview of the background information as well as the development process. This will include an introduction to the disability, a project description, a plan of how we are going to support the disability users, some resource requirements, a project breakdown, the organisation of the team, risk analysis, project schedule/monitoring and reporting.

Social Anxiety Disorder (SAD)

Social Anxiety Disorder is a disorder where an individual has an abnormally strong and persistent fear of being embarrassed or judged by others in a social situation. This anxiety often manifests itself in physical symptoms such as excessive blushing, excess sweating, trembling, palpitations, and nausea. Speech can also become stuttered and rapid. To try and hide symptoms and reduce their anxious behaviour, many will try to avoid attention and rely on alcohol or drugs. This can often worsen the situation as social performance can easily deteriorate with the addition of alcohol and/or drugs.

Project Description

We will deliver an iOS application that aims to provide free, quality help to those suffering from SAD. This will include links to helpful information about different anxiety disorders, places they can find help and common exercises they can use to calm themselves down. In addition to this we plan to implement a challenge feature which will allow users to reward themselves for completing small challenges to do with social contact (e.g. say “Hi” to a stranger). The application will mainly be focused towards SAD; however, our app will include features useful to those with any anxiety disorder (such as links to helpful sites and ways to calm yourself down). In-depth analysis of the disorder and importance of the application can be seen in the Market Research Article PDF.

Supporting Users

When it comes to designing our application, we can follow the UK Home Office’s guide to developing technology to support users with anxiety issues (1). Below are some of the philosophies we should keep in mind. We should give users enough time to complete an action, so they don’t feel rushed. Explain or make clear what will happen after completing an action or service. Make important information easy to understand and clear so users aren’t left uncertain about the consequences of their actions. Give users easy access to any help they might need to complete a service. Also let users check the information in forms/questionnaires before and after submitting them. If we take these ideas into consideration when implementing features in our application, it will drastically increase usability.

Resource Requirements

The resources that are required as based on the 4 M’s: Men, Materials, Methods, and Machines (equipment) (2). The men resources are: the project team (Ethan Brake, Nathan Laing and Robert Giles), the University of Otago’s Professor Neil McNaughton for expert advice, and individuals with Anxiety Disorder for early application testing and feedback. The material resources that will be used are money for minor purchasing e.g. stationary or travelling expenses. The software material required will be Xcode (for developing using Swift), online databases of information and Microsoft Project. As the area of Anxiety Disorder is new to all project team members, resource method used will be Scrum (Agile). This is because it allows for easy adaptation and not strict plans. As the application is based on software the machine resources are, three laptops (one for each project member), university computers, iPhones, and an Apple Watch.

Organisation

The organisation will be based on a flat hierarchical structure. The project team members have their strengths that will place them under certain roles, but every project team member is in theory interchangeable with their role. To begin with Ethan Brake will be lead designer and developer as he has more extensive programming experience, Nathan Laing will carry out the background research and ensure features are applicable to SAD as he has experience in the field of psychology and neuroscience and Robert Giles will take the role of planning/team leader

as has experience working and organising teams in a real-world job environment. All project members agree with this layout.

Project Breakdown

The project can be broken down into deliverables. These are: the final draft design of the software application, the alpha release of the software application, the beta release of the software application, the finished software application and a debugged final product.

Risk Analysis

Risks are a well known hazard and hinder the success of a project. Since risks are often unavoidable it is best to identify them and find ways to deal with them.

The first risk for the 'Men' resource is if a team member becomes unable to fulfil their share of the project for an extended period. There are no real solutions if the risk were to occur, however safeguards can be put into place to ensure work already done by an individual can be used and understood by other members of the group. These safeguards would include, having team members keep logs and backups of any work done on a regular basis. The second risk for the 'Men' resource is internal conflict between team members. The general solution for this is to have a non-conflicting team member or an external party mediate and diffuse.

A 'Material' resource risk is bias or inaccuracies in collected data. This could lead to an app that misses its target audience or doesn't help them in any measurable way. As the data collected in the research phase is used throughout the project this will ultimately cause the project to not achieve a satisfactory standard or even fail. A solution for this would be to use multiple trusted and knowledgeable sources. This will ensure the information collected is verified and to be true and fair.

A 'Mechanical' resource risk is if computers or other devices being used are destroyed or stolen. A solution to this is to keep various backups or multiple devices including but not limited to, an external hard drive or a cloud-based storage system.

An overarching risk is missing project deadlines. A solution to this is to ensure a team member is placed in charge of key dates and deadlines and that the team member is using a variety of tools to validate and complement their efforts.

Project Schedule & Monitoring and Reporting

The rule of thumb of estimation for a project timeframe is 33% Project Planning, 17% Coding, 25% Component Testing and 25% System Testing. Taking this into consideration, the project will use Gantt charts and a Project Workbook in Microsoft Project to assist with the Project Schedule & Monitoring and Reporting. A key benefit of a Gantt chart is it is easy to look at the needed tasks and delegate them to members with the strengths needed to complete them. A project workbook is useful as it collects together the summaries of meetings, all important

information, known bugs and their potential fixes and any group member can view or update it quickly and easily.

There are four key dates for the project. On the 16th April 2018 a report on the breakdown of the whole project including software development and target market is due. The second part of this report will be due on the 28th May 2018 and will require an alpha release of the app plus various other up-to-date documentation. The third is approximately due date week 4, Semester 2 and will be a working beta release of the app and its related documentation. Finally, in approximately week 12, Semester 2 a finished working debugged documented application, including tested results is due.

Conclusion

The application we deliver at the end of the academic year will hopefully integrate easily into the lives of those suffering from anxiety and provide a way for them to begin rehabilitating. Taking advice from the quote “if you perceive that there are four possible ways in which a procedure can go wrong, and circumvent these, then a fifth way, unprepared for, will promptly develop” (Murphy’s Law) we plan to do more in-depth research, reporting and monitoring is done throughout the project.

Appendix

(1) Title: Accessibility-posters-set.pdf

Author: UK Home Office (Government Department)

Link: https://github.com/UKHomeOffice/posters/blob/master/accessibility/dos-donts/posters_en-UK/accessibility-posters-set.pdf

(2) Title: Requirements Engineering and Management for Software Development Projects

Author: Murali Chemuturi

Location: Page 107, Section 7.2.2

Link: <https://link-springer-com.ezproxy.otago.ac.nz/book/10.1007%2F978-1-4614-5377-2>

