Mental Health: Forum, Feed and Statistics

Project report submitted in partial fulfillment of the requirements for the degree of

Bachelor of Technology in Computer Science and Engineering

by

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Under Guidance of Prof. Vikas Bajpai



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CERTIFICATE

This is to certify that the project entitled Mental Health: Forum, Feed and Statistics, submitted by Neelesh Singh Rajpurohit (15UCS082), in partial fulfillment of the requirement of degree in Bachelor of Technology (B. Tech), is a bonafide record of work carried out by him at the Department of Computer Science and Engineering, The LNM Institute of Information Technology, Jaipur, (Rajasthan) India, during the academic session 2017-2018 under my supervision and guidance and the same has not been submitted elsewhere for award of any other degree. In my opinion, this thesis is of standard required for the award of the degree of Bachelor of Technology (B. Tech).

Date	-	Adviser: Prof. Vikas Bajpai



Acknowledgments

This project would not have been conceived without the kind support and help of many individuals. I would like to express our deepest gratitude to our supervisor Prof. Vikas Bajpai whose expertise, inspiring ideas, understanding and patience, added considerably to my ongoing B.Tech project experience. This project has helped me in enriching my knowledge and has given me an opportunity to learn new techniques and apply them. I would also like to thank my family and friends who helped me to keep myself motivated during this journey.

Abstract

Mental health comprises of both psychological as well as emotional well-being. It affects the way we feel, think and act. It also affects the way we make choices, relate to others and direct how we handle stress. Mental health is important at each and every stage of our lives. But the society is never ready to openly talk on mental health and related issues. This stigma of mental health diagnosis and treatment is still a big issues for many communities. Today, people openly discuss about their heart disease or a broken leg. But, they keep their mental illness a secret and many times, avoid to seek treatment due to the stigma. With this project, we hope to increase awareness, decrease stigma and connect. The project will be a great help for those who want to interact but are usually afraid to discuss their mental health issues in public. They look for anonymous options to come out and share. But this option is never considered serious in our society. This platform will solve the problem to some extent.

Contents

Cł	napter	Page
1	Introduction	. 1 1 1 2 2
2	Proposed Work 2.1 Project Goals 2.2 Major features of the project 2.3 User levels and Permissions 2.3.1 User 2.3.2 Moderator 2.3.3 Admin 2.4 Documents 2.4.1 Privacy Policy 2.4.2 Moderation Policy 2.5 Technologies Used	. 3 3 3 4 5 5 6 7 7 9
3	Challenges And Their Solutions 3.1 Major Challenges	
4	Psych-Tests and their Implementation	. 15 15 15
5	Demonstration	. 16 16 23
6	Conclusions and Future Work	25
$\mathbf{R}\epsilon$	eferences	26

Introduction

1.1 Area of Work

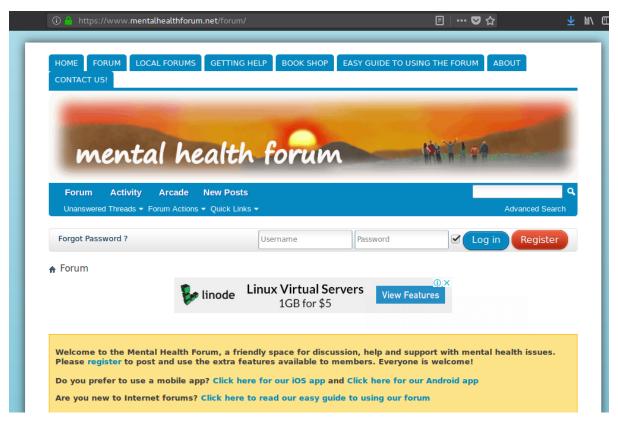
The project will revolve around developing a Web-Application based platform for people to discuss about their mental health with experts online anonymously. The Project will have the foundation of PHP as a back-end part and the front-end will be constructed in HTML5, CSS3, Bootstrap Framework and JS. External APIs will be used for the formulation of Analytics and Graphs. The Database technology preferred will be MySQL.

The Statistics and analysis part will be done on the basis of registered question forms and different weightage will be given to different answers and the algorithm developed during the project development phase will be responsible for the analysis report generation for the users of the system.

1.2 Problem Addressed

Mental health includes our emotional, psychological, and social well-being. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make choices. Mental health is important at every stage of life, from childhood and adolescence through adulthood. But the society never talks about the mental health and issues related to it openly. Many communities struggle with the stigma of mental health diagnosis and treatment. With this project, we hope to increase awareness, decrease stigma and connect those who need them with resources to help.

1.3 Existing Platforms



Link - Mental Health Forum Web Platform

1.4 Problems with Existing Platforms

- No option to **delete account** and opt-out of email notifications.
- Email Address is asked for the account creation, complete **anonymity** is not ensured.
- No **moderation** of comments, posts, or profiles. Any user can be easily offended by the unmoderated comments/posts.
- No option to **report a fake or offensive Post**, profile and comment.
- UI/UX is not user friendly.

Proposed Work

2.1 Project Goals

- To establish a platform for people to discuss about their mental health with experts online anonymously.
- To provide blog/video/articles feed full of motivating and relaxing content to the users.
- To provide insight analysis of mental health through data collected through forms for registered users.

2.2 Major features of the project

- Users will get to know about mental heath and its related myths and facts.
- Users will get a platform to post their stories on the platform anonymously.
- Users are free to create their accounts on the platform to enjoy more services like- feed, chat, profile and statistics etc.
- Account creation is completely anonymous.
- Users are free to update their profile, delete their account, change their account settings and change their privacy settings for their accounts.
- Users can draft, edit, submit for review and delete their stories.
- Users can comment on published stories.
- All the comments will be displayed on the platform only after moderation by the Moderator/Admin.
- The Moderator/Admin can review comments/stories/profiles of users.
- Users can chat with the Admin(Counsellor).

- Admin can send all the users a bulk message to their notification box.
- Users can fill out forms to calculate their happiness scores, mental health scores etc.
- Users can contact the counsellor, can rate a feedback for the platform and can share their view on how they feel about the platform.
- Users can anonymously read all the stories posted on the platform.
- A Contact us page, About us page for the users to reach out to our team.
- Users can report a fake/invalid/inappropriate story/comment/profile by verifying their original identity.
- Admin can access the logs of login and logout data, to keep of track of audience engagement on the platform.
- Admin and Moderators have access to publishing anything(articles/videos) on the news feed of the users.
- System will generate an automated news feed filled with inspiring and motivational content to promote mental wellness.

2.3 User levels and Permissions

There are three user levels for the project:

- User
- Moderator (Selected Help Group Volunteers)
- Admin (counseller)

Now, let's discus the user level permissions in detail.

2.3.1 User

- A normal user has the rights to open a completely anonymous account on this platform. they can also edit his profile name, email, short bio, and profile pic.
- User has the right to edit login-id(username) and password, security question and answer. they can also delete their account. Deleting the account clears all information from the platform including all their information, posts, comments etc.
- User can make the account private/public. A public account is visible on the platform to all other users, and a private account is not visible to the entire user community. Private users and their posts/comments are only visible to the moderators and the admin.
- Users can write a post/story. They can further edit and delete the post anytime. All posts will go through moderation before they get published.
- Users can mark a particular post as private. This will make that post visible only to the moderators and the admin.
- Users can see the public users in the community section and can chat with a particular user. All the chats will be moderated by the moderators.
- Users can use the statistics psych-tests for self evaluation of mental health parameters.
- Users can read the news feed full of motivational content.
- Users can read their notifications and bulk notifications for the admin.
- Users can indulge in a private chat with the counsellor, this chat will be not moderated.

2.3.2 Moderator

- A moderator has some extra rights apart from all those possessed by a normal user, except the account creation part. Moderators cannot create their own accounts. Only admin can create and distribute the moderator accounts among the selected volunteers.
- Moderator can read all the posts that are pending for a review before they get published.
- Moderator can edit the status of a post from 'pending review' to 'published' and vice versa.
- Moderator can read the comments/chats that come for review. He can approve/disapprove any of the comments/chats if they are found offensive.
- Moderators activity will be monitored by the admin.
- Moderators can read the reports/complaints filed by users against other users/posts/comments etc.

2.3.3 Admin

- An Admin has some extra rights apart from all those possessed by a normal user and the moderators.
- Admin can create and manage all the posts/comments/chats irrespective of whether they are private/public.
- Admin can create/edit/delete Moderator accounts for the platform.
- Admin cannot delete their own account.
- Admin can see login-logout activity of the users on the platform just for monitoring the user engagement on the platform.
- Admin can see the overall and individual results for the psych-tests of all the users to monitor their individual mental health. This will allow the admin to communicate with a particular individual if they need help.

2.4 Documents

2.4.1 Privacy Policy

This Privacy Policy governs the manner in which [Website/Platform name] collects, uses, maintains and discloses information collected from users (each, a "User") of the [URL of the platform] website ("Site").

Personal identification information

We may collect personal identification information from Users in a variety of ways, including name and email, but not limited to, when Users visit our site, register on the site, fill out a form, and in connection with other activities, services, features or resources we make available on our Site. Users may visit our Site anonymously. We will collect personal identification information from Users only if they voluntarily submit such information to us. Users can always refuse to supply personally identification information, except that it may prevent them from engaging in certain Site related activities.

Non-personal identification information

We may collect non-personal identification information about Users whenever they interact with our Site. Non-personal identification information may include the browser name, the type of computer and technical information about Users means of connection to our Site, such as the operating system and the Internet service providers utilized and other similar information.

Web browser cookies

Our Site may use "cookies" to enhance User experience. User's web browser places cookies on their hard drive for record-keeping purposes and sometimes to track information about them. User may choose to set their web browser to refuse cookies, or to alert you when cookies are being sent. If they do so, note that some parts of the Site may not function properly.

How we use collected information

[Website/Platform name] may collect and use Users personal information for the following purposes:

- To run and operate our Site
- We may need your information display content on the Site correctly.
- To improve customer service
- Information you provide helps us respond to your customer service requests and support needs more efficiently.
- To personalize user experience
 We may use information in the aggregate to understand how our Users as a group use the services and resources provided on our Site.
- To improve our Site
- We may use feedback you provide to improve our products and services.

- How we protect your information
- We adopt appropriate data collection, storage and processing practices and security measures to
 protect against unauthorized access, alteration, disclosure or destruction of your personal information, username, password and data stored on our Site.

Sharing your personal information

We do not sell, trade, or rent Users personal identification information to others. We may share generic aggregated demographic information not linked to any personal identification information regarding visitors and users with our business partners, trusted affiliates and advertisers for the purposes outlined above.

Third party websites

Users may find advertising or other content on our Site that link to the sites and services of our partners, suppliers, advertisers, sponsors, licensors and other third parties. We do not control the content or links that appear on these sites and are not responsible for the practices employed by websites linked to or from our Site. In addition, these sites or services, including their content and links, may be constantly changing. These sites and services may have their own privacy policies and customer service policies. Browsing and interaction on any other website, including websites which have a link to our Site, is subject to that website's own terms and policies.

Changes to this privacy policy

[Website/Platform name] has the discretion to update this privacy policy at any time. When we do, we will post a notification on the main page of our Site. We encourage Users to frequently check this page for any changes to stay informed about how we are helping to protect the personal information we collect. You acknowledge and agree that it is your responsibility to review this privacy policy periodically and become aware of modifications.

Your acceptance of these terms

By using this Site, you signify your acceptance of this policy. If you do not agree to this policy, please do not use our Site. Your continued use of the Site following the posting of changes to this policy will be deemed your acceptance of those changes.

Contacting us

If you have any questions about this Privacy Policy, the practices of this site, or your dealings with this site, please contact us at [Email Address of Administrator]

This document was last updated on April 21, 2018

2.4.2 Moderation Policy

This Moderation Policy governs the manner in which [Website/Platform name] moderates information like posts/comments collected from users (each, a "User") of the [URL of the platform] website ("Site"). We encourage user participation via open and lively discussions through comments and posts(stories). But the decision to publish those posts/comments remains at the discretion of the moderators/admin of the platform.

We request our users (each, a User) to keep in mind our guidelines while posting stories and comments on this platform. The views expressed by any user/individual is solely their own and not promoted by any of the moderators of this channel.

Post Policy

After submitting your post for publishing, your post goes to the volunteer moderators of this platform to review for things that you might have written against our community rules, specially around things that users are not allowed to discuss here, such as medication names, ways of suicide or self harm, heavy swear words, hate speech against a community/religion/gender/race etc.

Users will be able to check the status of their stories on the stories tab on the dashboard after loggingin to the platform. On an average it can take up to 3-8 hours to review a particular post. If your post is not suited to our community rules, it will be saved as a Draft. You are free to edit the post again and submit for review as many times as you want. It will be published once a moderator decides that it is in accordance with the community rules. You can always contact us offline with any concerns you have about moderation as well.

This is a community where we all look after each member, so if you are worried about something that you see on the forum, please report it. The report post/comment option simply sends your concern to our moderators along with the post/comment. It helps us keeping the environment safe and welcoming for our user community.

Comment Policy

After submitting your comment on any post, your comment goes to the moderators of this platform to review for things that you might have written against our community rules, specially around things that users are not allowed to discuss here, such as medication names, ways of suicide or self harm, heavy swear words, hate speech against a community/religion/gender/race etc.

The following things must be kept in mind while posting comments:

- Respect everyone in the community.
- No external web-links in comments.
- No use of hate speech against any race, religion, sexuality, nationality, sex, etc.
- Keep the discussions cool, respect each others perspectives and thoughts.
- No mentioning of names in comments/posts or usernames. comments with insulting names will be discarded.

- Please write relevant comments on the posts
- Misbehavior against any other user will not be tolerated. most of the users are here to share their story or to seek help or awareness on mental health. we should be respectful and constructive in our comments.
- No Duplicate comments
- No mentioning of contact information or emails and phone numbers. If you need urgent help, feel free to contact us through email/phone given on our contact-us page.
- Moderators are the final judges whenever there is any violation regarding any rule regarding any type of content/comment/post.

This document was last updated on November 16, 2018

2.5 Technologies Used

- PHP is used for the main back-end part. I have chosen PHP as my back-end beacuse of the following reasons-
 - PHP runs on various platforms (Windows, Linux, Unix, Mac OS X, etc.)
 - PHP is compatible with almost all servers used today (Apache, IIS, etc.)
 - PHP supports a wide range of databases
 - PHP is free. Download it from the official PHP resource: www.php.net
 - PHP is easy to learn and runs efficiently on the server side
- MySQLi driver for accessing MySQL Database. MySQL has one major advantage, since it is
 free, it is usually available on shared hosting packages and can be easily set up in a Linux, Unix
 or Windows environment.
- I have used **Model-View** framework for designing my code for this project. Each and every functionality is divided into two parts- a View and a respective Model. All views are related to the HTML Front end that the user interacts with. and the Models are comprising of all the respective database queries and Pure PHP codes.
- Text editor **Sublime**-text-2
- Server used **XAMPP** for Linux 7.2.3 Server. I am working on Linux OS and XAMPP provides me a Apache 2.0 Handler server API, PHP version-7.2.3, and MySQLi version-5.0.12-dev

Challenges And Their Solutions

3.1 Major Challenges

First, let's see what are the major challenges I faced with this project in detail. In the next section, we are going to discuss the solutions proposed for these challenges.

1. Lack of Awareness

Creating Awareness about mental health is the most difficult part. Awareness about mental health and its related issues help in easy identification and early treatment for the individuals. These individuals could be one of our family members, friends, neighbors, colleagues at work or it could be ourselves. Early identification can help our loved one receive appropriate care. As a result, recovery is faster.

Awareness would also eliminate the stigma related with mental health for these people. Stigma refers to the thoughts and views of the community. Stigma shames the mentally ill. Attitude drives the society into a positive or a negative trend. Stigma may disappear if we are aware of their limitations and strengths.

We can consider awareness as a form of education. The more you know, the more power you possess. This power has the potential to cause a positive wave in our society. Awareness is key to understand what mental health is and how people can receive the help they need.

2. Maintaining Anonymity

Mental illness isn't something anyone is proud of. For this reason, the majority of people seeking treatment for mental wellness want to do so with a certain amount of privacy. Many people avoid treatment out of fear of people finding out!

There are trivial factors to consider when it comes to whom to you share your problems. Not everyone in the community can be trusted to keep your personal issues to themselves. Further, the effort to keep things quiet and serious isn't merely to safeguard one's ego, but also an effort at grasping your life together while you're seeking help.

3. Moderation and filtering

The internet is one of the best medium to interact with young people and reduce the stigma associated with mental health. Online support can emancipate young people, aid them in building online friendships, share personal experiences, communicate with others who comprehend, provide emotional support, and most essentially help them feel less alone in the world.

At the same time, it can be used to misuse the platform for hurting someone. There are things that we can't discuss on such a platform, such as methods of suicide/self-harm, heavy swear words etc. It has been found that online forums are regarded more positively when moderated.

4. Building Trust legally

Privacy policy is all about building trust between users and the platform through transparency. A clear privacy policy increases user confidence in using the platform. Brand reputation depends on how you see data privacy and security. Privacy is not just a risk management issue but a competitive advantage today.

3.2 Proposed Solutions

1. Statistical Self-Analysis through Standardized psych-test results (Awareness)

Users will be able to self analyze some of the parameters of mental wellness and they will get detailed reports on those psych-tests. This will help the user get aware of his mental health from time to time. We will discuss more on psych-tests in the next section of this report. Next, by going through the News feed, the user can increase their confidence and positive attitude. News feed will be full of motivating and inspirational content.

2. Proper anonymity of users and strict access rules. (Anonymity)

Anonymity is the most important thing to ensure the safety of users. Data access rules will determine the level of access given to the different user levels. Not every user will have a right to access any other user's data. We have made the platform completely anonymous by not taking any personal information from the user. User can register on the platform by choosing any anonymous user login name and a password. Choosing a security question and answer will be useful while resetting the password of the user account. Users have an option to add their personal information for other users to be able to contact them.

3. Moderation and filtering of posts/comments (Moderation)

All the posts will go for moderation by the moderators. This process will ensure that each and every post/comment is following our content guidelines and community rules. Still, if there is something inappropriate that gets passed through this process, then the users always have the option to report a particular comment/story. Reporting a particular comment/post will bring the

issue to a particular set of moderators for a second review. In this way we can ensure that the platform is safe and welcoming for its users and no community rules are violated. Our main motive is to promote constructive and positive attitude towards mental health and its awareness.

4. Proper documentation of the documents like Privacy Policy and Moderation Policy (Building Trust legally) We have written a clear privacy policy by taking care of all the use cases of the platform and determining the data collected and sharing information. It basically determines how the platform uses/shares/modify the data collected by the users. We have also written a very clear document stating our moderation policy, which explains all the community rules and content publishing policy. It covers all the do's and don't while writing posts and comments. It also describes how users can choose their usernames.

Psych-Tests and their Implementation

4.1 Introduction to Psych-Tests

Psych-tests or Psychological Testing is a way of standardized measurement of sample of behaviour. 'Sample of behaviour' refers to the performance of an individual in tasks that have been prescribed beforehand. The science behind psychological testing is called psychometrics.

These tests have a series of questions in an MCQ format with a limited number of options to each question to choose from. Each option has a different weight assigned to itself for every question. These questions and their responses are then summed up to produce a score. A score on a well-recognized test usually reflects a psychological behavior. Differences in the score usually reflect the individual differences one has on that particular psychological behaviour.

4.2 Project Work

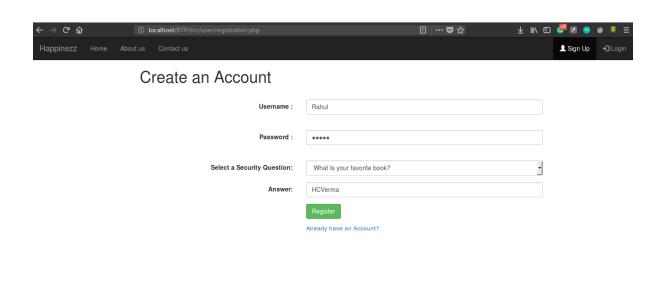
The Project deals with the following points related to psych-tests:

- Increase awareness for Psych-tests among users.
- Develop a web-application test implementation of a dummy psych-test to show how its results can be helpful for users.
- Develop the web Interface for moderators to access the scores of users on the basis of their responses to the tests. This will enable them to understand some mental health metrics about their users on the platform.

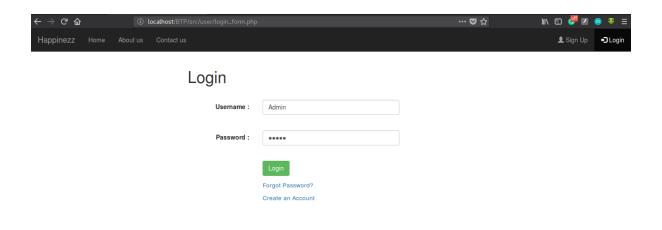
The project uses a dummy psych test for the demonstration of how psych tests can be implemented on a web-application and can be helpful for people in mental health awareness. The dummy test can be replaced by a licensed psych test in future for more realistic results. The project does not aim to create/develop a psych-test to measure any psychological factors. It just aims to increase awareness on psych-tests and their use.

Demonstration

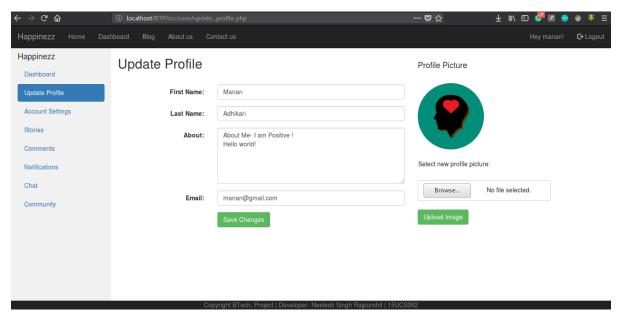
5.1 User Features



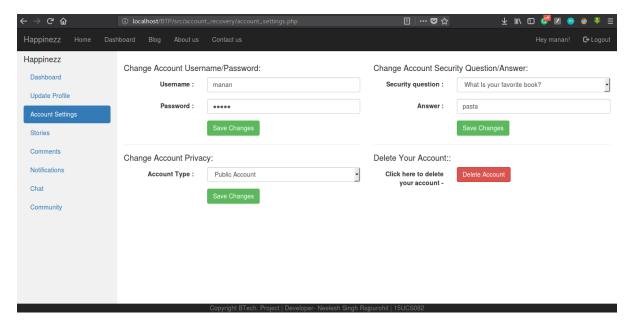
Demo 1: Users are free to create an anonymous user account for this platform. They can choose any login name, password, security question and its answer. This will generate a new account for the user.



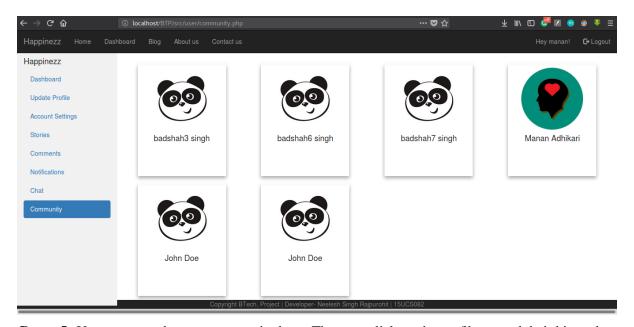
Demo 2: Users can login through the login page. There is an option to change the password with the help of security question/answer in case the user forgets his password.



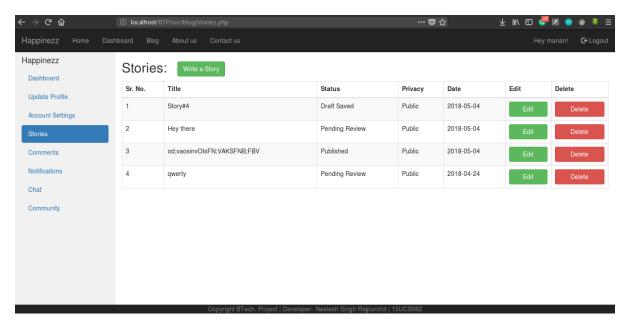
Demo 3: Users can update their basic profile details here. This includes a first-name and last-name they want to be displayed, a profile picture, a short bio and an email(optional).



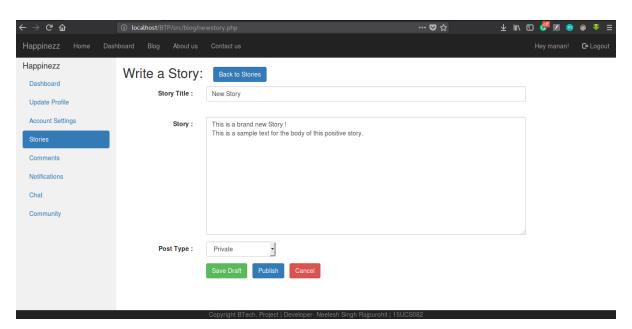
Demo 4: Users can update their account settings here. They can change the user login name and password. They can change the security question and its answer. They can choose to make their account - Public/Private. And an option to delete their account.



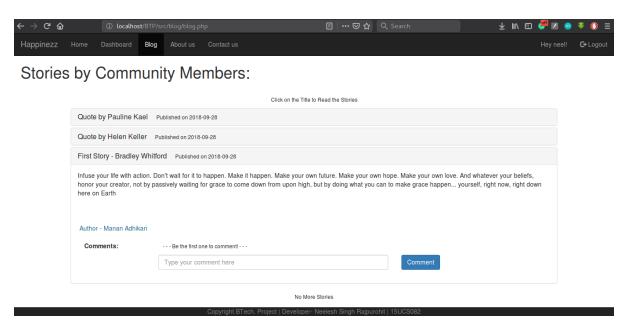
Demo 5: Users can see the user community here. They can click on the profile to read their bio and to chat with them. Only the public user accounts are visible on the community page.



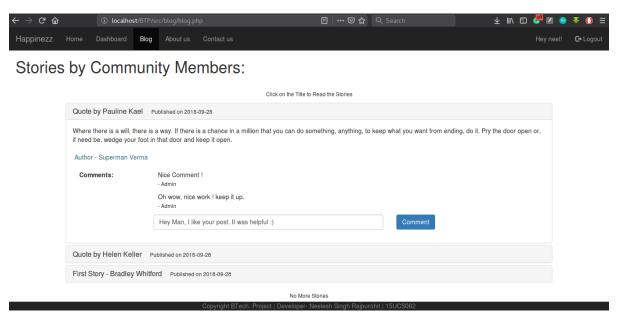
Demo 6: Users can write, read, edit, check status, and delete their stories. They can completely manage the stories from this section.



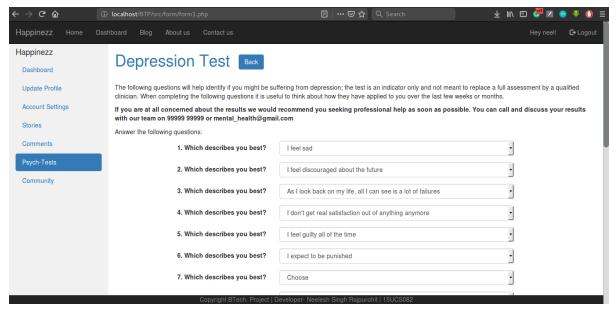
Demo 7: Users can write a new story from here. They can write a title and body of the story. They can choose the story to be Public/Private. Also, they have an option to save the story as a Draft or to send the story for pending review, after which it can get published.

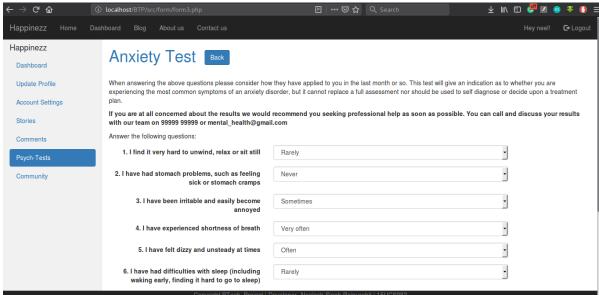


Demo 8: Users can read story from here. They can read the title, body and author's username related the story. The stories reviewed by moderators are published here. Only public stories can be read by other users, while private marked stories can be read by its author and the moderators.

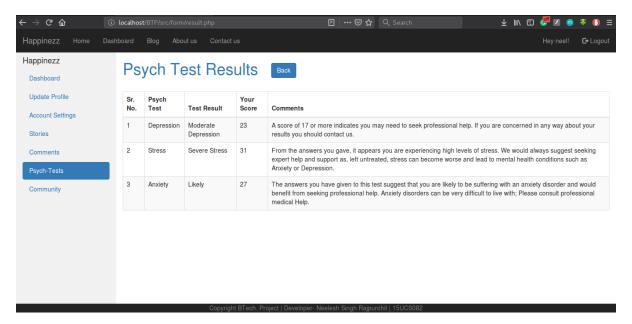


Demo 9: Users can submit a comment on any of the public marked posts from here. Every post has an option to submit comments. These comments get moderated before they get published.



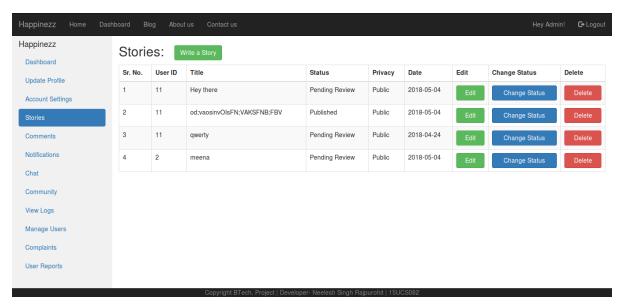


Demo 10: Users can use the psych-tests to calculate their score and to get to know more about their personality and mental health. These psych tests have MCQ questions to be marked by the user.

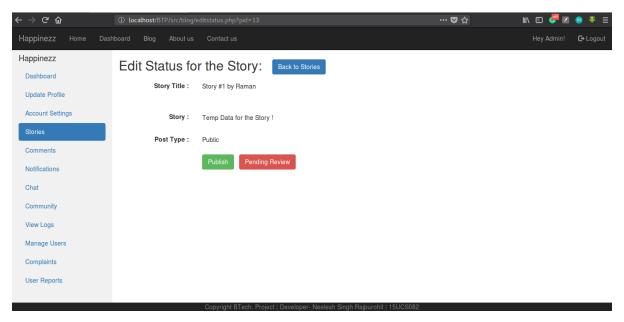


Demo 11: Users can check their results for their submitted response to the psych-tests. These results also show the recommendations according to the score of the user in each of the tests. Users can attempt the test again, and can see their updated score.

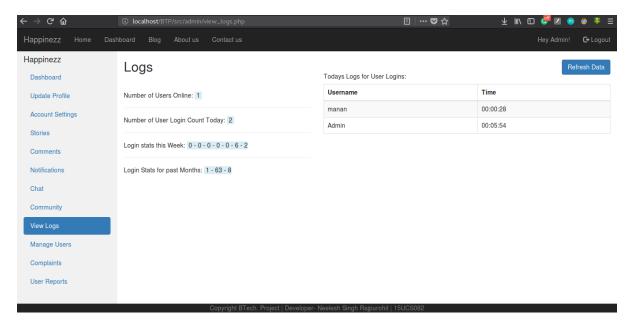
5.2 Moderator/Admin features



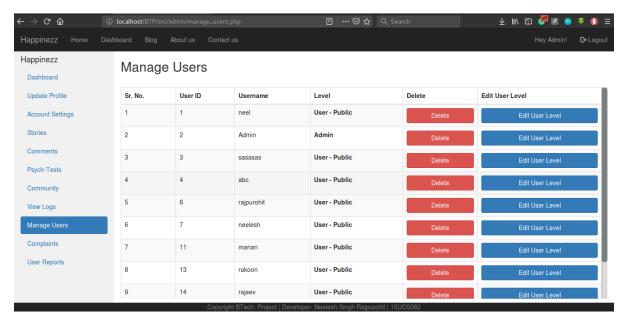
Demo 12: Admin and Moderators see an extra option for changing the status of the story that is submitted for pending review or it is already published.



Demo 13: Moderators can change the status of the post. They can publish a particular post which is pending review or they can mark a published post as pending review if there is some issue with the story.



Demo 14: Only the Admin can see the user's login activies in a brief detailed report. The admin can check about the no. of users online, user logins today, user logins in the past week. user logins in past 3 months, a table of users who have logged in today, with the time of login.



Demo 15: Admin can manage the list of users from this option. Here the admin can delete a particular user if their activities are against the community rules. Also, here admin can promote a user to moderator if his activities are as per the community rules and is a worthy candidate for the role.

Conclusions and Future Work

Project comprises of all the required features to get rolling for serving clients. It can be customized to suit different needs of the users as it provides scalability of user levels from three to five user levels. Project provides the Admin(Counsellor) the option to look after the mental health of the users active on the platform through the results of the psych-tests. It also provides a platform for users to interact with each other and the moderators in a safe, welcoming and a constructive way. But, there is always room for improvements, so there are a few things that I can suggest in order to make the platform even more secure and useful.

6.1 Scope of further work

Here is a list of some features that can be further added to the current functionalities to increase the area of work.

- 1. Encryption and security of data channels.
- 2. Introduction of new psych-tests and statistical results part.
- 3. Automated Content Filtering.

References

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