

DE-STRESS SERVICE APPLICATION

A PROJECT REPORT

Submitted by

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Of

BACHELOR OF ENGINEERING

in

Information Technology



Sardar Vallabhbhai Patel Institute of Technology, VASAD.

Gujarat Technological University, Ahmedabad

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**SARDAR VALLABHBHAI PATEL INSTITUTE OF TECHNOLOGY,
VASAD.**

INFORMATION TECHNOLOGY ENGINEERING

2019-20



CERTIFICATE

Date:20/04/2020

This is to certify that the Project Work entitled “De-Stress Service Application” has been carried out by Arshad Muthalif (160410116007), Mahammadtaaha Daruwala (160410116023), Simran Gulani (160410116001), Kaustubh Wade (160410116050), under my guidance in fulfillment of the degree of Bachelor of Engineering in Information Technology (8th Semester) of Gujarat Technological University, Ahmedabad during the academic year 2019-20.

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Acknowledgement

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We are grateful to Mr. Amit Kariyani, our faculty member for Final Year Project 1, Sardar Vallabhbhai Patel Institute of Technology, under whose aegis we were provided guidance to complete the project of Final Year. We are highly indebted to Amit Kariyani for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the project.

Abstract

The objective of our project is to help emotionally unstable youth and adults by chatting with bot or community anonymously. To make this possible we are using NLP (natural language processing) by which the cognitive state of the user is updated. Henceforth, an appropriate response to the user is sent and received instantly until and unless any one of the node requests for disconnection.

Feedback form is filled by the user if any further improvement of service is required and is enhanced according.

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1. Introduction

1.1. Introduction

With personal and social issues on the rise today, we are trying to help the community with solutions for depression. Stress and other mental disorders are issues we fail to see. It affects about 450 million or one out of every four people around the world. Mental illness and stress management continue to be some issues young adults strive to resolve.

Handling stress is the key to solve this issue. The lack of understanding and acknowledgement about symptoms varies as lifestyle changes.

We are creating a platform where a user can visit and search for answers or solutions for their concern. The user can interact with others with the same problem, ask their opinions and even directly fetch the solution from one who had similar problems long ago. We are targeting the generation of teenagers and Millennials as their problems are solvable and our country is the youngest in the world. By removing their worries, we are creating a stable India.

We hope that our services will be useful and inspiring to others.

1.2. Existing System

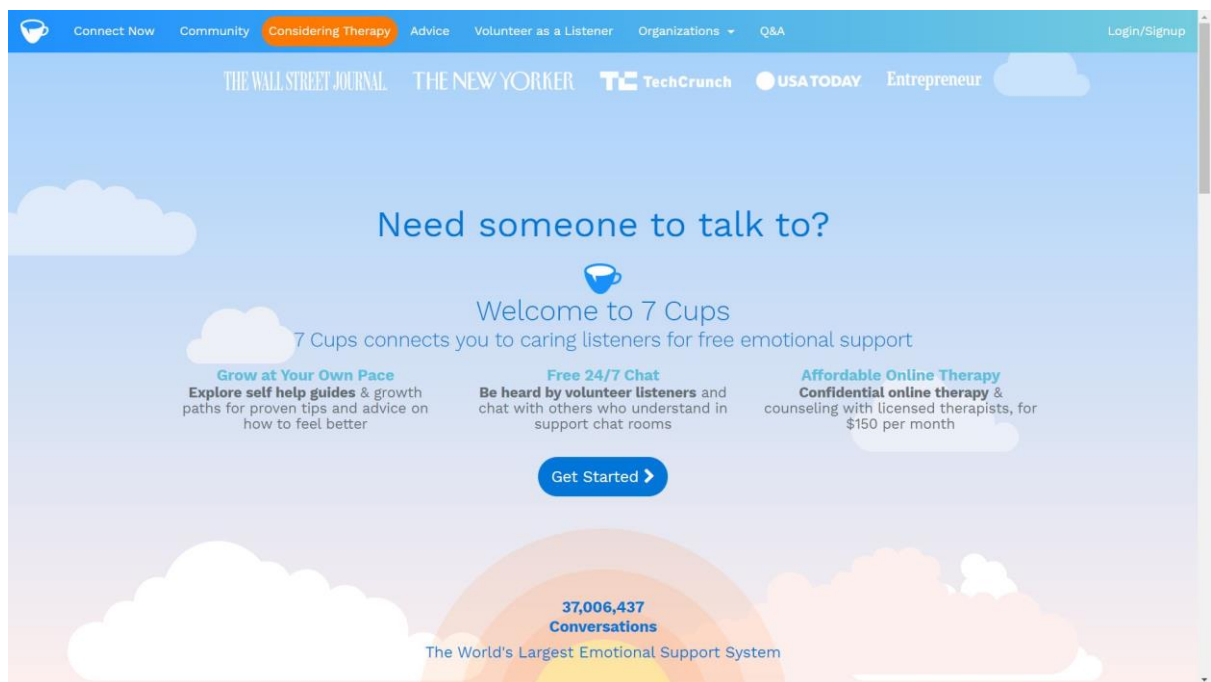


Figure 1 7cups.com

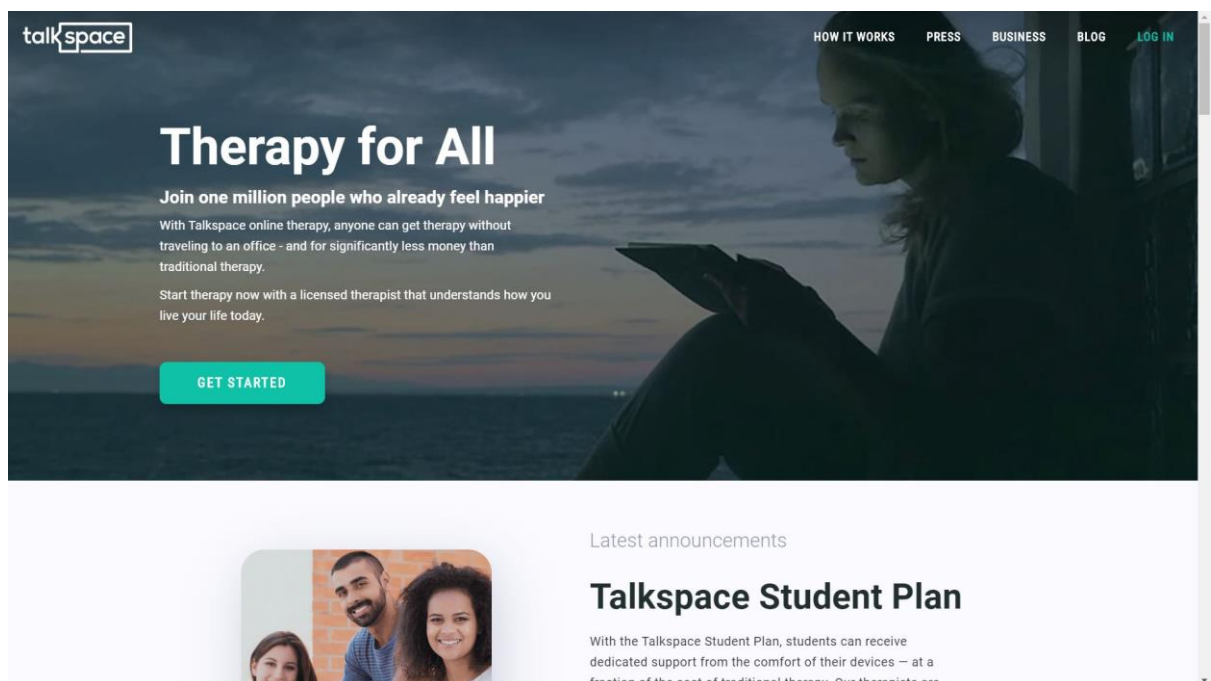


Figure 2 talkspace.com

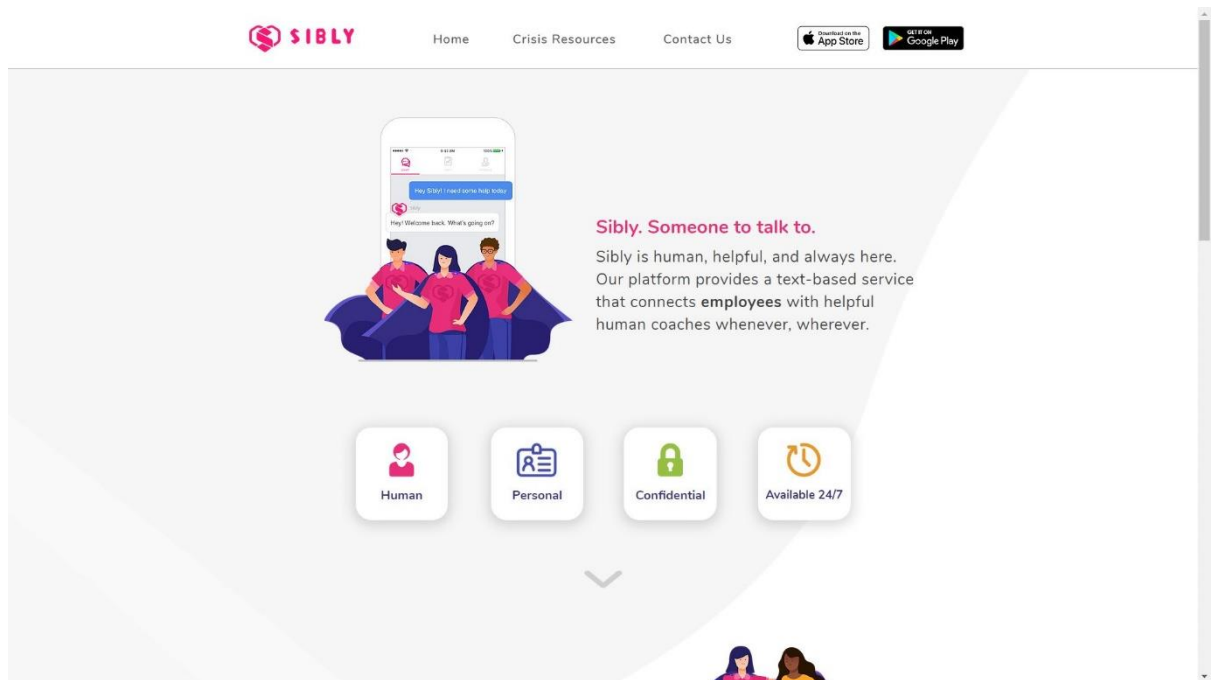


Figure 3sibly.co

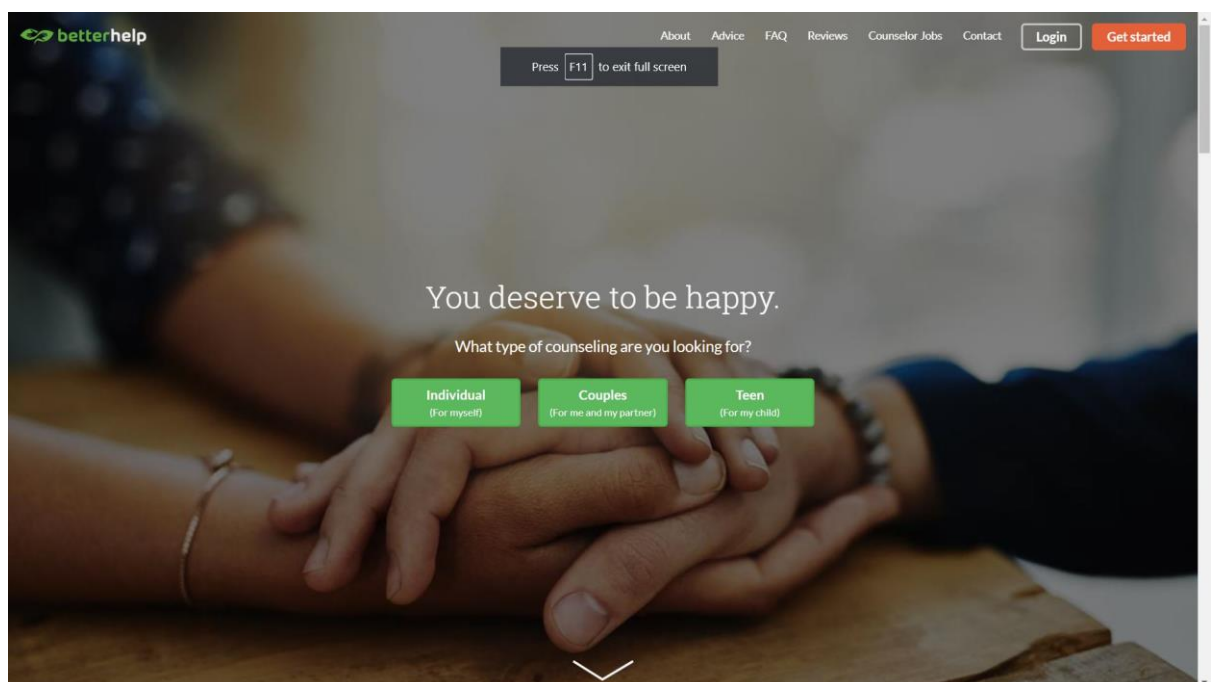


Figure 4betterhelp.com

The screenshot shows the ginger.io website. At the top, a blue banner contains the text "(Webinar) Behavioral Health Coaching: The Key to Effective, Scaled Care" and a "Register Now" button. Below this is a navigation bar with the ginger logo and links for "For Employers", "For Employees", "For Partners", "Resources", "Company", and "Contact Us". The main content area features a large orange section on the left with the headline "Behavioral health support — within 52 seconds". Below the headline, it states: "Get on-demand access to behavioral health coaching, video therapy, video psychiatry and self-guided content that's clinically proven to reduce symptoms of depression and anxiety." A red "Learn more" button is positioned below this text. To the right of the orange section is a photograph of a hand holding a small white bowl containing ginger slices and lemon. Next to the bowl is a smartphone displaying a profile for "ERICA HAYES", a health coach. The phone screen shows her photo, name, and a brief bio: "Hello, I'm Erica. My background is in alternative medicine, coaching, nutrition, fitness and mindfulness. As a Health Coach, I provide a safe, nonjudgmental space to share your feelings and talk about what matters to you. My hours are Mon-Fri, 6AM-2PM PST. Erica is ready to deliver your first session!" A "NEXT" button is visible at the bottom of the phone screen. At the bottom of the website, a "Trusted by" section lists logos for Pinterest, BuzzFeed, BuzzFeed Ventures Group, Sephora, and Chegg.

Figure 5ginger.io

The screenshot shows the Woebot website. The header includes the Woebot logo, navigation links for "The Science", "About us", "Blog", and "Employers", and a "We're Hiring" button. The main content area features the headline "Hi, I'm Woebot" followed by the subtext "Everybody could use someone like me". Below this is a diagram of a smartphone. On the left side of the phone, a speech bubble contains the text "Daily lessons and check-ins". On the right side, a speech bubble contains the text "Quick conversations to feel better". At the bottom of the phone screen, a small robot character is visible. Below the phone diagram are two buttons: "Download on the App Store" and "GET IT ON Google Play".

Figure 6woebot.io

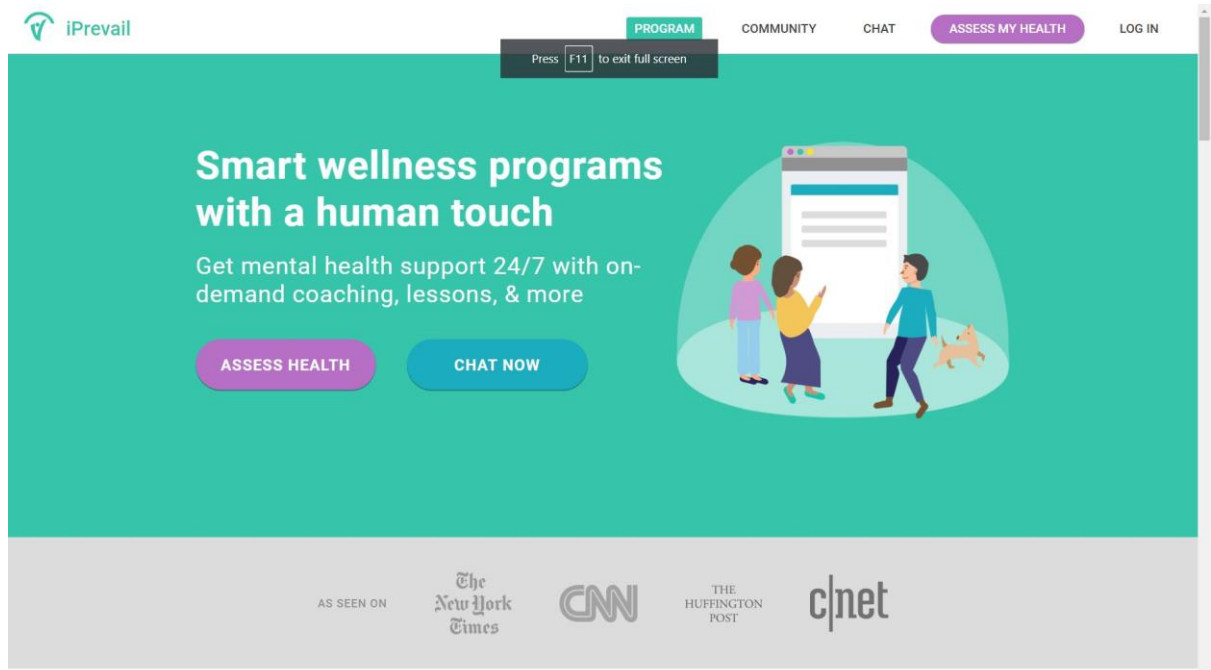


Figure 7iprevail.com

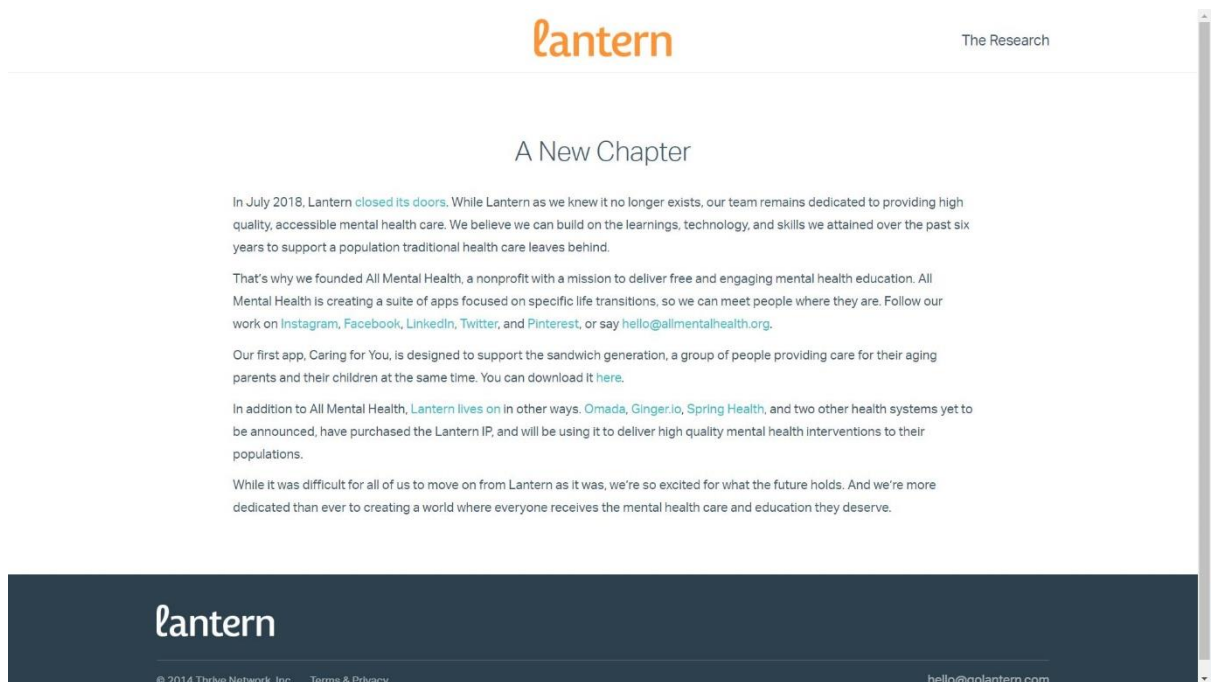


Figure 8golantern.com

1.3. Need for the new System

- Poorly Designed Websites.

Any website's primary goal is that the user should be able to navigate the page easily. But these websites are not so easy to navigate. The looks and feel of any website should reflect its motive and mood to the users. Some of the sites are not using the correct colour scheme like using dark colours which represent sadness instead of bright colours which reflect happiness.

- Less Skillful volunteers.

There are some cases where the volunteer is not been able to understand the user or even left in between the conversation without any notice, the user is stuck in this situation and can get frustrated. The selection of volunteers should be maintained with proper guidelines and qualifications.

- Availability on different platforms.

Some sites like woebot.io are only available on the App Store and Google Play. Some users might not be able to use these services because of that.

- Bad Chatbots

The chatbots are not well trained, they might get confused or give inappropriate reply while chatting to the users.

1.4. The objective of the new System

- Easy to understand and navigate.

Proper design should be implemented so that the user is not wasting time in navigating the site. Proper colour coding should be done on each and every element of the web page.

- Experienced Listeners.

There should be some minimum qualifications or criteria for a person to be able to volunteer on these websites.

- Active Community.

Apart from the volunteers, the users should maintain good practices of conducting various games or challenges online to create a healthy atmosphere for the users.

- Cross-Platform.

These services should be available on all possible platforms.

1.5. Problem Definition

We want all the people especially the teenagers to live a depression-free life where every-one is aware and able to overcome their problems related to mental health.

Today we have too many cases of this young generation not been able to cope up with the world only because of lack of emotional support. The parents and close ones are not able to recognize and help these children. We may miss the opportunity to become a fully developed country and can result in a world where no person is happy and had no driving force to move forward in life. These children are the future workforce of the country.

We will help these children by giving them mental support like therapies and teach them how to face depression and improve thinking capabilities.

1.6. Software Process Model

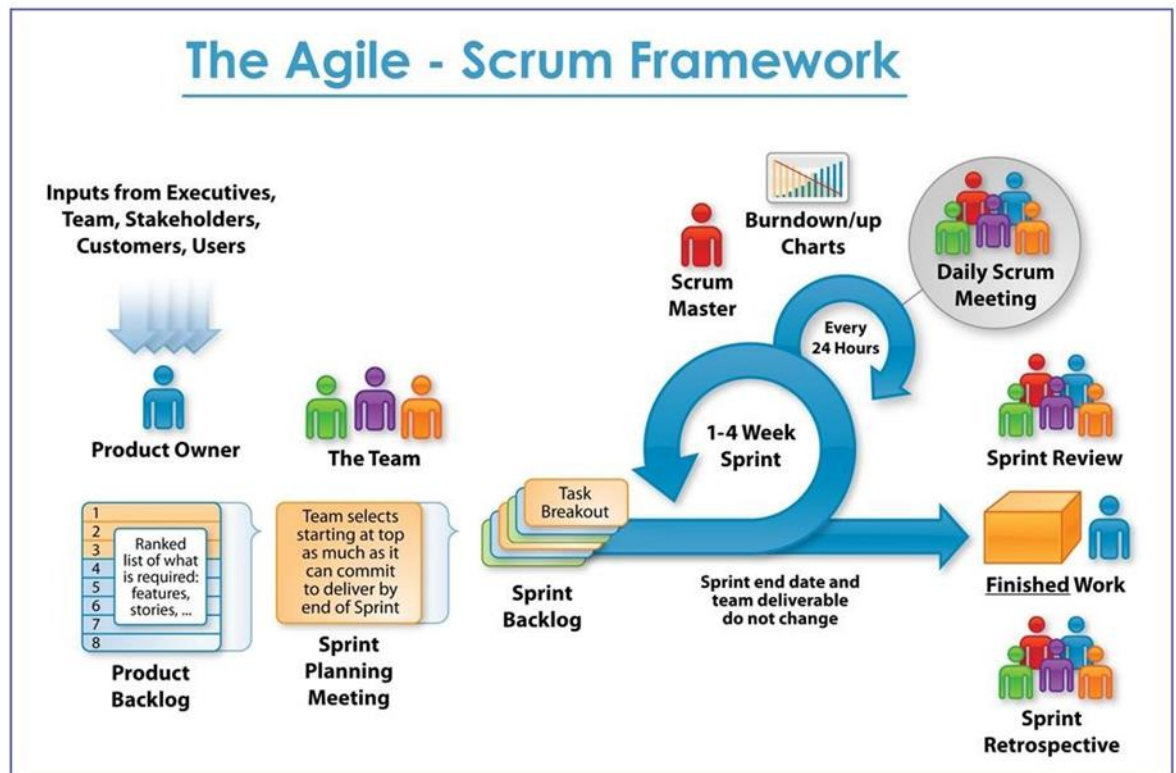


Figure 9 Agile Framework

1.7. Core Components

- Node.js
- React
- MongoDB
- Microsoft LUIS NLP
- Microsoft Azure
- Heroku

1.8. Project Profile

○ Introduction

Chatbots are being made to ease the pain that the industries are facing today. The purpose of chatbots is to support and scale business teams in their relations with customers. It could line in any major chat applications like Facebook Messenger, Slack, Telegram, Text Messages, etc.

Chatbots may sound like a futuristic notion, but according to global web index statistics, it is said that 75% of internet users are adopting one or more messenger platforms. Although research shows us that each user makes use of an average of 24 apps a month, wherein 80% of the time would be in just 5 apps. For example, Facebook Messenger, Snapchat, WhatsApp, WeChat, etc.

○ Chatbot Working

Users that selects new chat will talk directly with the Chatbot agent. It is based on natural language understanding, speech recognition, speech synthesis, and more, all in one easy to use package.

○ Socket Chat

It is an end-to-end, build once deploy everywhere development suite for creating conversational interfaces for websites, mobile applications, popular messaging platforms, and IoT devices. We are using it to build interfaces(chatbot) that enable natural and rich interactions between the users and the service.

1.9. Advantages and Limitations of the Proposed System

Advantages

- The system is available on 3 platforms Google Play Store, Apple App Store and a Website.
- The system is designed for easy navigation.
- Colour scheme will be provided to the user as a choice.

Dis-advantages

- The selection of volunteers is still not guaranteed to succeed in filtering the candidates.
- Some users may find this design not compactable with them.

2. Requirement Determination & Analysis

2.1. Requirement Determination

2.1.1. Functional Requirements

- User should be able to change the colour scheme anytime while using the service.
- All the navigation options should be available to the user home page.
- The navbar should be aligned to the left of the screen on the website.
- The navbar should be aligned to the top of the screen in case of the mobile application.
- User should be able to select the type of query while giving feedback.
- Mobile application should be lightweight and should not consume a great number of resources.
- The website should not heavily rely on JavaScript as it may lead to slower loading of pages.
- Only administrators are able to view the Database.

2.1.2. Non-Functional Requirements

- The website should be capable to handle more than 1000 users without affecting its performance.
- User should be able to flag a volunteer and even vice versa when the conversation becomes inappropriate.
- User should be able to get to speak with a volunteer within 2 minutes of the request.

2.1.3. Hardware Requirements

- Website
 - Windows
 - Windows or Later
 - Intel Pentium Processor or later that's SSE2 capable
 - Mac
 - OS X Yosemite 10.10 or later
 - Linux
 - 64-bit Ubuntu 14.04+, Debian 8+, openSUSE 13.3+, or Fedora Linux 24+
 - An Intel Pentium 4 Processor or later that's SSE2 capable
- Android
 - 2 GB RAM
 - 2 GB available internal storage space for installation

2.1.4. Software Requirements

- Node.js
- React
- Microsoft LUIS
- Heroku
- Microsoft Azure
- MongoDB
- Visual Studio Code
- Browser

2.2. Targeted User

- Youth (15-24 Years)
- Adults (25+)

3. Feasibility Study

3.1. Technical Study

Our project mainly works on the JavaScript technologies – React, Node. To work on these technologies the main understanding is to know JavaScript ES6. To get started with the project the Schema creation in the backend is important. Have to understand how mongoose works in backend and how the model is created in the backend which in turn is used to store the data in the database.

In frontend main understanding is to know to React life cycle and how to maintain the component structure in React. Creating a responsive site which can run in any device size is a challenging part for which CSS responsiveness coding structure should be known. Maintaining the state in frontend and using the redux to be known to work with react.

3.2. Timeline Chart

ID	Task Name	Start	Finish	Duration
1	UI Improvement	12/2/2019	1/20/2020	7.2w
2	Dialogflow Data Entry	12/2/2019	2/28/2020	13w
3	Dialogflow Integration	2/10/2020	4/30/2020	11.8w
4	Server Side Management	4/15/2020	5/15/2020	4.6w

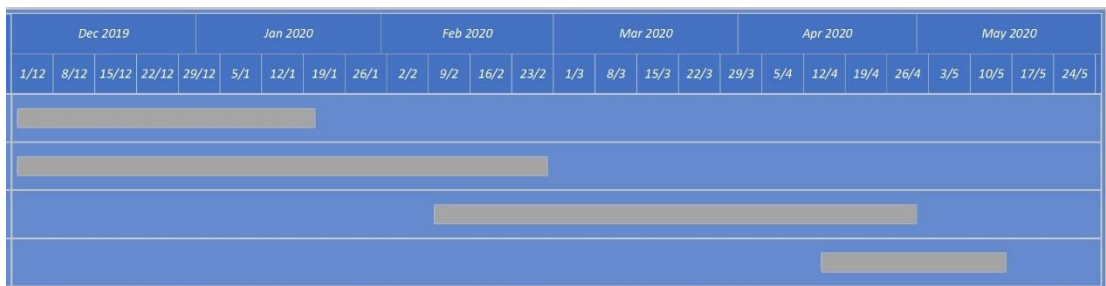


Figure 10 Gantt Chart

3.3. Economic Study

The main cost for this project would be hosting the code in the server. Main two of the server service providers is Microsoft Azure and AWS. AWS offers pay as you go service by which we will have to pay for only for the amount of space and time we use the hardware and software of the service. The total cost of running NodeJS code in AWS would be 28\$/month.

The technology which we would be using to develop frontend and backend would be React and NodeJS which is completely free to use, so not cost is estimated for the development technology we use.

As far as we will be using mongo dB to store our data and AWS cloud storage service will cost around 0.02\$ per GB.

For NLP service we might be using google dialogueflow or Microsoft LUIS. Initial usage is free for both of them but charges will be there according to the requests.

4. System Design

4.1. Use Case Diagram

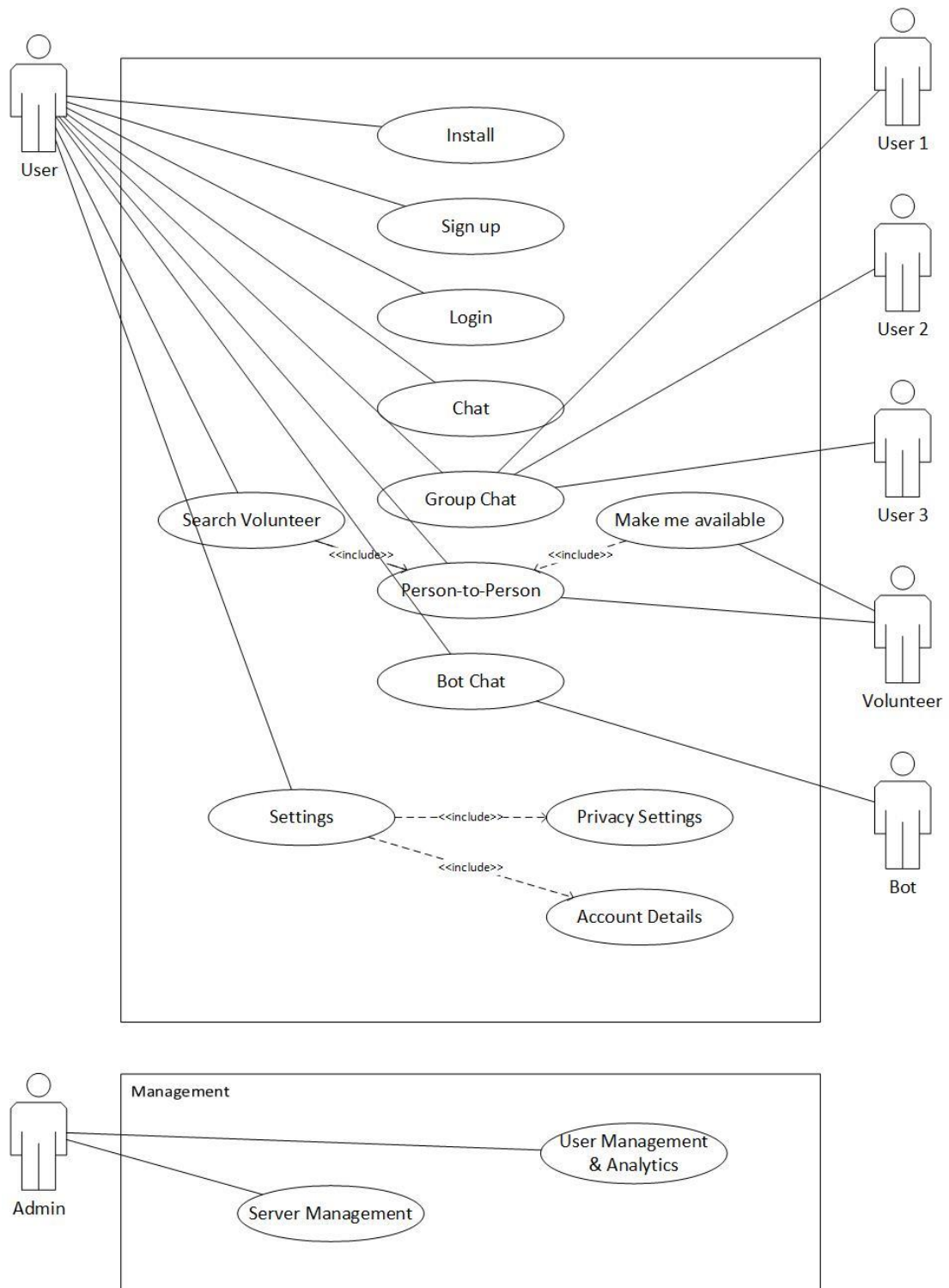


Figure 11 Use Case Diagram

4.2. Class Diagram

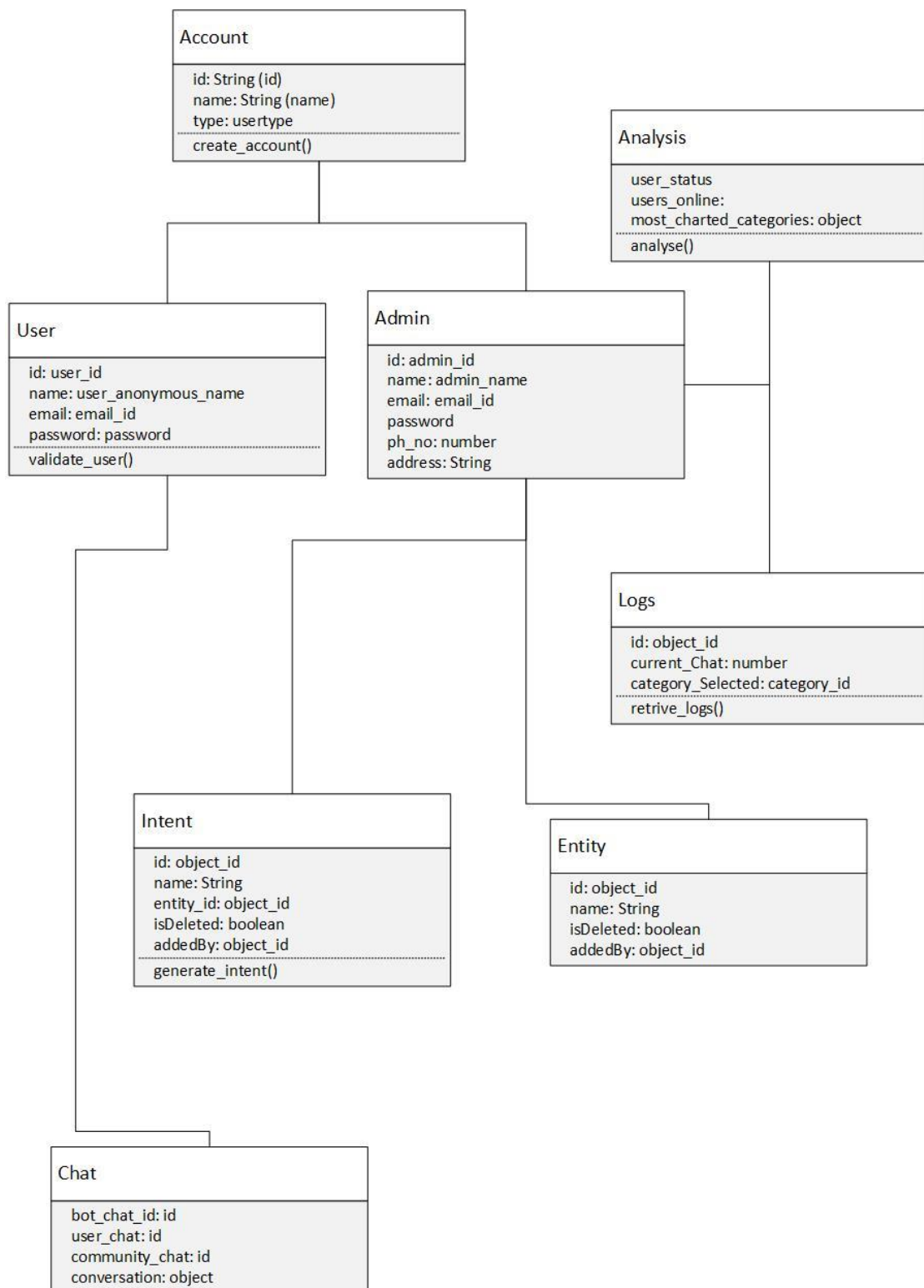


Figure 12 Class Diagram

4.3. Sequence Diagram

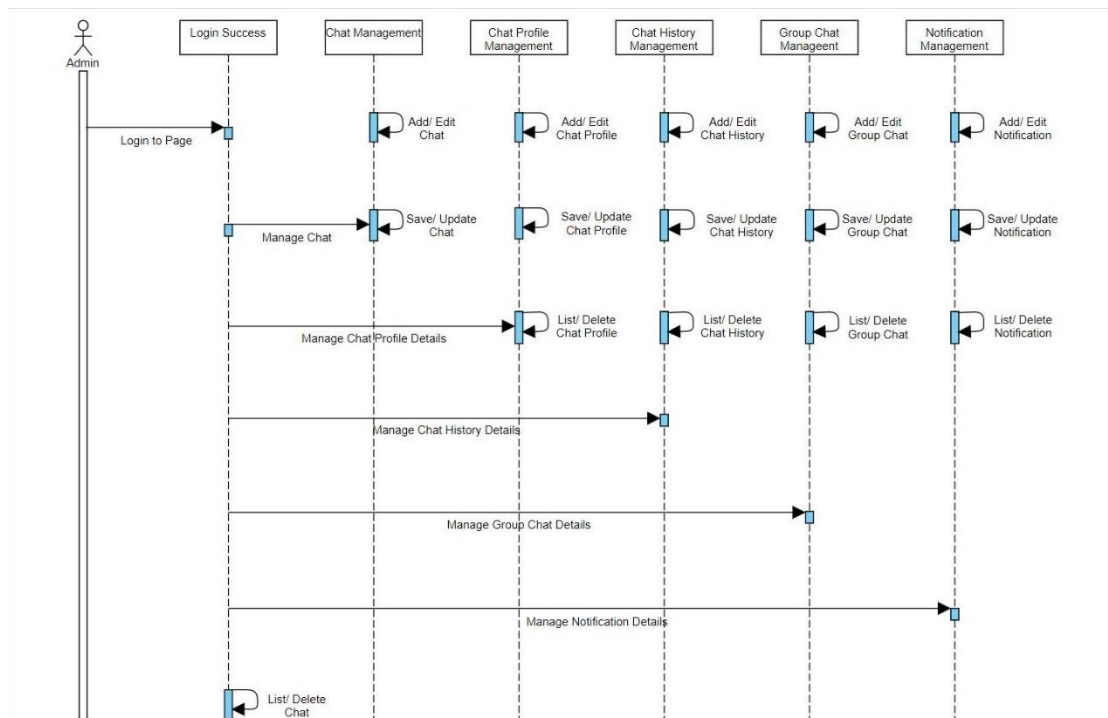


Figure 13 Sequence Diagram

4.4. Activity Diagram

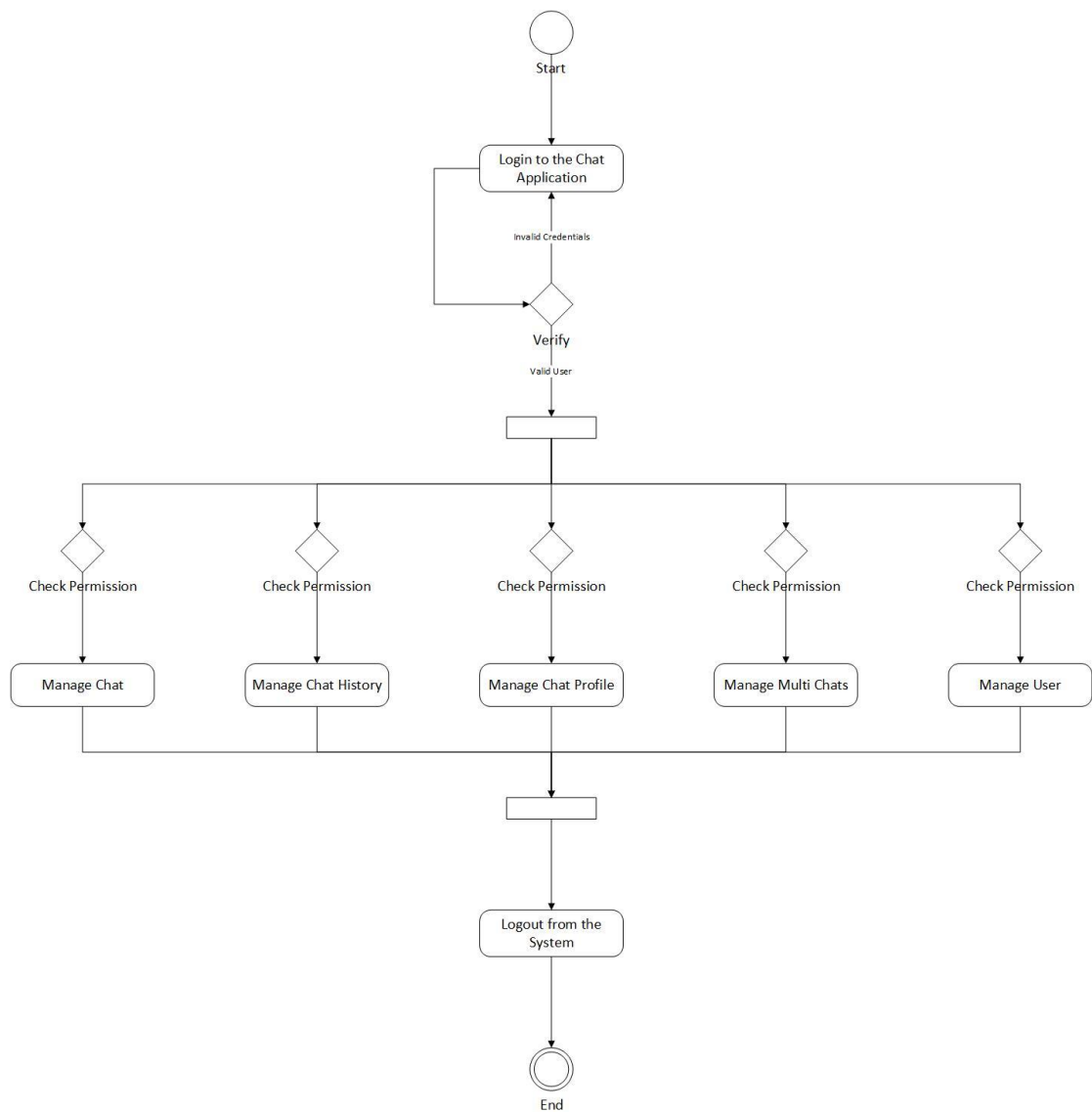


Figure 14 Activity Diagram

4.5. Data Dictionary

Table 1 Logs

Field name	datatype	Field size	Description
Userid	string	10	Currently logged in user
currentChat	number	20	No. of chats going on
Categories_selected	number	20	No. of categories selected till now

Table 2 Categories

Field name	Datatype	Field size	Description
Category_id	string	10	Unique id for each document
Name	string	10	Category name
isDeleted	boolean		Category delete

Table 3 QnA

Field name	Datatype	Field size	Description
qnaid	string	10	Unique qna id
questions	string	20	Question asked by the user
answers	string	20	Answer responded to user
isDeleted	boolean		QnA deleted

Table 4 Intent

Fieldname	Datatype	Field size	Description
intentid	string	10	unique intent id
name	string	20	intent name
isDeleted	boolean		is intent deleted
addedBy	string	10	user id
entryid	string	10	entry id

Table 5 Entity

Field name	Datatype	Field size	Description
entity_id	string	10	unique entity id
name	string	20	entity name
isDeleted	boolean		is entity deleted

4.6. Algorithm Flow

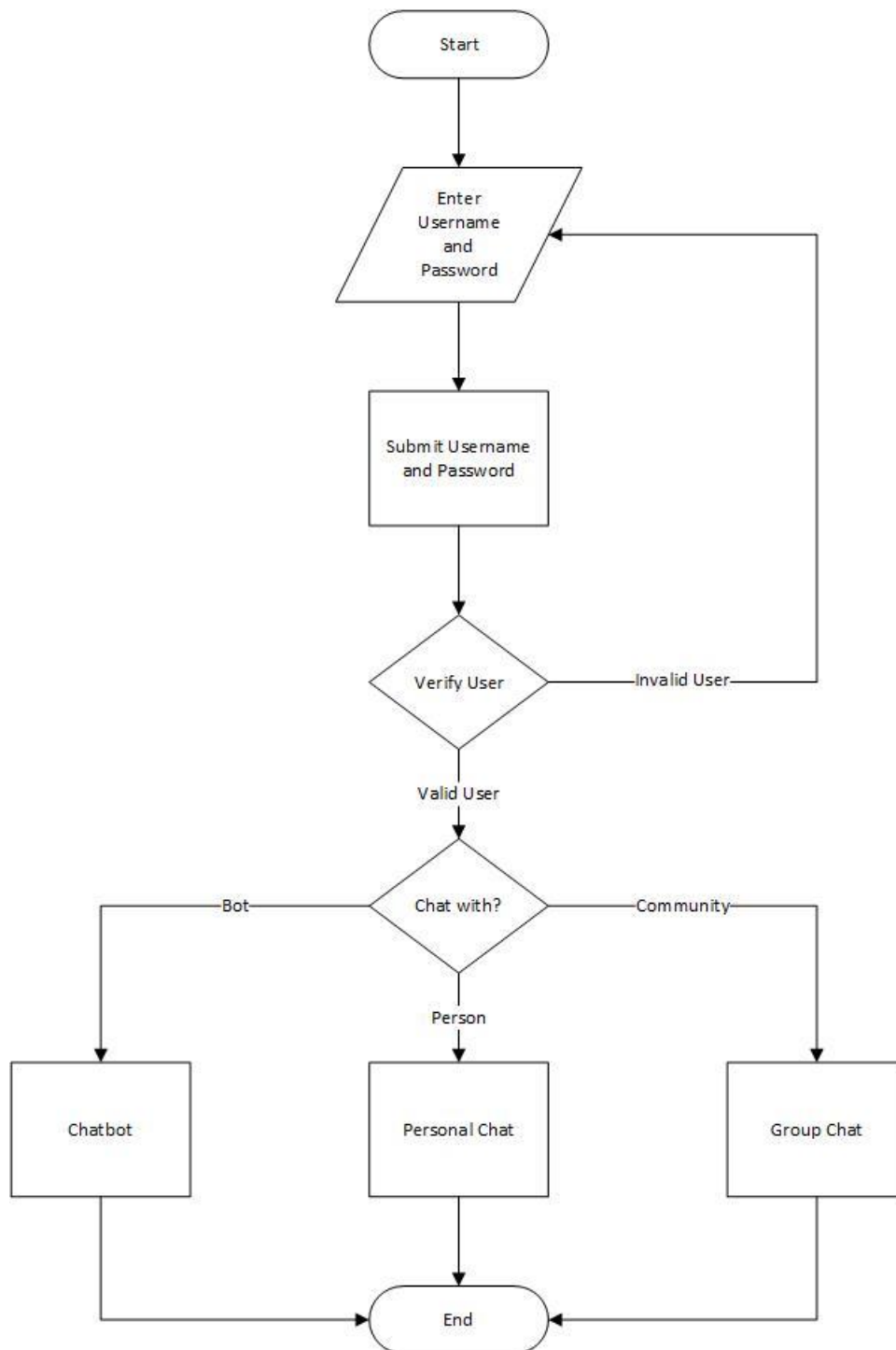


Figure 15 Algorithm Flow

5. Canvas

5.1. Empathy Mapping Canvas

Here we are going to explain users, stack holders and activity. And here storyboarding is in canvas which has 2 stories, one of the happy and another one is sad. So, the features of empathy canvas are below.

Empathy Mapping Canvas	
Design For	Design By
	ARSHAD MUTHALIF MURHAMADTAHA DARUWALA
Date 04-10-2019	Version 1.0
USER EMPLOYEES BUSINESS FREEDOM STUDENT	STAKEHOLDERS COMPANIES COLLEGE
ACTIVITIES Email Support Log In Sign Up CHATTING	
STORY BOARDING HAPPY AN ECCENTRICIST AND INTROVERTED PERSON ONCE SUFFERED FROM HEARTBREAK. HE HEARD AS A WORD OF MOUTH ABOUT OUR APPLICATION. AFTER USING POSITIVE FEEDBACK WAS RECEIVED.	
HAPPY EXTROVERTED AND PERSON WHO HIGHLY FREQUENTLY SHARED GRIEF STORY TO FEW OF HIS FRIENDS BUT UNLUCKILY NOONE TO UNDERSTAND HIM WERE ABLE TO USE OUR APPLICATION AND LOCKELY RECEIVED POSITIVE FEEDBACK.	
SAD ANGRY/INDIGENT USER WHO WAS IN NEED OF THIS APPLICATION DIDNOT HAVE INTERNET CONNECTION WHICH LEAD TO SUFFER HIS SITUATION EVEN BEING AWARE ABOUT APPLICATION.	
SAD A VENDOR WHO KNOWS ONLY HIS MOTHER TONGUE WAS UNABLE TO TAKE THE ADVANTAGE OF THIS APPLICATION.	

Figure 16 Empathy Mapping Canvas

5.2. AEIOU Canvas

There are five points that are important in an AEIOU canvas. It is shown in the following figure,

A – Activity

E – Empathy

I – Interaction

O – Object

U – User

AEIOU Summary :		Group ID 67294	Date 04-10-2019	Version 1.0
		Domain name De-STRESS SERVICE APPLICATION / REINCARNATION		
Environment : <div>COLLEGE</div> <div>RAILWAY STATION</div> <div>HOME</div> <div>SPORTS COMPLEX</div> <div>HOTEL</div>	Interactions : <div>USER-BOT CHAT</div> <div>BOT-GROUP CHAT</div> <div>PERSON-PERSON CHAT</div>	Objects : <div>MOBILE</div> <div>LAPTOP</div>		
Activities : <div>EMAIL ANSWERING</div> <div>Sign Up</div> <div>Log In</div> <div>CHATTING</div>		Users : <div>BUSINESSMAN</div> <div>STUDENT</div> <div>DOCTORS</div> <div>TEACHERS</div> <div>VENDORS</div> <div>POLICEMAN</div> <div>EMPLOYEES</div> <div>PARENTS</div>		

Figure 17 AEIOU Canvas

5.3. Ideation Canvas

We have described the activities of people and their situations where they may face problems. This canvas is helpful to reach our goal. This canvas helped us to know the areas which are needed to be focused on. There are 4 points we know:

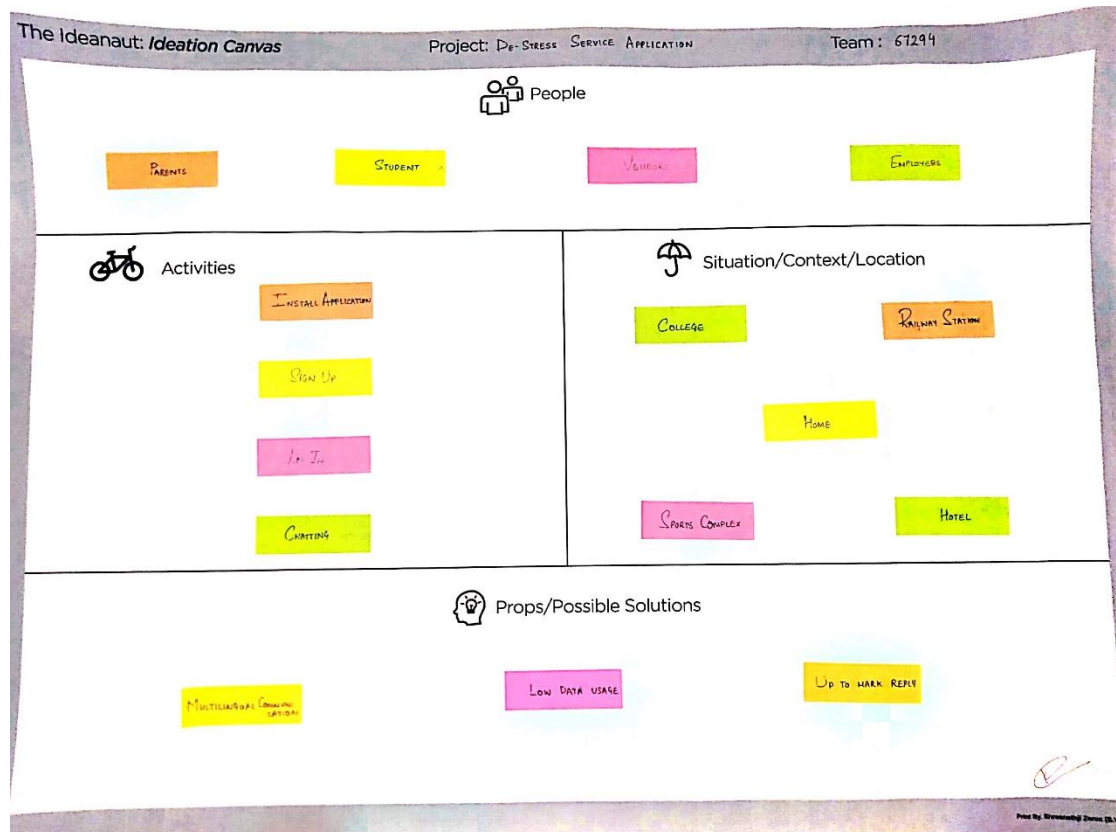


Figure 18 Ideation Canvas

5.4. Product Development Canvas

This canvas helps us to understand the purpose, product experiences and product functions of our project.

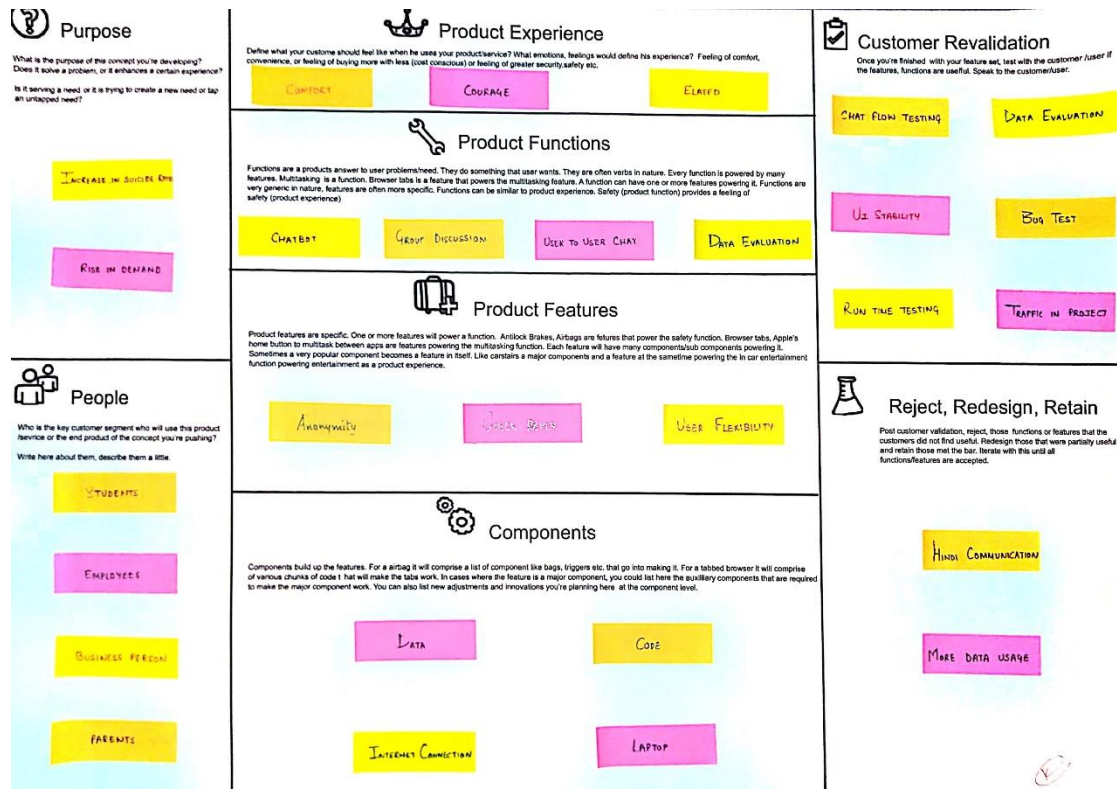


Figure 19 Product Development Canvas

5.5. Business Model Canvas

The Business Model Canvas is used to validate the market significance of products and services, taken up for the project in this case. Technology projects are often solutions or processes that solve a technical problem.

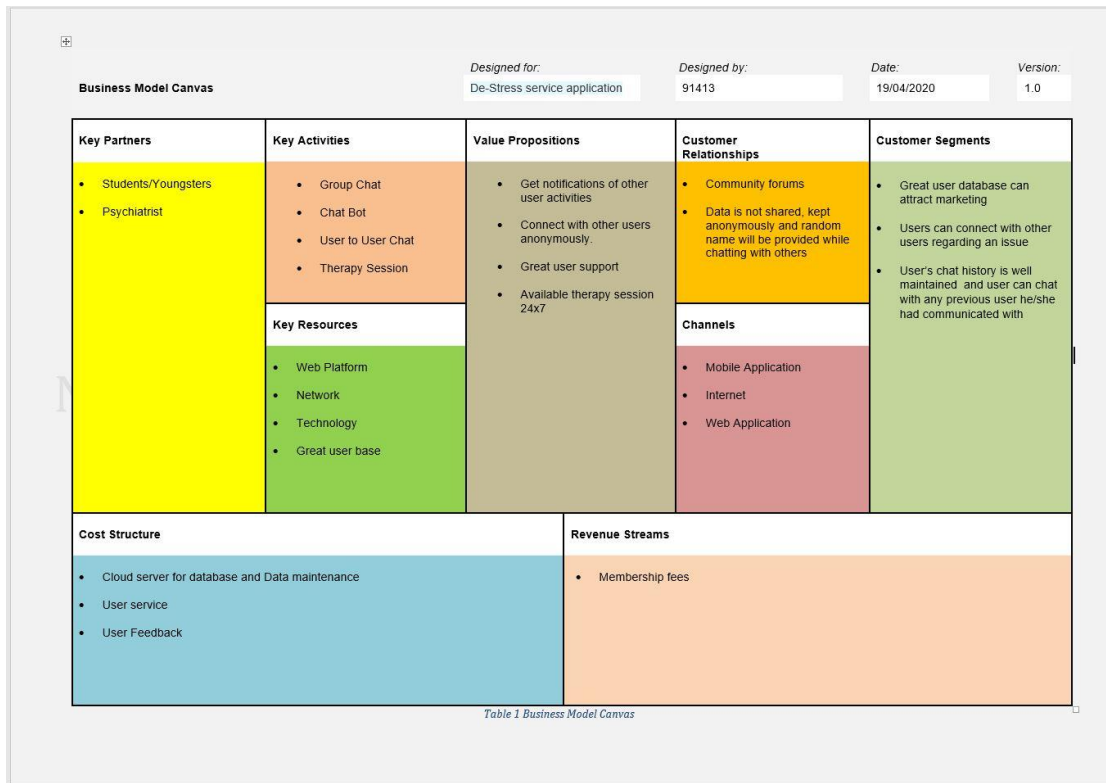


Figure 20 Business Model Canvas

6. Development

6.1. User Interface

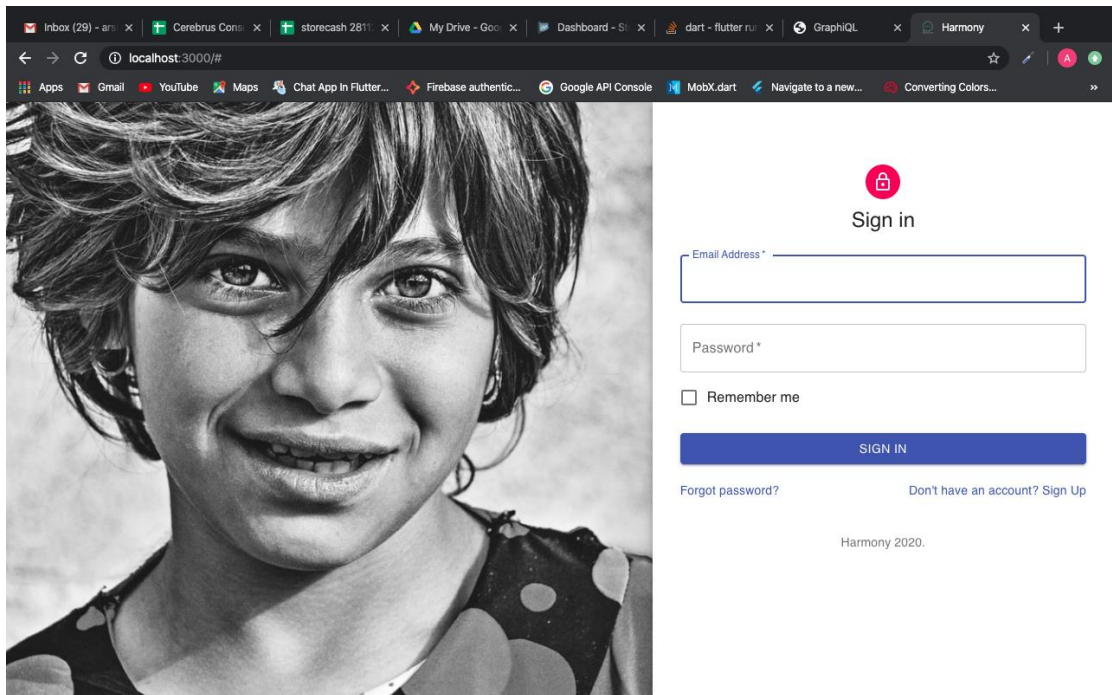


Figure 21 Login Screen

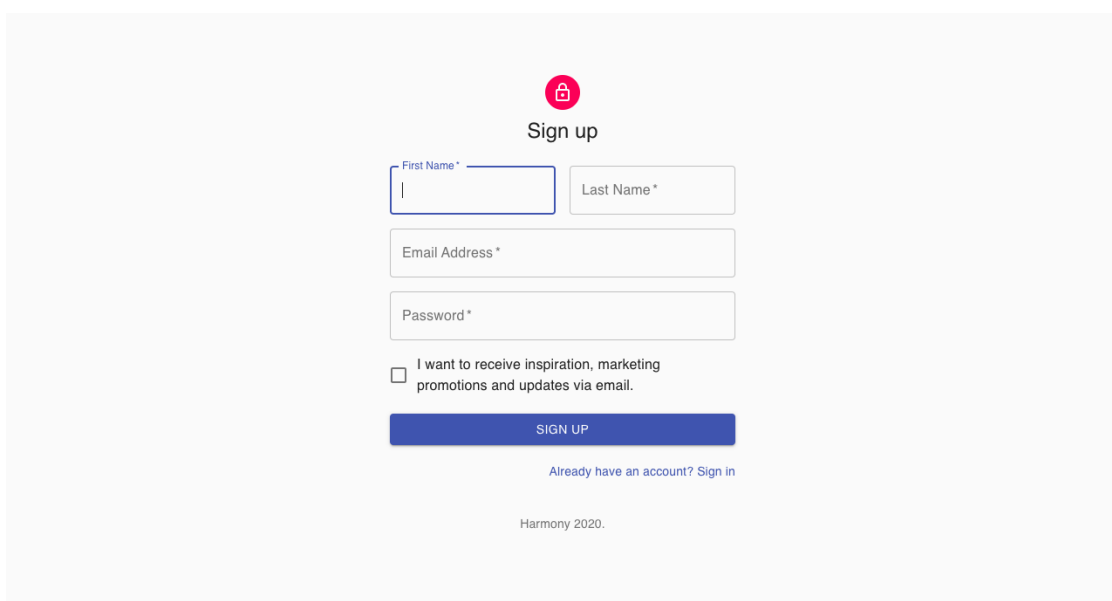


Figure 22 Signup Screen

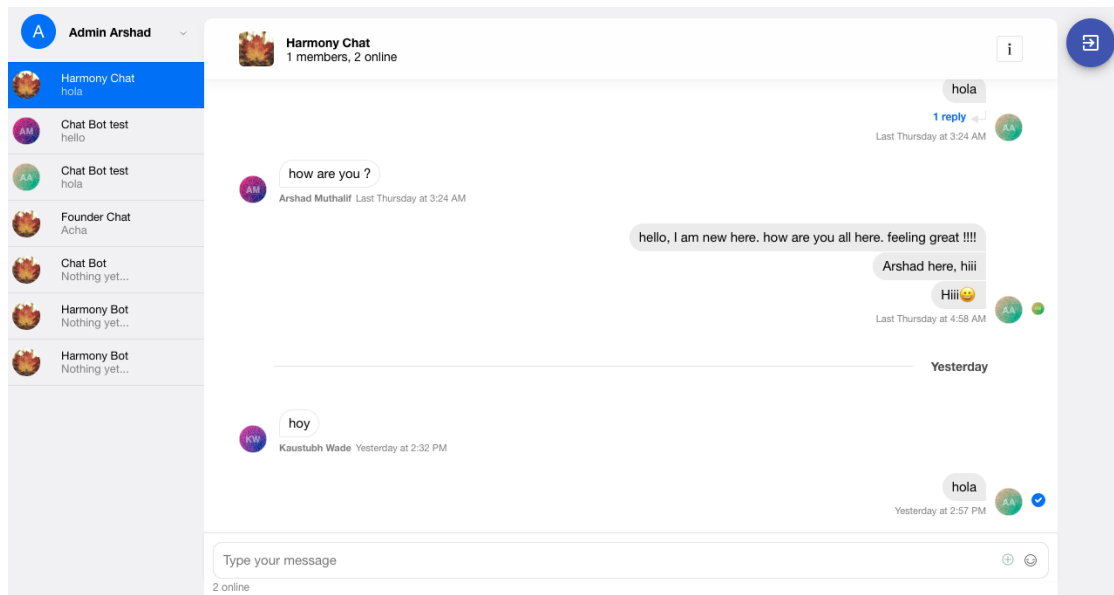


Figure 23 Chat Interface

7. Future Enhancements

- More functions will be added depending upon the user requirements and specifications.
- We will require to update the system.
- Increase performance.
- Voice Chat: It will help in enhancing the communication via calling.
- Video Chat: It will enhance communication via Video call.

8. Plagiarism Report



PLAGIARISM SCAN REPORT

Words 999 Date October 10,2019

Characters 6025 Exclude Url

9%	91%	5	52
Plagiarism	Unique	Plagiarized Sentences	Unique Sentences

Content Checked For Plagiarism

The objective of our project is to help emotionally unstable youth and adults by chatting with bot or community anonymously. To make this possible we are using NLP (natural language processing) by which the cognitive state of user is updated. Henceforth, appropriate response to user is sent and received instantly until and unless any one of the node requests for disconnection. Feedback form is filled by the user if any further improvement of service is required and is enhanced according to the user's feedback.

1.3. Need for the new System

- o Poorly Designed Websites. Any website's primary goal is that the user should be able to navigate the page easily. But these websites are not so easy to navigate. The looks and feel of any website should reflect its motive and mood to the users. Some of the sites are not using the correct colour scheme like using dark colours which represent sadness instead of bright colours which reflect happiness.
- o Less Skillful volunteers. There are some cases where the volunteer is not been able to understand the user or even left in between the conversation without any notice, the user is stuck in this situation and can get frustrated. The selection of volunteers should be maintained with proper guidelines and qualifications.
- o Availability on different platforms. Some sites like woebot.io are only available on App Store and Google Play. Some users might not be able to use these services because of that.
- o Bad Chatbots The chatbots are not well trained, they might get confused or give inappropriate reply while chatting to the users.

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1.4. Objective of the new System

- o Easy to understand and navigate. Proper design should be implemented so that the user is not wasting time in navigating the site. Proper colour coding should be done on each and every element of the web page.
- o Experienced Listeners. There should be some minimum qualifications or criteria for a person to be able to volunteer on these websites.
- o Active Community. Apart from the volunteers, the users should maintain good practices of conducting various games or challenges online to create a healthy atmosphere for the users.
- o Cross Platform. These services should be available on all possible platforms.

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1.5. Problem Definition We want all the people specially the teenagers to live a depression free life where every-one is aware and able to overcome their problems related to mental health. Today we have too many cases of these young generation not been able to cope up with the world only because of lack of emotional support. The parents and close ones are not able to recognize and help these children. We may miss the opportunity to become a fully developed country and can result in a world where no person is happy and had no driving force to move forward in life. These children are the future work force of the country. We will help these children by giving them mental support like therapies and teach them how to face depression and improve thinking capabilities.

Introduction

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o Chatbot Working Users that selects new chat will talk directly with the Chatbot agent. It is based on natural language understanding, speech recognition, speech synthesis, and more, all in one easy to use package.

o Socket Chat It is an end-to-end, build once deploy everywhere development suite for creating conversational interfaces for websites, mobile applications, popular messaging platforms, and IoT devices. We are using it to build interfaces(chatbot) that enable natural and rich interactions between the users and the service.

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1.9. Advantages and Limitations of the proposed System

Advantages

- o The system is available on 3 platforms Google Play Store, Apple App Store and a Website.
- o The system is designed for easy navigation.
- o Colour scheme will be provided to the user as a choice.

Dis-advantages

- o The selection of volunteers is still not guaranteed to succeed in filtering the candidates.
- o Some users may find this design not compatible with them.

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2. Requirement Determination

some users may find this design not compactable with them. De-Stress Service Application 15 2. Requirement Determination & Analysis 2.1. Requirement Determination 2.1.1. Functional Requirements

- o User should be able to change the colour scheme anytime while using the service.
- o All the navigation options should be available to the user home page.
- o Navbar should be aligned to the left of the screen on the website.
- o Navbar should be aligned to the top of the screen in case of mobile application.
- o User should be able to select the type of query while giving a feedback.
- o Mobile application should be light weight and should not consume great amount of resources.
- o Website should not heavily rely on JavaScript as it may lead to slower loading of pages.
- o Only administrators are able to view the Database.

De-Stress Service Application 14 2.1.2. Non-Functional Requirements

- o The website should be capable to handle more than 1000 users without affecting its performance.
- o User should be able to flag a volunteer and even vice versa when the conversation becomes inappropriate.
- o User should be able to get to speak with a volunteer within 2 minutes of the request.

De-Stress Service Application 15 2.1.3. Hardware Requirements

- o Website
- o Windows
- o Windows or Later
- o Intel Pentium Processor or later that's SSE2 capable
- o Mac

Sources	Similarity
<p>What are the benefits of using a Chatbot? - Maruti Techlabs</p> <p>chatbots are being made to ease the pain that the industries are facing today. the purpose of chat bots is to support and scale business teams in their relations with customers. since chatbots are basically virtual robots they never get tired and continue to obey your command.</p> <p>https://marutitech.com/benefits-chatbot/</p>	8%
<p>8 Characteristics All Facebook Messenger Chatbots Should Have</p> <p>using chatbots is a great way to make customer relationship management easier. implementing chatbots frees up time and labor since the chatbot is able to deftly handle a lot of the incoming the purpose of chatbots is to support and scale business teams in their relations with customers.</p> <p>https://smallbiztrends.com/2018/11/good-chatbot-facebook-messenger.html</p>	3%
<p>Dialogflow Google Cloud Natural conversational experiences</p> <p>natural language understanding recognizes a user's intent and extracts prebuilt entities such as time, date, and numbers. phone gateway is based on google's investments in phone connectivity, natural language understanding, speech recognition, speech synthesis, and more, all in one...</p> <p>https://cloud.google.com/dialogflow/</p>	3%

9. Conclusion

No project can be termed in a real sense and there always remains scope for future improvements and so that helps to develop a new version of the software. We are always eager to know some new points and validation related to the project which give us more knowledge and help us to create a new version.

The website has been developed by us and also enhanced the application through applying our knowledge gained in the classroom, referring to certain books, browsing some sites and through the help of internal and external faculties and using our knowledge related to subject it.

We are very thankful to the project guide and the organization staff that extended their support and helped us complete this project successfully.

10. References

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