**Master of Science in Data Science (DS)**

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**DSCI 6007-01 Distributed and Scalable Engineering**

“**Mental Health at Workplace”**

by

**Group 9**

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Challenge

**How to handle mental health at the workplace**

Mental Health affects mental, psychological, and social well-being. It also affects how we think, feel and act. It also helps us in determining how we handle stress by relating it to others. The impact of mental health on an organization can mean a lot of things: an increase in absent days from work, Decrease in productivity. In the US, approximately 70 percent of adults with depression are in the workforce. Employees with depression will miss a lot of days.

* About 1 in 5 Americans will experience a diagnosable mental disorder in any given year.
* Suicide is the 10th leading cause of death in the U.S.

- Suicide is the second cause of death for people between the ages of 10 and 34.

- The fourth leading cause of death for people aged 35 to 54.

* Mental health conditions are the leading cause of disability in the United States.
* Untreated mental illness costs the nation $105 billion annually.

# Solution

This problem can be solved using Mental Health First Aid. It helps participants to notice and support individuals who are suffering from mental health. It teaches employees communication and support skills which can help people suffering from mental health.

Research shows that employees who used first aid have increased awareness of mental health among themselves and their co-workers. It allows them to recognize the signs of someone who is struggling with mental health and teaches them the skills to when and where to reach out.

Moreover, they conduct an Employee Assistance Program which focuses on mental and physical health. These measures can help create a healthy and productive work environment that reduces the stigma associated with mental illness.

Executive Summary

Data science is becoming more and more common in the healthcare sector as new data sources and analytical techniques are created. There is a great unmet need for mental health services worldwide. Data science can advance our knowledge of mental health problems. Data science may help us better understand and successfully implement therapies for mental health disorders.

In this article, we'll try to grasp the elements that go into a person's mental health. Data from a 2014 poll measuring attitudes toward mental health and the prevalence of mental health issues in the workplace was retrieved and used in this research by Kaggle. This project gives us a systematic understanding of workplace mental health.

# Review of available research

# Since the start of the COVID pandemic, the majority of workplaces around the world have switched to an online model, which increases job pressure and mental stress from juggling work and home responsibilities.

Since many healthcare professionals in mental healthcare settings have stigmatizing beliefs, access to treatment and recovery as well as inadequate physical care for people with mental illness are significantly hampered. Mental healthcare is thus a location of stigmatization. Leaders should support their peers by encouraging them to express their psychological distress in private. The ongoing stigma surrounding mental illness in the medical profession, including self- and interpersonal stigma, frequently discourages professionals from getting care.

It is difficult to evaluate and, ultimately, improve the mental health services targeted at young people due to a lack of information about their operation and efficacy. Manufacturing firms are accountable for more than just creating enough goods and services to make a profit, and their managers are aware that effective management results in higher production. This important objective, however, cannot be accomplished without a dedication to and faith in the mental health of the workforce. As a result, every competent, astute, and resourceful manager has a duty to consider the team members' mental well-being.

Bipolar illness is one of the most prevalent types of depression when compared to all other mental health issues. An adult survey was done regarding mental health, and results were obtained. With this development in medicine and the use of social networks to identify in the field. Using database management techniques like big data, it is vital to combine the clinical variables to make it successful. MongoDB is one of the tools used in this case to manage massive data, extract information, and provide precise results in the effective and affordable treatment of a variety of mental condition issues.

Graphical View of ETL Tools :

Diagram

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Data

Background pattern

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Table

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Exploratory Data Analysis

As the comments column has null values in 70% of the cells, we shall remove it. Also, we will remove the Timestamp field, which indicates the day and time the survey was administered but is unimportant to us. Also, we will remove the state and country columns because the majority of the states are in the US, and all other countries have less participants than the US.

Table

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Tools that we are going to use to solve this problem :

JUPYTER : We use jupyter to load our dataset , train and test the data using machine learning algorithms to predict the accuracy.

We have imported Numpy, Scikit-Learn, Pandas, Matplotlib libraries.

AWS : We use AWS for hosting the web application into a flask server.



Models that we are going to use to solve this problem :

We are going to use Random Forest Classifier,Gradient Boost and AdaBoost Classifier as they are going to give higher accuracy than other models since they are combinations of different models.

# Conclusion

This project is under the supervision of Pro. Dr. Ardiana Sula. This project will be performed in CRISP methodology which has a detailed analysis with the subheadings.

* Business Understanding
* Data Understanding
* Data Preparation
* Modeling
* Evaluation
* Deployment