**A CHATBOT FOR MENTAL HEALTH SUPPORT IN KENYA**

**Introduction**

Mental health disorders such as depression and anxiety affect millions of people worldwide and can have significant impacts on individuals, families, and communities. They can cause physical health problems and have economic costs. Despite this, many people do not receive the treatment they need, with less than half of people with depression and one-third with anxiety receiving treatment. Addressing mental health is critical for overall well-being through increased awareness, reduced stigma, and improved access to care.

## **BUSINESS UNDERSTANDING/**

### PROBLEM

Health experts in Kenya face challenges such as lack of resources, stigma and shortage of trained professionals when addressing mental health issues.In Kenya, there is a significant shortage of mental health professionals. According to the World Health Organization, there are only 0.19 psychiatrists, 0.03 psychologists, and 0.02 social workers per 100,000 people. This is far below the recommended minimum of one mental health worker per 10,000 people.As a result, mental health patients often struggle to access care. The Kenya Ministry of Health estimates that 25% of the population requires mental health services, but less than 10% receive them. Additionally, only 10% of health facilities provide mental health services, and these services are concentrated in urban areas, leaving many rural populations without access to care.

### THE NEED TO DEVELOP A VIRTUAL ASSISTANCE FOR MENTAL HEALTH SUPPORT

Due to the above mentioned problems developing a virtual assistance for mental health support can have significant benefits. With the increasing use of technology, a virtual assistant could provide accessible and convenient support to individuals in need of mental health information and resources.Virtual assistants could provide information on mental health disorders, symptoms, and treatment options, as well as connect individuals with mental health professionals or support groups. They could also offer personalized support, such as reminders to take medication or practice self-care.Moreover, virtual assistants could help reduce the stigma surrounding mental health by providing anonymous and confidential support. Individuals who may feel uncomfortable seeking help in person or over the phone could access mental health information and resources from the comfort of their own homes.Developing a virtual assistant for mental health awareness could also help address the shortage of mental health professionals in many areas. With a virtual assistant, individuals could access support and resources without needing to wait for an appointment with a mental health professional. In conclusion, developing a virtual assistant for mental health support has the potential to improve mental health outcomes by increasing accessibility and reducing stigma.

CLIENT ENGAGEMENT PROCESS

The user engagement process is defined by the following steps which will ensure a user-centered virtual assistant is developed.

1. Defining target audience – This includes identifying the specific group of people who will be using the virtual assistant.
2. Understanding user needs – After defining the target audience, we need to understand their needs and preferences.
3. Define virtual assistant purpose – Based on the user needs we need to define its purpose, what task it will perform.
4. Create a user-friendly virtual assistant – This involves creating a chatbot with a good user interface which will facilitate easy interactions with the user
5. Provide excellent services – The chatbot should be able to perform its task correctly.
6. Continuously improve the virtual assistant – improvements should be done on the assistant in order to meet changing user needs.
7. Measure user engagement – Measuring the engagement helps to determine whether the

system was effective or not.

### OBJECTIVES

1. To develop a user support Virtual Assistant for Mental Health Support
2. To deploy the virtual assistant for the Mental Health Support into a web interface to enhance user experience.
3. To develop online virtual assistance using machine learning which can be able to answer inquiries and user queries quickly and efficiently.

## **DATA ACQUISITION**

## SOURCES OF DATA

To understand the problems regarding mental health, what mental health patients go through and the appropriate responses that can assist them, we corrected data over several channels on the internet. These included blogs and psychological youtube videos. The blogs included those of the World Health Organization, National Institute of Mental Health, Centers for Disease Control and Prevention and researchers conduct studies on mental health to understand the prevalence, causes, and treatment of mental health disorders. We also engaged with our local university counseling teams to help us gain understanding on the same matter.

### DATA ACQUISITION PROCESS

After identifying our data sources, we were able to come up with a process which would enable us to get as much information from the data as possible. We used the Extraction Transformation and Loading (ETL) tool, this is a process used in data acquisition to collect and move data from different sources, transform the data to make it compatible with the destination system, and load the transformed data into the target system. The first step was extracting the data from the text files which were obtained from blogs. We were able to separate useful information which was necessary for training our model from other information. We then transformed the data from text files into a JSON file which was an appropriate data format for our model. The final step was loading the data into our systems for use in training the model.