

# Depression Analysis based web application



More Common  
than You Think

# 1 in 5 adults

experienced a mental health  
concern in the past year.


In general, having a high level of mental wellness is important on any level (individual or at a workplace) as it directly affects one's emotional state, social perceptions and work productivity.

However, survey results and other media outlets have suggested that many working individuals potentially in need of mental healthcare are not receiving or even seeking appropriate treatments.



# How Do I Maintain Positive Mental Health?





Getting your  
mental health  
checked

Taking necessary  
actions in order to  
develop/maintain  
good mental health

# Project Goals



01

To identify significant factors which influences an individual's choice to seek professional mental care treatment.

02

Click 'Go to recording studio,' where you can choose the video and audio source for your video presentation.

03

Based on factors identified, investigate the likely hurdles which prevent individuals from seeking necessary mental care treatment.

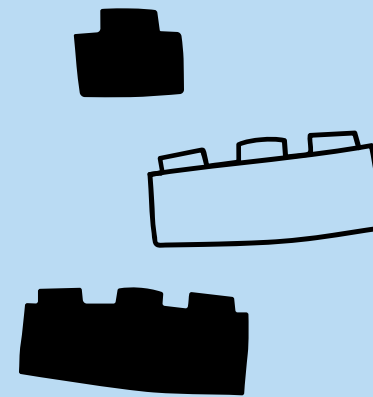
04

Constructive suggestions can then be made to tackle root cause issues to increase uptake of professional mental care treatment by individuals who may require them.

# Predictive analysis model



**Train**



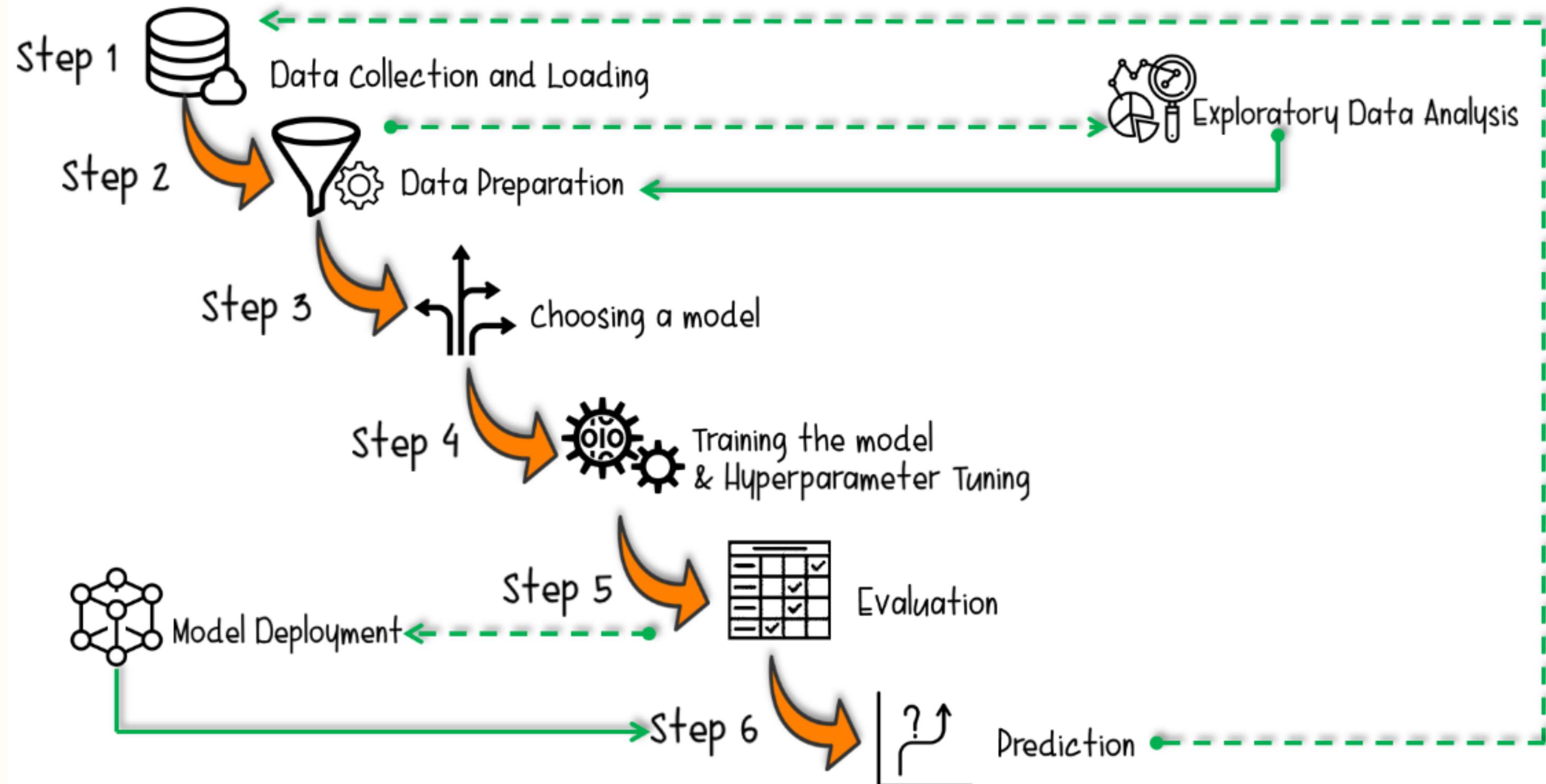
**Build**



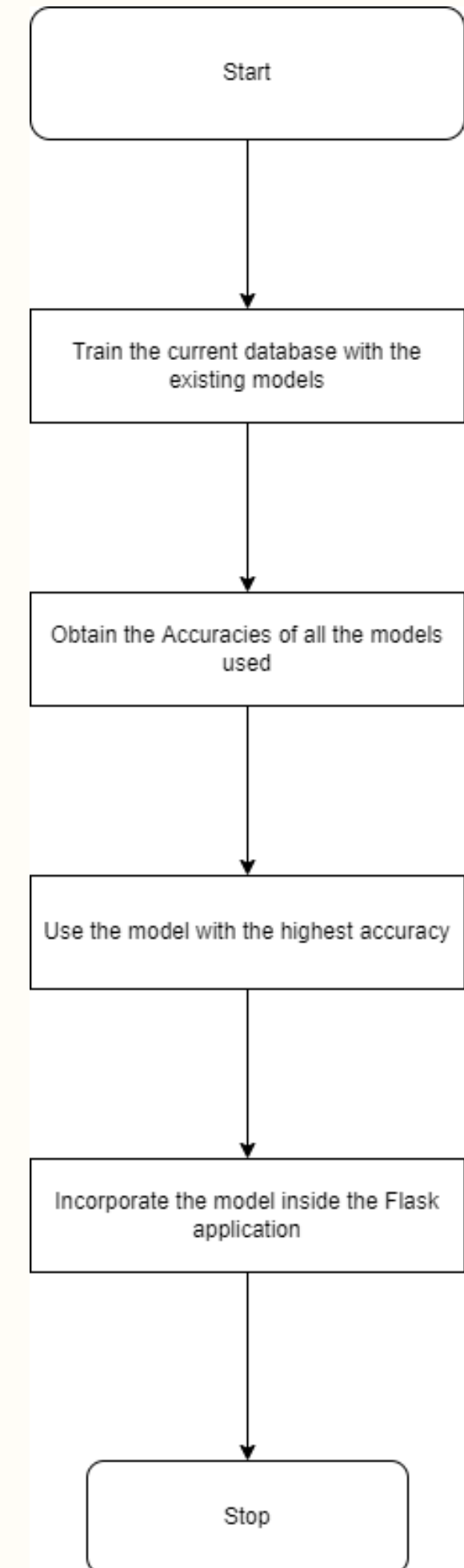
**Deploy**

To profile an individual based on various inputs to determine likelihood of him/her to accept mental healthcare treatment from a professional based on the model's prediction results.

# Machine Learning Workflow

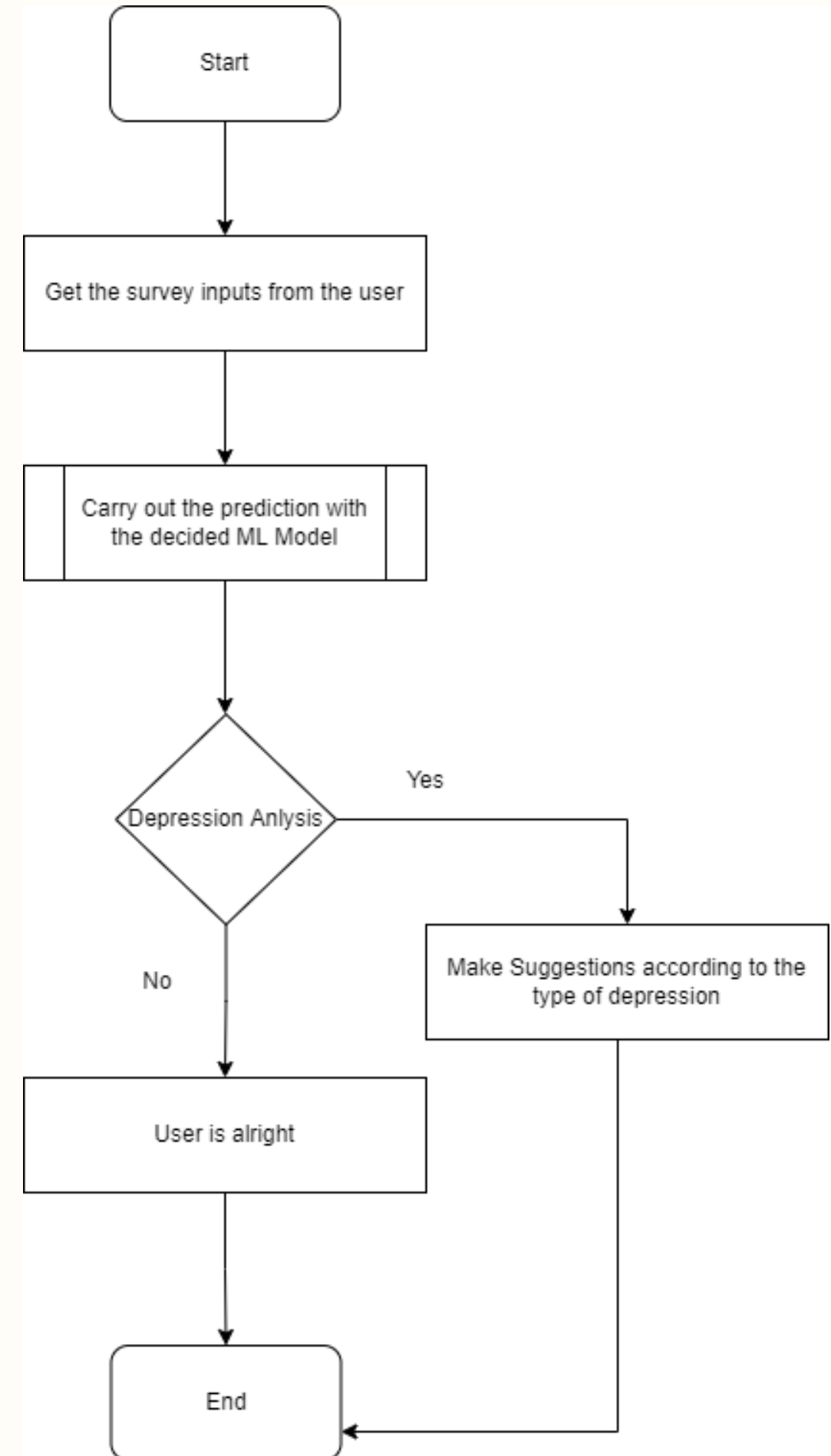


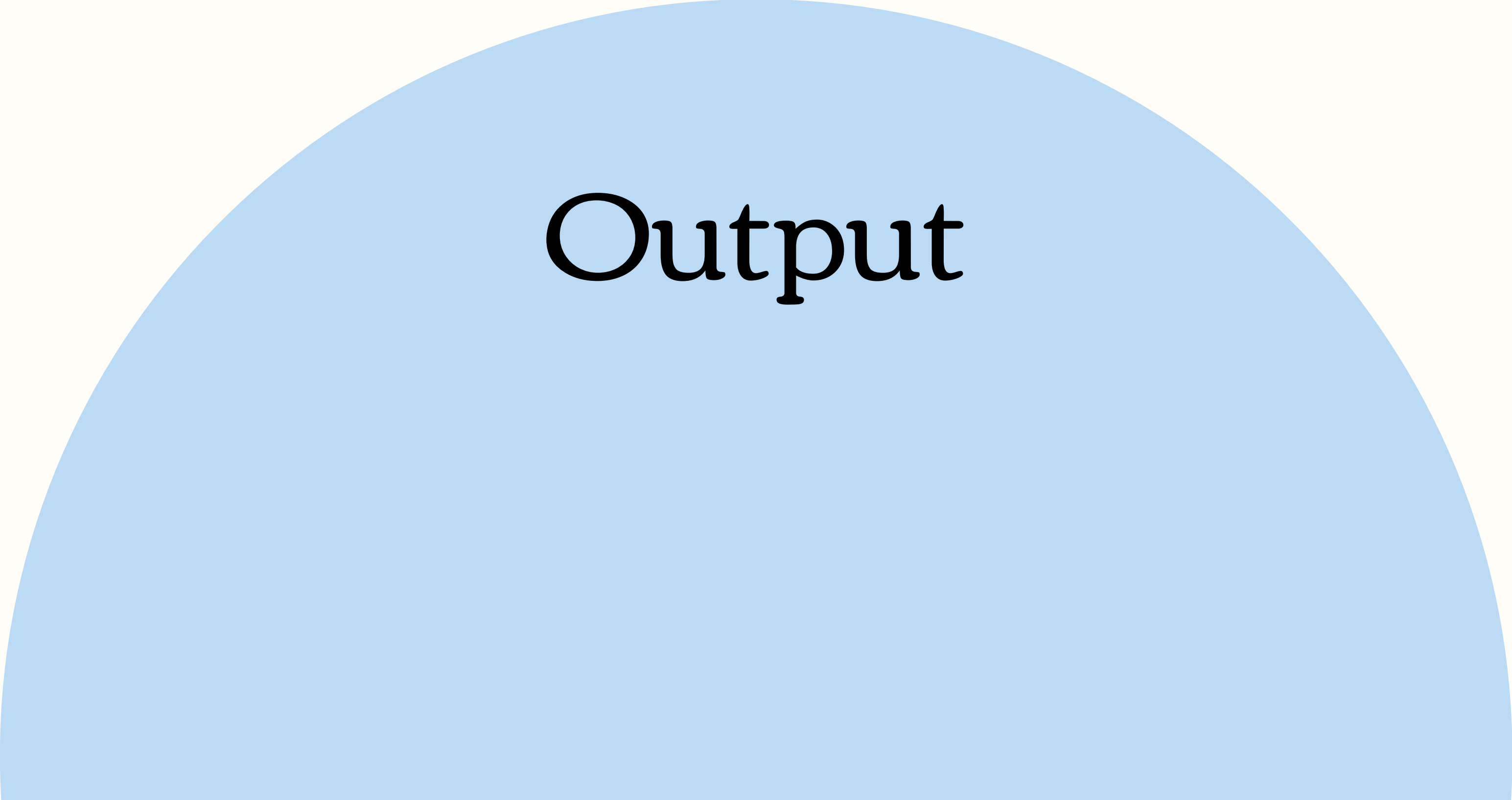
# Inculcating ML model inside Flask Application





# Working of the Application





Output

Summary:

Data was last updated at	2021-01-17 12:54:08
Model was last trained at	2022-10-01 21:27:50

Overview of Latest Data Records:

Year	No. of Records
2018	358
2019	295
2020	154
Total	807

Data Sources from [Open Sourcing Mental Illness \(OSMI\)](#)

1. [OSMI Mental Health in Tech Survey 2018](#)
2. [OSMI Mental Health In Tech Survey 2019](#)
3. [OSMI Mental Health In Tech Survey 2020](#)

Project Name: Likelihood of Seeking Mental Health Treatment

**Project Rationale:** In general, having a high level of mental wellness is important on any level (individual or at a workplace) as it directly affects one's emotional state, social perceptions and work productivity. However, survey results and other media outlets have suggested that many individuals potentially in need of mental healthcare are not receiving or even seeking appropriate treatments. This leads directly to the project goals as stated below.

Project Goals:

Data analysis and exploration:

- To identify significant factors which influences an individual's choice to seek professional mental care treatment.
- Based on factors identified, investigate the likely hurdles which prevent individuals from seeking necessary mental care treatment.
- Constructive suggestions can then be made to tackle root cause issues to increase uptake of professional mental care treatment by individuals who may require them.

Train, Build and Deploy predictive analysis model:

- To profile an individual based on various inputs to determine likelihood of him/her to accept mental healthcare treatment from a professional based on the model's prediction results.

Overview

Data

Train Model

Analysis

Predictive Profiling

Viewing: Latest Dataset

No. of Records: 807

Records: 0 to 17

Select View:

Latest Dataset

Prev12345678910111213141516171819202122232425262728293031Next

no_employees	benefits	care_options	welfare_program	seek_help	anonymity	leave	mental_health_vs_phys_health	supervisor	coworker	phys_health_importance	mental_health_importance	current_disorder	diagnosed_disorder	past_disorder
more_than_1000	Yes	Yes	Yes	Yes	Yes	2	physical	No	No	8	6	Maybe	No	Yes
more_than_1000	Yes	Yes	No	Unsure	Unsure	2	physical	No	No	8	3	Yes	Yes	Yes
6_to_25	Yes	Yes	No	No	Unsure	4	physical	No	No	3	1	No	No	No
6_to_25	No	No	No	No	Unsure	3	physical	No	Maybe	8	8	No	No	No
26_to_100	Yes	Yes	Yes	Yes	Yes	4	same	Yes	Yes	7	5	Yes	Yes	Yes
100_to_500	Yes	Yes	No	Unsure	Unsure	4	same	Yes	Yes	7	8	No	No	Maybe
more_than_1000	Yes	Yes	No	No	Unsure	0	physical	No	Maybe	4	4	Yes	Yes	Maybe
26_to_100	No	No	No	No	Unsure	0	physical	No	Maybe	10	8	Yes	Yes	Yes
more_than_1000	Unsure	No	No	No	No	0	physical	No	No	10	0	Maybe	No	Yes
more_than_1000	Yes	No	No	Yes	Unsure	2	physical	No	No	3	1	Maybe	No	Maybe
more_than_1000	Yes	Yes	Yes	Yes	Unsure	4	physical	Maybe	Maybe	6	3	Yes	Yes	Maybe
500_to_1000	No	No	No	No	Unsure	5	physical	Maybe	No	6	0	Yes	Yes	Yes
more_than_1000	Unsure	No	No	Unsure	Unsure	4	physical	Maybe	Yes	7	6	Maybe	No	Maybe
100_to_500	No	No	No	No	Unsure	3	physical	No	No	6	0	Maybe	No	Yes
6_to_25	Yes	No	No	No	Unsure	2	same	Maybe	Maybe	5	0	Yes	Yes	Yes
26_to_100	Yes	No	No	Yes	Unsure	3	physical	No	No	6	4	Yes	Yes	Yes
more_than_1000	Yes	Yes	Unsure	Unsure	Unsure	0	physical	Maybe	Maybe	10	10	Yes	Yes	Yes

Overview

Data

Train Model

Analysis

Predictive Profiling

Log

>\_ Train Model via API

Download Trained Model

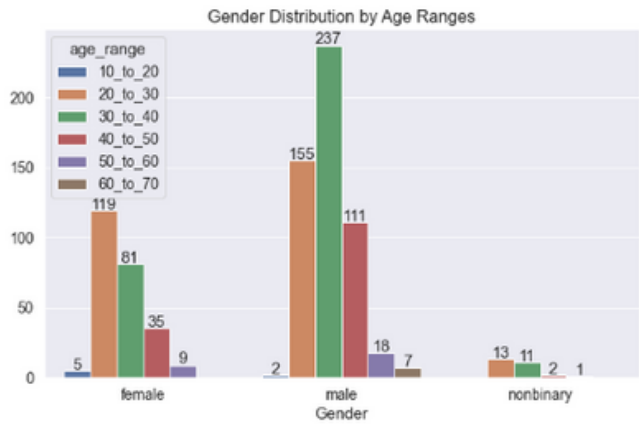
Displaying Latest Training Logs

sn	timestamp	description	classification_accuracy	classification_error	false_positive_rate	precision_score	auc_score	cross_validated_auc_score	time_elapsed
0	2022-10-01 21:24:18.439679	Train Logistic Regression Model	0.8148148148	0.1851851852	0.085106383	0.9333333333	0.8332857347	null	3
1	2022-10-01 21:24:20.126637	Train KNeighbors Classifier Model	0.8271604938	0.1728395062	0.0744680851	0.9421487603	0.845316293	null	34
2	2022-10-01 21:24:51.069635	Train Decision Tree Classifier Model	0.8395061728	0.1604938272	0.1170212766	0.9166666667	0.8475296302	null	49
3	2022-10-01 21:25:06.781907	Train Random Forests Model	0.8189300412	0.1810699588	0.0638297872	0.9487179487	0.8405683279	null	193
4	2022-10-01 21:27:30.206461	Train Bagging Model	0.8395061728	0.1604938272	0.2234042553	0.8618421053	0.8278951878	null	196
5	2022-10-01 21:27:33.314594	Train Boosting Model	0.8189300412	0.1810699588	0.2765957447	0.8343949045	0.8012994431	null	213
6	2022-10-01 21:27:50.495367	Train Stacking Model	0.8189300412	0.1810699588	0.2127659574	0.8620689655	0.8130801085	null	218

Top Correlation Scores

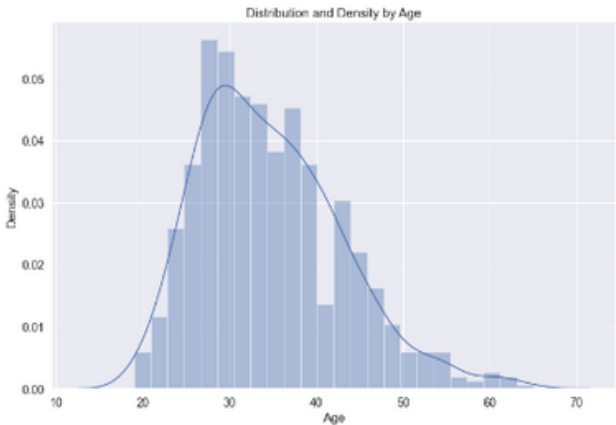
Correlation Score	Feature
1	treatment
0.4911519769704237	work_interfere_non_effective_treatment
0.45748205381634793	diagnosed_disorder
0.44603220059560506	work_interfere_effective_treatment
0.37205239016402397	family_history
0.3685059289227912	current_disorder
0.3214837637679677	past_disorder
0.2481249474263511	care_options
0.20369270501208459	friends_family

Demographics of Survey Respondents



- Since technical industries tend to have a higher male to female ratio the majority of respondents are males

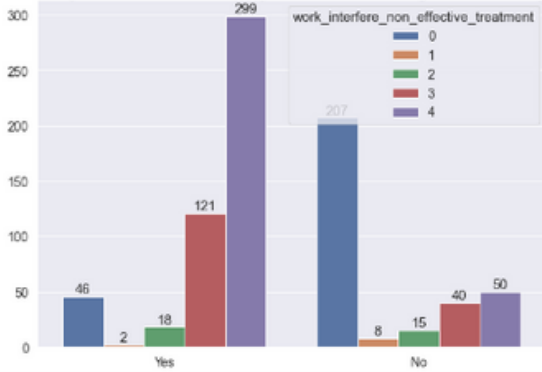
Age Distribution of Survey Respondents



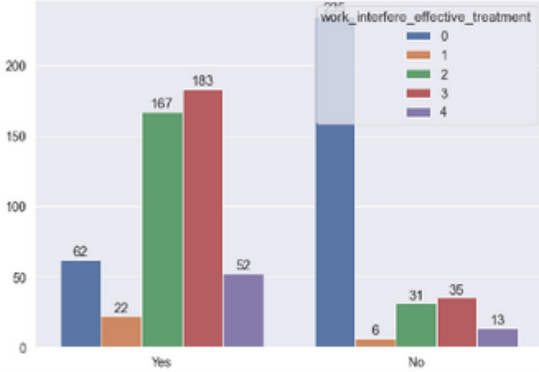
- Most survey respondents are between their late 20s and mid 30s, ages which make up majority of the active labour force
- This coincides with the nature of the survey → investigating mental health at a workplace

Analysis Part I

Work Interference, when NOT treated effectively vs Treatment  
if you have a mental health disorder, how often do you feel that it interferes with your work when not being treated effectively (i.e., when you are experiencing symptoms)?



Work Interference, when treated effectively vs Treatment  
if you have a mental health disorder, how often do you feel that it interferes with your work when being treated effectively?



Overview

Data

Train Model

Analysis

Predictive Profiling

Predictive Profiling

Please proceed to fill in details of an individual to gauge the likelihood that he/she would choose to seek mental healthcare treatment.

Q1. Assuming the individual has a mental health disorder, how often does he/she feel that it interferes with his/her work when not being treated effectively? (i.e. experience symptoms)

Not applicable to him/her

Never

Rarely

Sometimes

Often

Q2. Has the individual ever been diagnosed with a mental health disorder?

Yes

No

Q3. Assuming the individual has a mental health disorder, how often does he/she feel that it interferes with his/her work when being treated effectively?

Not applicable to him/her

Never

Rarely

Sometimes

Often

Q4. Does the individual currently have a mental health disorder?

Yes

Maybe

No

Q5. Does the individual have a family history of mental illness?

Yes

No

Unsure

Q6. Did the individual have a mental health disorder in the past?

Yes

Maybe

No

Q7. Does the individual know of the options for mental health care available under his/her employer health coverage?

Yes

No

Q8. How willing would the individual be to share with his/her friends & family that he/she has a mental illness?

0

1

2

3

4

5

6

7

8

9

10

Predict!

Yes, he/she is likely to seek mental healthcare treatment 1.

Click Here to Look for Remedies

Thank You