Project Proposal

Mental Health Care AI Chatbot

School of Information and Communication Technology Griffith University

Team Name: HopeChat Devs

Course code: 3821ICT – WIL Single Project

Date of Submission: T12022

Industry Partner: **Datarwe**

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Designation	CEO

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Revision History

Table 1- Version Document Table

Date	Version	Author(s)	Comments
2022/03/27	0	Peiding	
2022/03/28	0.1	Peiding	Section 3.1
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2022/04/01	0.4	Peiding	Section 2.1
2022/04/01	0.4	Peiding	Section 2.2
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2022/06/01	1.1.0	Bennett	Section 3.11
2022/06/01	1.1.1	Daniel	Section 2.3.1
2022/06/01	1.1.1	Daniel	Section 2.3.2
2022/06/01	1.1.1	Louie	Section 2.3.3

Table of Contents

1. INTRODUCTION

1.1. Project Overview

Poor mental health is a global problem that requires more awareness; especially for those in developing countries as studies show that these populations can be at risk for poor mental health. As a small-scale organization, Virtual Psychologist (VP), a text mental health counselling service provider, would like to increase the attractiveness of mental health care services using an innovative technology AI chatbot. The CEO of VP endeavours to develop a powerful AI chatbot that contains multiple personas to deal with the rising demand for mental well-being support. The unique needs of individual users could be addressed by such various AI chatbot personas. Therefore, the applicability of virtual mental health support could be broaden using AI chatbot. In the current project, Datarwe, a clinical data service provider, will be the technical support as well as a client to cooperate with the product implementation.

1.2. Team Overview

Project Team: HopeChat Devs

Team Assessor: Dejan Stantic

Course Convenor: Marde Helbig

In the table below, it describes all the team roles which are assigned respectively to each team member.

Table 2- A list of all project team members and their respective roles.

Team Member Name	Roles
Bennett Taylor	Back-end Developer, Business Analyst, Tester, Assessor Liaison
Daniel Airs	Back-end Developer, Project Manager,
Louie North	Back-end Developer, Program Tester
Melissa Young	Front-end Developer, Client Liaison
Peiding Wang	Project Manager, Business Analyst

1.3. Definitions and Acronyms

In the table below, it displays all the acronyms that will be used in this project proposal.

Table 3- A list of all definitions and acronyms used in this article

Acronym/unusual tool	Description
HTML	Hypertext Mark-up Language
CSS	Cascading Style Sheets
PHP	Hypertext Predecessor
GPT2/GPT3	Generative Pertained Transformer
GUI	Graphic User Interface
SDLC	Software Development Lifecycle
WBS	Work Breakdown Structure

1.4. Project Deliverables

This table provides all the project deliverables that are handled to clients. All the documents have been read and approved by clients.

Table 4- Deliverables Document Information

Deliverables	**Description**	**Planned Delivery**
Project Proposal	A document that defines project scope, provides solution and state planning approach	Mid-term: 08/04/2022 Final: 10/06/2022
Product Backlog - test log	A document which contains the information about all the test cases details during the product implementation	Mid-term: 08/04/2022 Final: 10/06/2022
Product Backlog - changes	A document that contains the information about all the changes in project development	Mid-term: 08/04/2022 Final: 10/06/2022
Product Backlog – acceptance criteria	A document that provides the rules for team members to follow in order to get success in this project	Mid-term: 08/04/2022 Final: 10/06/2022

Gantt Chart	A document that displays the information about all the tasks created during project processing and how they are delegated	Mid-term: 08/04/2022 Final: 10/06/2022
User Manual	A document which could inform users how to use the product	Mid-term: 08/04/2022 Final: 10/06/2022

1.5. Referenced Documents

Table 5- Index reference table

Document	Appendix Number
Organisational Structure	A
Risk Matrix	B
Jira Software Screenshots	C
WBS	D
Gantt Chart	E
Product Design Mock-up	F
AI Model Training Demo	G
Product Backlog - Test Log	H
Product Backlog - Acceptance Criteria	I
Product Backlog - Changes	J
User Manual	K

2. PROJECT VISION

2.1 PRODUCT VISION

"HopeChat" is an AI chatbot designed for the people who live in developing countries. The target audience/ customers of this product are the youth group who have experienced stress, anxiety, and depression, especially for who has the suicidal idea to express. The "HopeChat" is a mental health care that helps customers to express their daily feelings, reduce the likelihood of suicide. Unlike Woebot, our product will be an online application, which could provide text mental cares anywhere and anytime, with much more accurate in disorder cognition using the GPT2 model trainings.

2.2 CUSTOMERS AND BENEFITS

Problem Description

The client would like to train a model using current existing data, to build a text chatbot which is focused on 'mental health.' The target customers which are concerned in this

project are majorly living in the third countries for example Philippine. Especially the youths who are afraid to talk with other people or on social media, the chatbot could help with this situation based on SINTEF's research (2018).

According to Saraceno team's research (2007), the major barrier of mental health care through 3rd world countries could be the shortage of well-trained psychologic experts. Therefore, a new pattern of counselling is created with the help of AI chatbot, the text mental health counselling service. VP company would like to increase the happiness of people who live in third world countries using this new way.

Solutions

To solve the problem, which is mentioned above, we could:

- implement a mental health focus chatbot which is stand-alone
- implement the notification system to improve the user experience
- provides the feedback submission system to gather user comments
- train the AI chatbot model with mental-related data
- cooperate with local hospitals to collect real data needed
- implement multiple characteristics or personalities for the chatbot
- design a user-friendly interface with strong accessibility

Benefits

- To help people who were experienced or are experiencing mental issues by text counselling, preventing the possible severe syndrome will occur.
- Cost-saving comparing to the physical counselling session
- Timesaving for the counselling booking
- Reduce the customers suicidal desires - giving them hope
- Increase the communications between users and products
- Increase the feedbacks gathering speed comparing to traditional therapy

2.3 SOFTWARE METHODOLOGY

To develop the project efficiently, the Agile software method will be used in this project as the working patterns which the team will follow. Agile is a software development methodology that focus on individuals and interactions.

The Agile SDLC (software development lifecycle) could be described as several following steps:

- Requirements
- Design

- Development
- Testing
- Deployment
- Review

Using Agile, team will receive better customer collaboration which leads to quicker responses to changes. Comparing to old waterfall methodology, Agile will keep each team member on the track, reduce potential risks and make project more measurable by dividing it into small tasks. Most importantly, the retrospective feedback is the key feature of Agile to make sure the project will be successful.

2.3.1 CHALLENGES

In the table below, it displays all the challenges during the AI model Training.

Table 6 - Challenges

Challenge	Description
Formatting the data.	The data given contained names, locations, URLs and other features that had to be removed.
Using Huggingface's Transfer Learning model.	The training model we used had difficulties with using the VP data and producing coherent results from the data.
Long wait times.	Due to the machines, we were provided by Datarwe, training took many hours for a single iteration, of which several should be undertaken to improve quality.

2.3.2 LEARNINGS

In the table below, it displays all the learnings that the AI model learned using VP's data.

Table 7 - Learnings

Learning	Description
GPT-Neo	GPT-Neo was explored, as it offers a free alternative to GPT-3 with similar performance. Unfortunately, as it is relatively new, there was a lack of resources regarding chatbot creation. This, combined with the progress already made with GPT-2 lead our team to pick GPT-2.
GPT-3	GPT-3 wasn't chosen as the primary model as the input format was deemed

	harder to work with, along with the cost associated.
GPT-2	GPT-2 was initially chosen given the lack of an associated cost, and the swath of resources enabling quick testing.

2.3.3 DIFFICULTIES

In this project, the team faced several difficulties as listed above. Primarily, the HopeChat team faced trouble with the implementation of Generative Pre-trained Transformer 2 (GPT-2) as the Artificial Intelligence used for HopeChat. In particular, the backend team had trouble with getting the HuggingFace Model to train correctly based on the data that the team had given it. Instead, the model was training itself based on the pre-set data that had come with the model. Despite all the issues that were encountered, the team were able to overcome most of them. The HopeChat AI chatbot is therefore now at a stage where the integration of the frontend and the backend can occur. This will allow a final, fully integrated service to be delivered to the client.

2.4 KEY FACTORS TO JUDGE QUALITY

- Financial
    - The app will be free to download, and basic consultation with the AI will be free. Price is important, especially in countries where there is no mental healthcare coverage, or where healthcare coverage does not exist.
- Performance
    - Hugging Face is a large open source that offers a thousand NLP (Natural Language Processing) pre-trained models. Hugging Face is heavily optimized from the beginning with efficient methods for quick training and response. The methods of optimization depend on the model architecture; however, tokenization and precomputation are the most impactful. The app we produce must run efficiently and quickly, as initial app impressions are vital to customer retention.
- Quality
    - A key feature of this app must be the ‘build quality.’ As part of this, the app must: follow a consistent design schema, follow a logical design schema, be easy to pick up and understand across varying levels of understanding, and be virtually bug free. These factors are essential to the experience of the end user.

- Reliability
    - The app must be reliable. The concept of reliability can be broadly summarized as a need for consistency. The app must be consistent in its performance over time, and consistent in its function. The app *must* work when a user wishes to use it; the user must not sacrifice for the app.

2.5 KEY FEATURES AND TECHNOLOGY

In the table below, it displays all the key features and technology that will be included in this project proposal.

Table 8- A list of Product key features and technology

Key Technology	Features
Account Authorization	Able to create an account, edit the account, log in, and log out.
Database Handling	Must securely store the account information, and any other personalized choices from the user (persona choices, etc).
Machine Learning Chatbot	Will utilize pretrained models, with several models for several personas.
Speech to text	Communication can be made to the bot through dictation.

2.6 OTHER PRODUCT FACTORS

The product will have many factors that are not part of the primary functionality but must still be present. These include:

Documentation: The AI chat bot will come with basic instructions on how to use the bot.

User abilities: Given the chat bot will be used by a variety of people, the abilities of the specific user must be taken into account. The bot should be able to correct basic spelling and grammar mistakes.

Interaction with other services: The chat bot will be able to interact with other services to provide the user with more options that may be needed. For example, the user may need to seek further treatment, thus the chat bot could refer the patient to mental health services near them.

Potential for growth: The chat bot will have the potential to grow. When developed, the chat bot will be able to provide basic support for anxiety and depression. However, the chat bot will have room to expand further and provide support for other mental illnesses.

Distribution: The chat bot will be hosted as a website online and as such will be widely accessible to as many people as required.

3. PROJECT ORGANISATION

3.1 ORGANISATIONAL STRUCTURE

In the figure below (APPENDIX A), it displays the organisational structure that provides several external and internal relationships between all the stakeholders in this project.

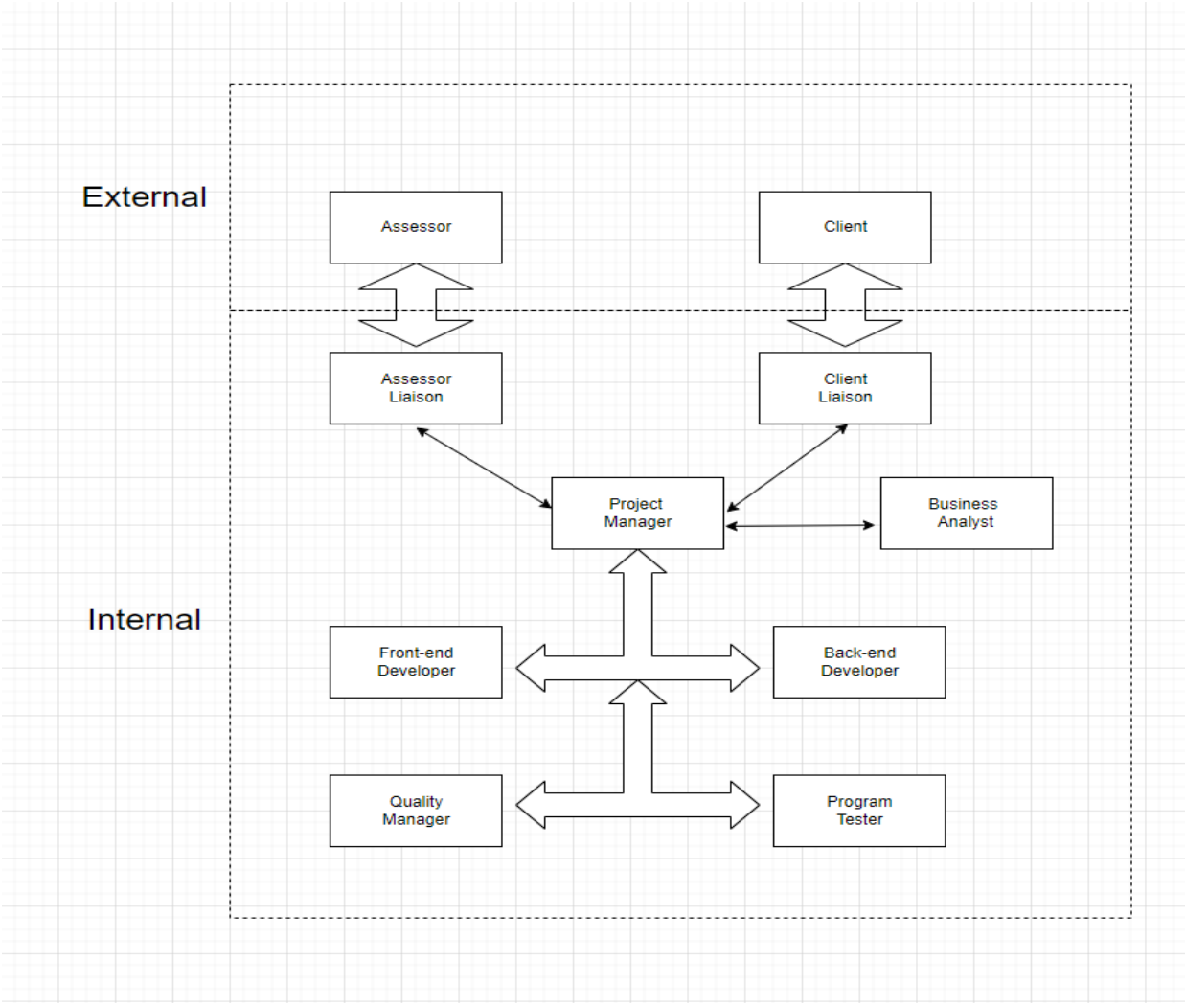


Figure 1- Organisational Structure

In this project, several software will be used in terms of communication with clients, assessor, and each team member.

- Communication

  Software Used: Microsoft Teams

  Stakeholders: Project team, Assessor

  Information: Working documents, process checking, weekly meetings

  Software Used: Slack

  Stakeholders: Project team, Clients

  Information: Working documents, process checking, weekly meetings

- Project Management System

  Software Used: JIRA

  Stakeholders: Project team, Clients

  Information: Tasks creations, Process tracking, Tasks prioritization

- Project File System

  Software Used: SharePoint

  Stakeholders: Project team, Clients

  Information: Working documents, Data transfer, Request for documents, signed documents

- Email Channels for Communication:
  1. Assessor Email
     a. Stakeholders: Assessor Liaison, Assessor
     b. Information: queries about practice and deliverables.
  2. Client Email
     a. Stakeholder: Client Liaison, Client
     b. Information: Document requests, scheduled meetings, status updates.
  3. Internal Email
     a. Stakeholders: Project team only
     b. Information: Requested documents, forwarded important emails, reminders for meetings and expectations.

3.2 PROJECT RESPONSIBILITIES

In the table below, it displays all the team roles and responsibilities during the project implementation.

Table 9- A list of different project team roles and responsibilities

Team Role	Responsibilities
Assessor Liaison	To build the connection between the assessor and project team
Business Analyst	To analyse the business benefits of the product
Client Liaison	To build the connection between the client and project team
Front-end Developer	To build the front-end portion of the product which means user interface (UI) using HTML/CSS
Back-end Developer	To develop the product on the back-end side which h provides the solution and features of product
Program Tester	To test the program execution in the desired way
Project Manager	coordinates project tasks, assign them to the suitable team member, monitor the project progress
Quality Manager	to ensure the product meets the quality standards before selling

3.3 IDENTIFICATION OF SKILL NEEDS

In the table below, it shows all the skills needed in this project and categorized by several sections such as programming, leadership, and documentation, etc.

Table 10- A list of all relative skills and descriptions with their priorities

Skills	Description	Priority

Programming		
HTML	Knowledge on html	H
PHP	Knowledge on php, essential for databases communication	M
PYTHON	Knowledge on python, widely used on machine learning, data analysis, data visualization, etc.	H
GPT2/GPT3	AI coding languages in OpenAI	H
CSS	Knowledge on css, used for styling and laying out the web pages	M
Leadership	ability of managing the team, distribute different tasks to the relative team members	M
Technical Writing	ability of writing the article formally	M
Presentation skills	ability of presenting the product to clients	L
Time Management	ability of prioritizing the important tasks	M
Quality Control	ability of qualifying the product before it launches to the market	H
Documentation	ability of classifying the documents, reporting,	M

3.4 SATISFACTION OF SKILL NEEDS

In the table below, it displays all skills sets for each team member in terms of fulfilling the project requirements.

Table 11- A list of all project team members and their skill sets.

	Bennett	Daniel	Louie	Melissa	Peiding
Skills	Level (NULL, L, M, H)				
Programming Skills					
HTML	M	H	M	H	L

PHP	M	M	L	M	L
PYTHON	M	H	M	M	L
GPT2/GPT3	NULL	L	L	NULL	NULL
CSS	L	L	M	H	L
Interpersonal Skills	H	H	M	M	L
Documentation	M	H	M	M	M
Technical Writing	M	H	L	M	M
General Management	M	M	M	M	H
Presentation Skills	M	M	M	M	M
Time Management	M	M	M	H	H
Quality Assurance	H	M	M	M	M

In the skills matrix above, it shows all member's skills set which they have in preparation for this project. The content of this table is discussed by all group members in the internal meeting. it could help with determination of which role will be suitable for each member. Each skill is estimated using (NULL, Low(L), Medium(M), High(H)) legends.

To succeed in the current project, the most important factor could be the programming skills. The GPT2/GPT3 skill is a significant element for the implementation of an AI chatbot on the back-end side. In order to obtain better task delegation performance, JIRA software is offered by Datarwe (APPENDIX C).

The table below shows the critical skills of the product implementation and how each team member is familiar with.

Table 12- A list of key skills used in this project

	Bennett	Daniel	Louie	Melissa	Peiding

Skills	Level (NULL, L, M, H)				
Programming Skills					
HTML	M	H	M	H	L
PHP	M	M	L	M	L
PYTHON	M	H	M	M	L
GPT2/GPT3	NULL	L	L	NULL	NULL
CSS	L	L	M	H	L

Two of the following identified skills (HTML, CSS) to complete the website application user interface have been assigned to the team member who has the highest level (Melissa). All the group members are not familiar with the AI training programming language (GPT2/GPT3) which means that the team will need more training from Datarwe's technical support. These trainings will be led by Dennis and Tina, who have sufficient knowledge of programming tools and languages. In recent research of Tina, due to the dataset scale and available programming period, the most suitable tool/model will be the GPT-NEO, which is considered as an alternative of GPT3.

3.5 SUCCESS CRITERIA

In order to measure the success of the project, the team has worked with both clients and developed the success criteria below. All the team members will assess how they will meet these criteria as the project progresses and adjustments. These criteria will be needed to ensure the whole team is on track to complete the project successfully.

- *well-organised weekly meetings with clients and the team assessor*
- *weekly brainstorming sessions*
- *keeping touch with other team members*
- *sufficient capabilities in AI Chatbot coding*
- *weekly report and updates for both clients and assessor to maintain transparency*
- *suitable task delegation*
- *Establish milestones to track and breakdown project*
- *Team communication of expectations*
- *Defining individual roles*

To keep track more efficiently the whole team progresses, in this project, the WBS (Work Breakdown Structure) and Gantt Chart are created before the product programming (see APPENDIX D & E, respectively). WBS could break down all the major activities in the project, and Gantt Chart could display all the task details such as task duration, percentage of completion, and task status, etc.

3.6 STANDARDS FOR WORK PRODUCTS

Documents

In the table below, it displays all the standards will be used in the product implementation for documents.

Table 13- Document Standards for work products

Standard	**Role**
ISO/IEC/IEEE 26515:2018 Systems and software engineering -- Developing information for users in an agile environment	A standard that follows the chosen software methodology.
ISO/IEC 11411:1995 (Current – standard has been reviewed in the past 5 years) Information technology — Representation for human communication of state transition of software	A standard that assists in development of interactive software and data communication software

Design

In the table below, it displays all the standards will be used in the product implementation for product design.

Table 14 Design standards for work products

Standard	**Role**
Information Privacy Act 2009	A legal act to follow to avoid breach of user information.
Web Content Accessibility Guidelines (WCAG) 2.0 and 2.1	A guideline to follow to improve user readability and accessibility.

Coding

In the table below, it displays all the standards will be used in the product implementation for programming.

Table 15 Coding standards for work products

Standard	**Role**

HTML – Living Standard updated by the Web Hypertext Application Technology Working Group (WHATWG)	A guideline for supported features and versions of HTML
PEP 8 – Style Guide for Python Code	A guideline for coding practices. Some of these features are listed below: · *In source commenting* assists in understanding each section of code. This is a highly useful technique when there are several developers working together. · *Indentation and whitespace* - Indenting code blocks and having whitespaces between sections of code improves the readability of the code and improves the efficiency of detecting errors in the code.

3.7 COST ANALYSIS

In the table below, it shows all the costs required in the production of "HopeChat"

Table 16- an estimation of HopeChat Costs

	Time	**Cost**
Chatbot software platform		1400$
GUI Design	10 hours	600$
Software Icon/Avatar Design	5 hours	300$
Website Design	10 hours	500$
Chatbot setup and development		5000$
Employee Salary	60 hours	3000$
User Training	10 hours	2000$
Chatbot support and maintenance		9000$
Remote Support	1 year	5000$
Web Server Hosting	1 year	1000$
Server Maintenance	1 year	1000$

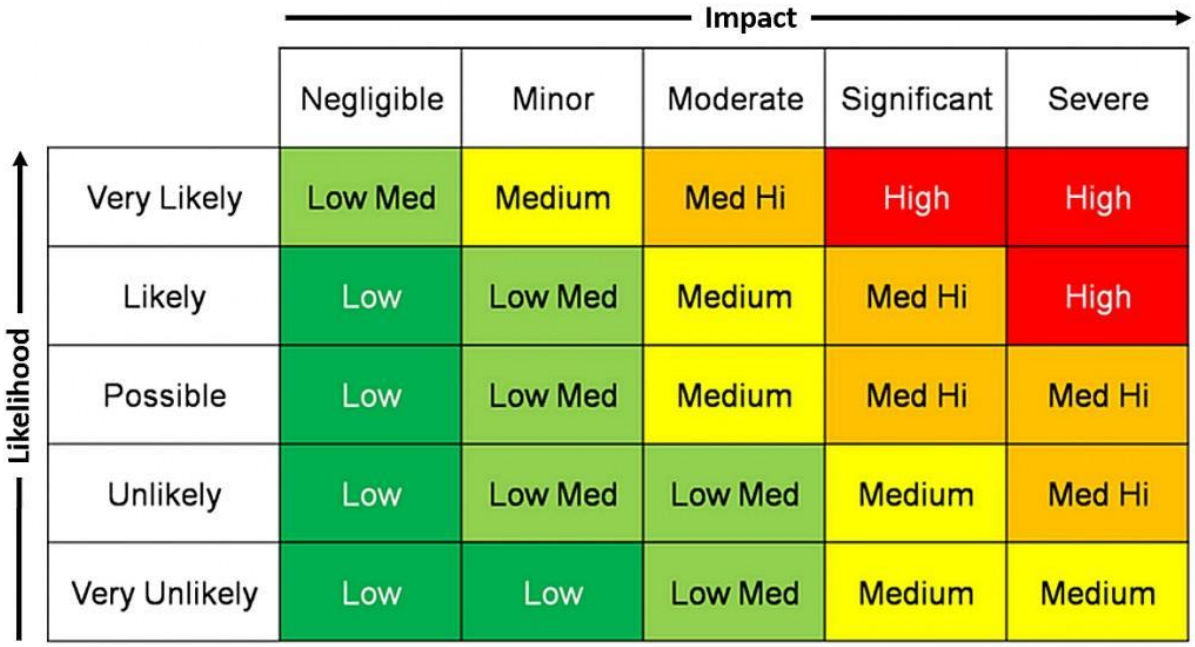
Chatbot Hosting	1 year	2000$
Total		15400$

3.8 RISK MANAGEMENT

In order to complete the project in a safe manner, a risk matrix must be completed. This is completed by identifying various risks, describing those risks, then providing management strategies for avoiding and recovering from those risks.

In the figure below (Appendix B), it illustrates all the risk likelihoods and impacts that are ranked by various levels from Low to High.

Figure 2- Risk Matrix



In the table below, it shows all the potential risks identified in the product implementation.

Table 17- A list of potential risks and their practical solutions

Risk #	Risk	Likelihood	Impact	Risk level	Manage Solution
1	Buggy Code	Likely	Significant	Med - High	Ensure user testing is accurate and effective. Unit testing to also to completed.
2	AI returns incorrect information	Possible	Moderate	Medium	Ensure the correct model and framework are being used to return

					accurate information to the user.
3	Project files being lost	Unlikely	Severe	Mediu m	Ensure that all projects' files are backed up and all project code is stored on GitHub.
4	Team member drops out	Possible	signific ant	Med - High	Ensure an equal distribution of workload between team members

3.9 TEST LOG

The test log is the section where our team describes the test cases. The test cases define how we as a team will test our AI chatbot. The table shown in appendix H shows our test log and the test cases. These test cases show the user requirements that must be tested with our HopeChat AI bot. They also show the ranking of priority of each individual test case as well as the story points for each test case. It also shows the status for each of the test cases, which demonstrates how far each of the test cases has been implemented.

3.10 ACCEPTANCE CRITERIA

Acceptance criteria refers to a set of predefined requirements that a software product must satisfy in order to be considered complete. These requirements are testable, and the results of these tests must leave no room for interpretation (either pass or fail). The table shown in Appendix I exhibits the requirements that must be met in order to mark HopeChat as complete. Each requirement shown in the acceptance criteria can be met once the test cases shown in Appendix H are completed.

3.11 CHANGE MANAGEMENT

The change management process shown in Appendix J provides a practical framework to track/plan individual and organisation changes. It conveys what adjustments need to be made and tracks performance on how we are doing. Anytime a new change was discussed during the project, it was added to this table and updated based on its progress.

4. CONCLUSION

This section will discuss the project planning of the Hope Chat, the milestones that were achieved in the project timeline and the next steps that could continue after the handover of the Hope Chat Project.

4.1 PROJECT GOALS

The goals that are completed is developing a functional user interface for Hope Chat (APPPENDIX F) and several weeks training the Virtual Psychologist's data. Due to setbacks in training the data, the final goal of this project is to have an integrated back-end and front-end with a working model by 10th June, 2022.

4.2 MILESTONES

In table below, it displays all the milestone events in this project.

Table 18- Milestone Achievements

Milestone Event	Estimated Date
Project Proposal Approval (mid-term version)	22/04/2022
Project Proposal Approval (Final version)	03/06/2022
Front-end Integration	25/05/2055
Back-end Integration	01/06/2022
Application Integration	01/06/2022
Final Deliverables Approval	07/06/2022
Final Deliverables Submission	10/06/2022

4.3 NEXT STEPS

Model Decision

After the final goal of implementing a functional model into the back-end, the next step of this project could be researching the integration of GPT3 and Currie Model or fine-tuning the data with the GPT2 model that has been integrated into the current program.

Testing

Once this decision has been confirmed, then a testing phase with the finalized model and training data would be performed to check for any issues arising with the training data. The training data than can be retrained to correct any issues.

Hosting and Costs

The program is currently hosted on a local server only. To launch the program as a public version there needs to be a website domain and server connected to the program for it to be publicly accessible. Above in table 13, the costs for website and chatbot hosting is an approximate cost as the estimate depends on which domain or SSL certificates is purchased as these prices may vary. The other cost involved is if the program is going to be storing the data to a server database. If a server database is required, then the client could use the current AWS database that is storing the training data which is provided already from Datarwe.

4.4 TIMEFRAMES

The current timeline to complete the goals of the project is shown below:

Table 19- Timeline Estimation

Best Case Scenario	**Worst Case Scenario**
The training model file has been created by the 5th of June	A training model file could be produced by the 5th of June but is still outputting conversational errors.
The model file can then be integrated with enough time to be tested with the front end and handover by the 10th of June.	The model file is integrated by June 10th into the program but can be replaced when a newer better trained model file is created.

5. AGREEMENTS

X
Client

Date: 10/06/2022

Dervla
Chief Executive Officer
Virtual Psychologist

X
Client

Date: 10/06/2022

Steph Chaousis
Partnerships Manager
Datarwe

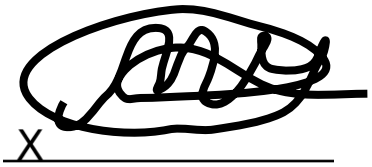
Team member 1 Louie North 

X

Team member 2 Bennett Taylor

X_____

Team member 3 Daniel Airs



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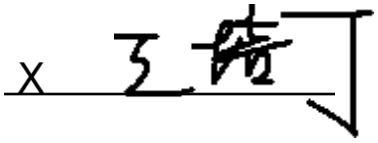
Team member 4 Melissa Young



Team member 5 Peiding Wang

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APPENDICES

APPENDIX A: ORGANISATIONAL STRUCTURE

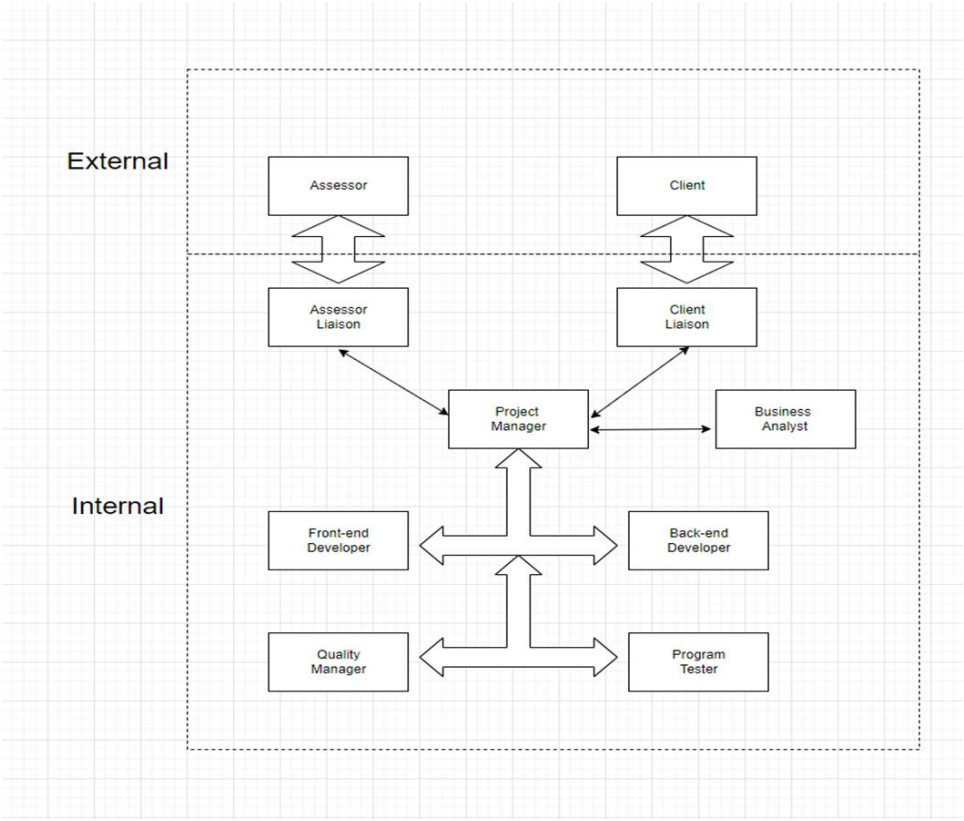

Figure 1- Organisational Structure

APPENDIX B: RISK MATRIX

Likelihood \ Impact	Negligible	Minor	Moderate	Significant	Severe
Very Likely	Low Med	Medium	Med Hi	High	High
Likely	Low	Low Med	Medium	Med Hi	High
Possible	Low	Low Med	Medium	Med Hi	Med Hi
Unlikely	Low	Low Med	Low Med	Medium	Med Hi
Very Unlikely	Low	Low	Low Med	Medium	Medium

Figure 2- Risk Matrix

APPENDIX C: JIRA SOFTWARE SCREENSHOTS

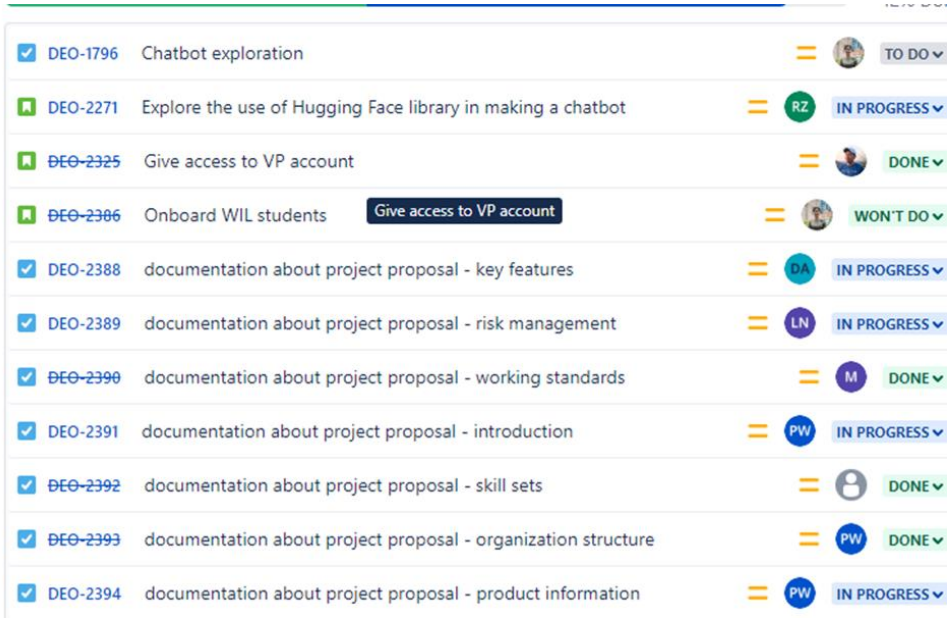

Figure 3- Task delegation using JIRA software

APPENDIX D: WORK BREAKDOWN STRUCTURE

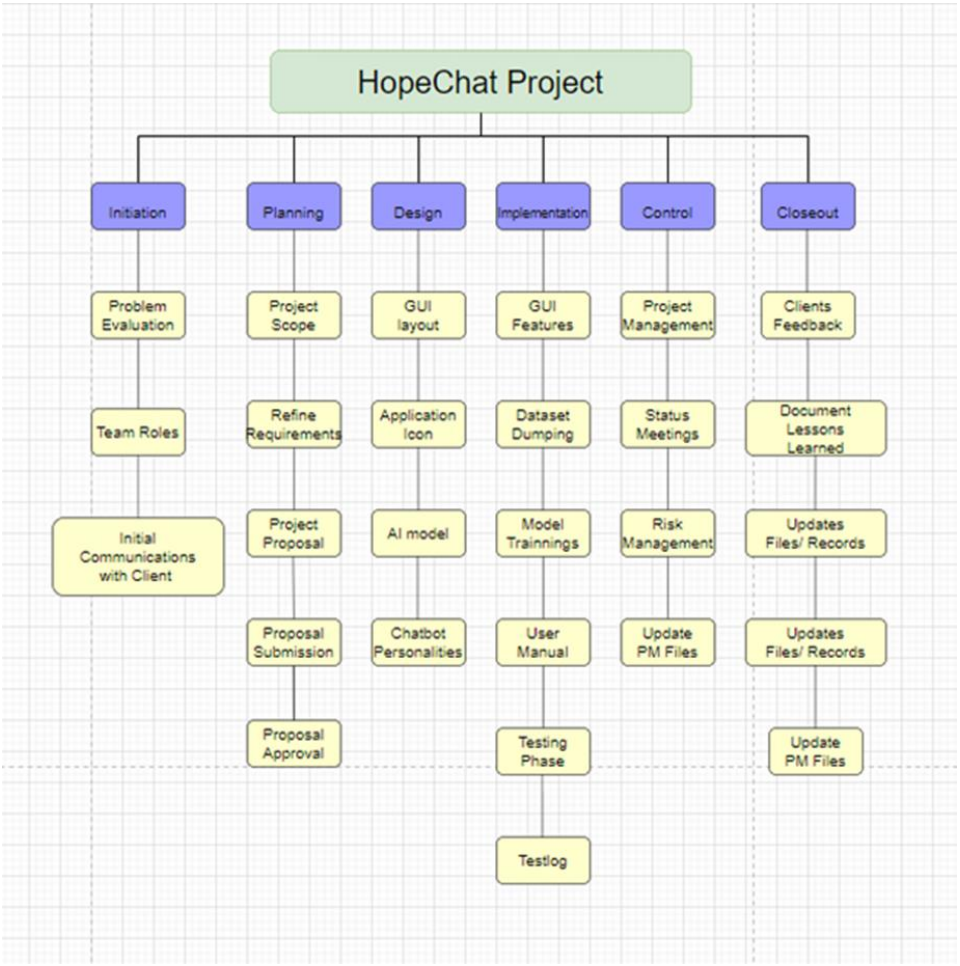

Figure 4 - Work Breakdown Structure

APPENDIX E: GANTT CHART

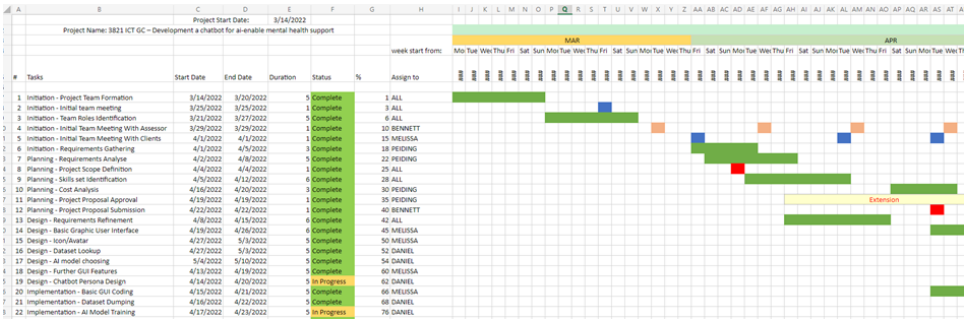

Figure 5- Gantt Chart

APPENDIX F: PRODUCT DESIGN MOCK-UP

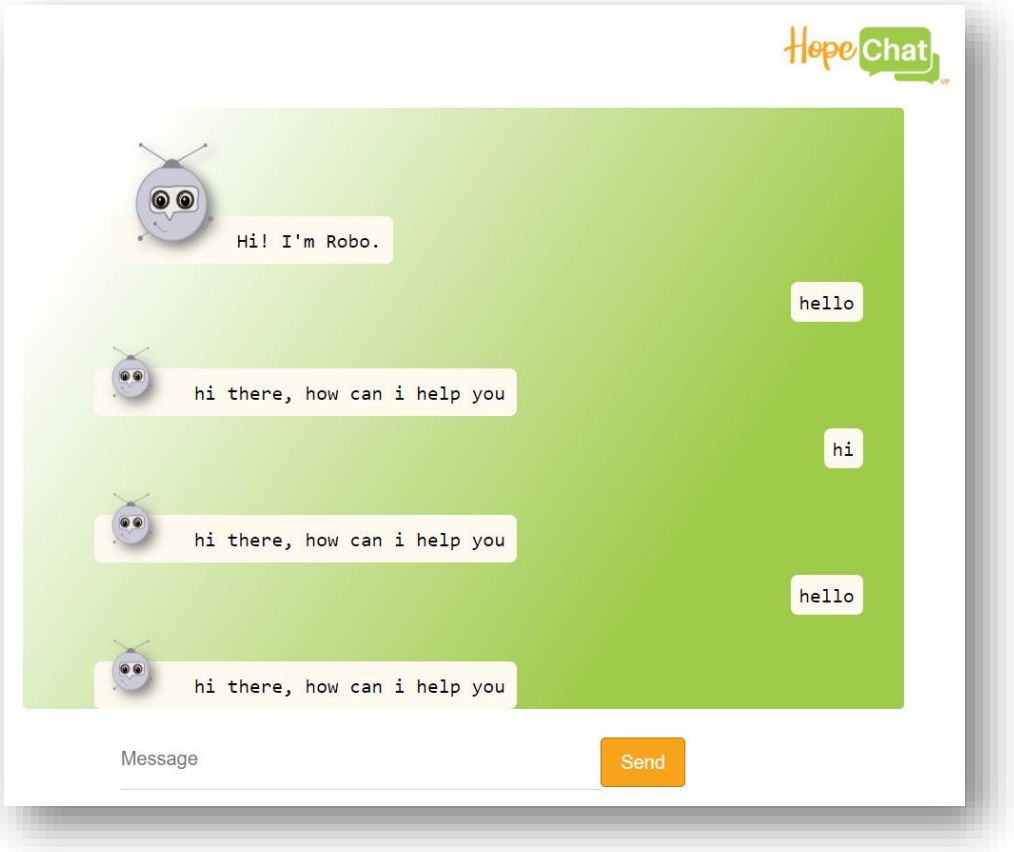

Figure 6- Mock-Up Design without Robot background as per Marketing request

Figure 7- Mock-Up Design with Robot Background

APPENDIX G: AI MODEL TRAINING DEMO

```
>>> I'm sad because I've been stuck inside for weeks. What should I do?

it would be good to have a discussion with your therapist about what you can do to help you cope
```

Figure 8 - Presenting Chatbot with a problem scenario

```
>>> Do you have a dog?

hello, and thank you for sharing your story. this is a difficult topic and the most important thing
>>>
```

Figure 9 – Asking Chatbot a general question

```
it depends on the specific colour of your dog. most dogs are hard to see because they can be
>>>
```

Figure 10 – Asking chatbot about their favourite colour

```
yes, i go to school and learn, so that is my favorite school. my friends go to
>>>
```

Figure 11- Asking chatbot if they go to school

APPENDIX H: PRODUCT BACKLOG – TEST LOG

Identifier	Theme	As a/an	I want to	so that	Notes	Priority	Story Points	Sprint Assigned	Status
U1	**Portablity**	user	download the application through Google App Store (Google Play Store)	search HopeChat in the GAS	the application is about a mental health care chatbot	1	2	1	In progress
		User	Allow the app to run on both computer and phone	more people can access HopeChat					
U2	**Usability**	user	chat with	smartphone screen or on pc's	interaction	2	5	1	In progress
U3		user	create an account in HopeChat	account		1	1	3	In progress
U4	**Functionality**	user	Mute the HopeChat	I do not need chat with it every second	mutting time	1	2	2	In progress
U5		user	have Hopechat set goals(daily reminders)	I can achieve a successful Therapy					
U6	**Accessibility**	user	use HopeChat via voice message	I can access the chatbot without typing		2	4	1	In progress
U7		user	contact support team via email	I can submit the feedback		1	3	1	In progress
		user	be able to access Hopechat 24/7	I can access Hopechat in times of need					
U8		user	have access to a HopeChat tutorial	and know whether or not it will fill my needs		1	3	1	In progress
U9		Admin	make conversations private and secure	users		2	7	2	In progress
U10		user	Make basic conversation with Hopechat	I can receive basic help with my mental health		1	5	2	In progress
U11		user	Recieve links to addidional mental health se	I can receive addiational help beyond that of hopechat					In future
U12		user	Access Hopechat through a webpage	I can access mental health support anywhere		3	2	1	In progress
U13		user	Access hopechat in English	I can recieve mental health support in a language I speak		1	1	2	In progress
				language I speak					

Priority Key
1 - mandatory; High
2 - mandatory; Medium
3 - mandatory; Low

Story Points Key
1 - Very Easy
2 - Easy
3 - Medium
4 - Complexe
5 - Extremly Complexe

Figure 12 - Product Backlog (Test Log)

APPENDIX I: PRODUCT BACKLOG – ACCEPTANCE CRITERIA

Identifier	Theme	User Story	Test Case	Test Progress	Notes	User Story
U1	As a User	I can input text into the text box	TC1	Tested by Mel	function in user interface	Done
U2	As a User	I can click the send button to send text to the bot	TC2	Tested by Mel	function in user interface	Done
U3	As a User	I can view my sent message and the response from the bot on the screen	TC3	Tested by Mel	function in user interface	Done
U4	As a User	I can scroll up to see previous messages when the page reaches a certain limit	TC4	Tested by Mel	function in user interface	Done
U5	System	The back-end can receive data	TC5	untested	waiting for model to be integrated	In progress
U6	System	The trained model can process the data	TC6	untested	waiting for model to be integrated	In progress
U7	System	The back-end can output a response from the mod	TC7	untested	waiting for model to be integrated	In progress
U8	System	The Model can detect 'flagged' words	TC8	untested	waiting for model to be integrated	In progress
U9	System	The model will send helpline links to the user if any flagged words are detected	TC9	untested	waiting for model to be integrated	In progress
U10	System	The model will save all users perivous session	TC10	untested	waiting for model to be integrated	In progress
U11	As a User	I can scoll up to see past conversations from a perivous session	TC11	untested	waiting for model to be integrated	In progress

Figure 13 - Acceptance Criteria

APPENDIX J: PRODUCT BACKLOG – CHANGES

Changes

Id	Theme	Issue and Solution	Notes	Status
C1	Download	the user could not find app in GAS	set up GAS downliad link	TD
C2	Access	the user could not access user profile	reset the permission to user	TD
C3	GUI	the user is unable to see chatbox	change the GUI settings	TD
C4	Booking	the user could not book the physical meeting	rearrange the meeting	IF
C5	AI model	Intergration between front-end and back-end	merge and make program talk to eachother	IP
C6	AI model	GTP2 model using default dataset	use only Virtual Psychology dataset	IP
C7	File	changes in proposal	proposal updates	D
C8	Coding	AI model choice: GPT2/GPT3/GPT-Neo	GPT2 - better training	D
C9	Meeting	on-site meeting for all members	Zoom meeting	D
C10	Team Role	personal issues	temporary role change	D
C11	AI model	data formatting issues	GPT2	D

Status	Description
TD	to do
IP	in progress
IF	in future
D	done

Figure 14 - Changes

APPENDIX K: USER MANUAL

HopeChat User Manual

The HopeChat AI chatbot is designed to provide you with relief for mild to moderate symptoms of anxiety and depression. This is achieved through the Artificial Intelligence which has been specifically trained to assist those with these mental illnesses. The HopeChat AI bot is accessed through a webpage for ease of use. Follow the instructions below to learn how to use HopeChat:

1. *Visit the link to the HopeChat AI Bot*

2. *The HopeChat Bot will introduce itself. Enter a message into the 'Message' box as seen below*

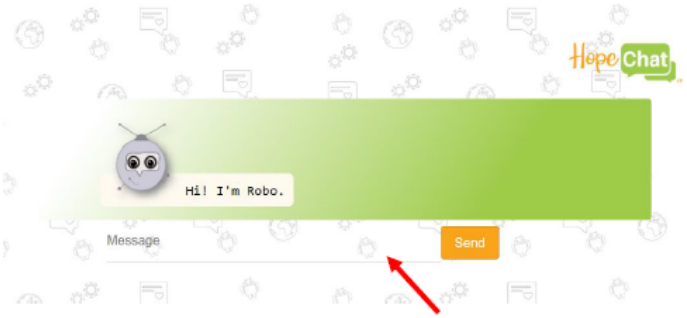

Figure 15 - User Manual