

Automated Psychiatrist

DHITI

Project Prototype Presented by:

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Problem Statement

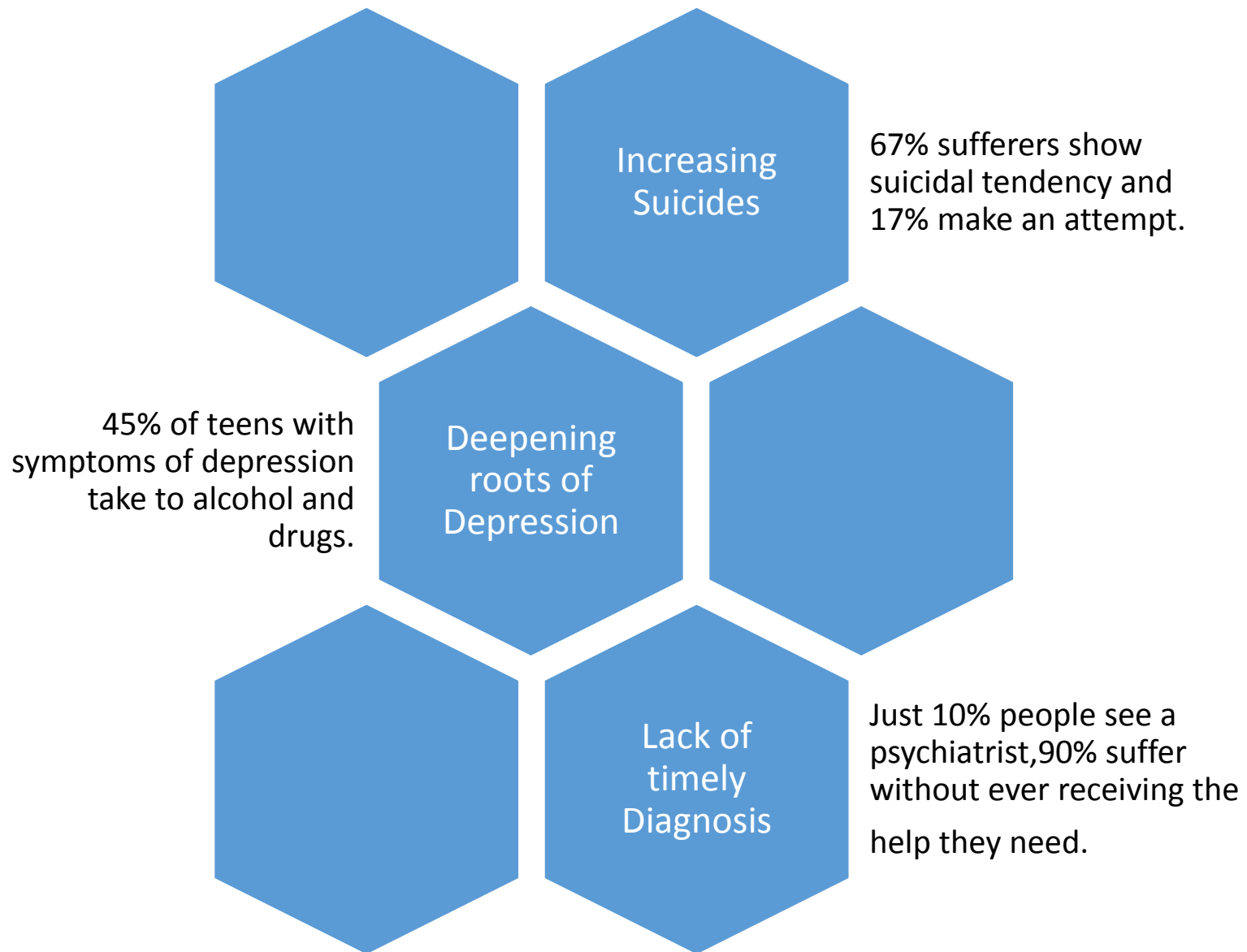
There exists a culture of silence about individual problems.

People suffering from emotional problems usually don't open up easily and hesitate in visiting a psychiatrist.

We need to provide immediate help to the sufferers of psychological problems before they decide to consult a psychiatrist.

This will ensure early detection which is crucial in treatment.

Background



Existing scenario

Shortage of psychiatric help

- The country needs 11,500 psychiatrists but has just 3,500 ^[1].
- Expensive treatment

Bias involved due to human nature.

- Depends upon the mood and availability of the counsellor or psychiatrist

Hesitation in sharing emotional problems

- People want anonymity and tend to suffer silently than seeing a psychiatrist

Proposed Solution:

Mobile can become our Psychiatrist

Almost everyone carries it

- The number of smartphone users is increasing and expected to be about 2 billion

An all-time companion

- Mobiles are already tracking everything about us

What all does our mobile know?

Our location

- Google maps

Our sleeping cycle

- Whatsapp , facebook usage

Our physical health

- Google fit tracking app

Our liking and disliking

- Apps we purchase,
- Games we play,
- Posts we follow on fb and twitter

Our google searches

Architecture

Data Extraction

Taking voice input from the user in response to questionnaire

- Speech to text API

Extracting data from various other sources that mobile knows



Data Analysis

Classifying the response to a particular mood based on the tone of the user's voice and the answers to the set of questions asked.



Diagnosis of Disease

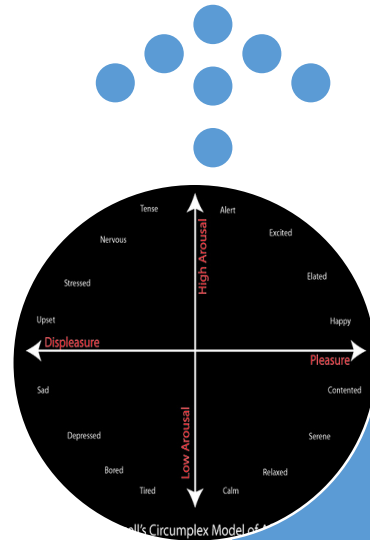
Comparing the different aspects extracted from response to various symptoms of diseases



Remedial Suggestions

Once the problem is diagnosed properly, the solution can be suggested based on consultation with experienced psychiatrists and medical references

What all have we done till now?



Designed and developed
an emotional classifier


that learns the
emotion of the person
based data extracted

Research over diseases to
be tackled

Currently aiming at Psychosis phobia,
neurosis mania and
depression

What all needs to be done?

Diagnosis of more and more diseases based upon their symptoms.



Putting an Artificial Neural Network active learning mechanism in place (Python modules like pybrain are available).



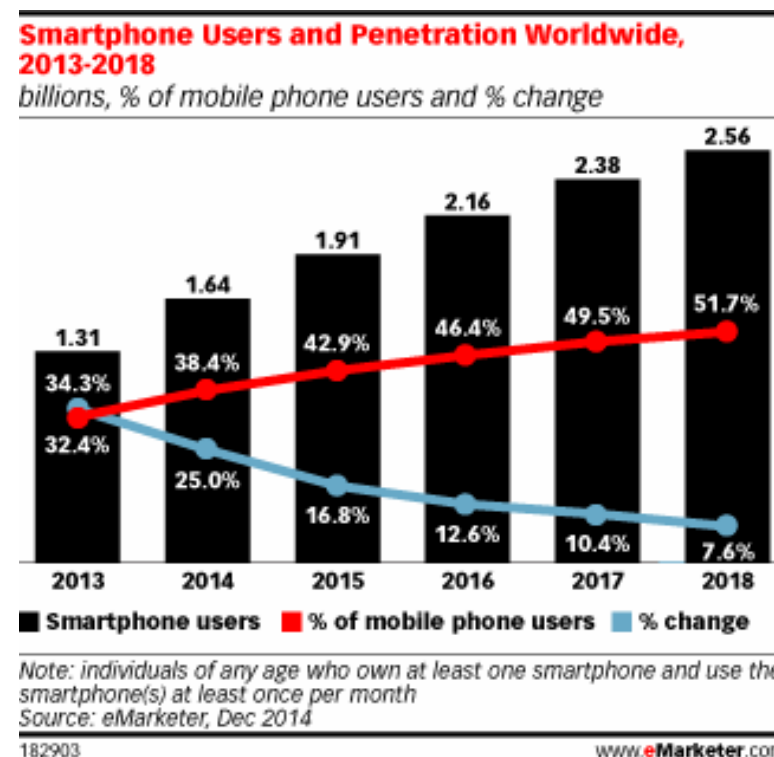
Remedial suggestions and counselling

Cost Effectiveness

- Mobile phones are wide in use and its' cost decrease as per Moore's law.
- Server setup will require an initial cost which will depend upon the number of user and cost of computation
- Human resource requirement will be reduced and even a few professional doctors and psychiatrist can monitor diagnosis of large number patients through this application.

2 Billion Consumers Worldwide to Get Smart(phones) by 2016

Over half of mobile phone users globally will have smartphones in 2018



Usability

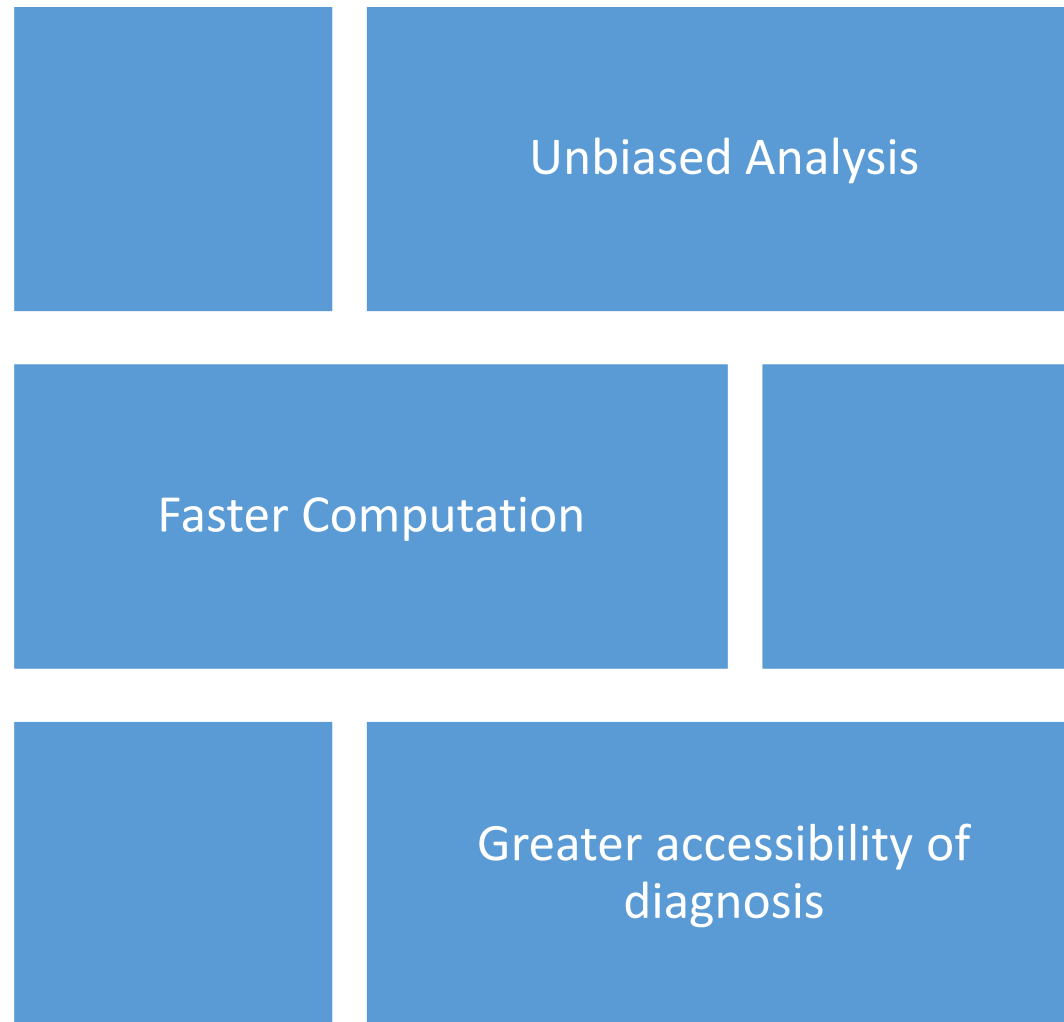
- For first aid diagnosis or primary self-check
- Psychological study of human behavior will help individuals to get over their problems in an affordable and anonymous manner.

Reliability/Durability

Human biased removed

Huge amount of data gathered

How is this better than human involvement?



Huge amount of data

- Unbiased data gathered
- Scope for further analysis: the classification on the basis of various factors:
 - age
 - profession
 - location

Avenues for Further Research

Data Mining

- Data generated by the use of this application can be mined for better understanding of mental health and various factors on which it depends.

Finding nearby Psychiatrist

- By utilizing Map APIs person can be suggested with nearby psychiatrists to visits and also social events to attend based on his psychological problem as social events may help one set his mind straight.

Thank You