**ChillPills: Development of a Mental Health Support Chatbot**

**Objective:**  
The project aims to create a mental health support chatbot, *ChillPills*, which integrates meditative techniques and responds to emotional states such as anxiety, stress, and sadness. The chatbot will function as a compassionate tool to provide users with emotional support through conversation and mindfulness practices.

**Step 1: Understanding the Theory of Emotions**

To ensure that *ChillPills* can effectively address and respond to a variety of emotional states, we started by exploring foundational theories of emotions. One of the most influential frameworks for understanding human emotions is the **Theory of Emotions** proposed by Paul Ekman.

**Paul Ekman’s Theory of Emotions**

Paul Ekman, a pioneering psychologist, developed a model based on the idea that certain emotions are universal across human cultures. According to Ekman, these primary emotions are biologically programmed and have adaptive functions that aid in human survival and social interaction. Understanding these emotions and their expressions will allow *ChillPills* to identify and respond appropriately to the emotional states of users.

**Primary Emotions**

Ekman identified a set of **primary emotions** that are universally recognized across cultures. These include:

1. **Anger**
   * **Trigger**: Frustration or perceived injustice.
   * **Response**: Aggressive behavior or fight-or-flight response.
   * **Relevance**: Anger often indicates unmet needs or violated boundaries, requiring acknowledgment and resolution strategies.
2. **Fear**
   * **Trigger**: Threatening or dangerous situations.
   * **Response**: Flight, freeze, or fight response to ensure survival.
   * **Relevance**: Fear helps to protect against harm but can become overwhelming in cases of anxiety.
3. **Sadness**
   * **Trigger**: Loss or unfulfilled goals.
   * **Response**: Withdrawal, reflection, or grieving.
   * **Relevance**: Sadness often leads to introspection and emotional processing, which can be addressed through supportive dialogue.
4. **Joy**
   * **Trigger**: Fulfillment, success, or positive experiences.
   * **Response**: Social bonding, sharing of happiness.
   * **Relevance**: Joy reinforces positive behaviors and social connections, fostering resilience and well-being.
5. **Surprise**
   * **Trigger**: Unexpected or sudden events.
   * **Response**: Shock, followed by adjustment (either fear or joy).
   * **Relevance**: Surprises often require immediate cognitive adjustments, and understanding how to respond can guide emotional regulation.
6. **Disgust**
   * **Trigger**: Exposure to something unpleasant or offensive.
   * **Response**: Rejection or avoidance.
   * **Relevance**: Disgust is often linked to personal or moral boundaries, and addressing it requires empathy and validation.
7. **Contempt**
   * **Trigger**: Moral judgment or perception of inferiority.
   * **Response**: Dismissal or rejection of the person or idea.
   * **Relevance**: Contempt can damage relationships and social cohesion, often requiring dialogue to address underlying issues.

**Secondary Emotions**

In addition to these primary emotions, Ekman noted the presence of **secondary emotions**, which are more complex and often result from the interplay of primary emotions, personal experiences, and social context. Examples include:

* **Anxiety**: Often a combination of fear and sadness, rooted in the anticipation of negative outcomes.
* **Jealousy**: A mixture of fear and anger, related to insecurity about relationships.
* **Shame**: A secondary emotion stemming from an internal conflict between personal standards and perceived social acceptance.
* **Hope**: A positive emotional state linked to aspirations, often involving the anticipation of joy or success.
* **Remorse**: The combination of sadness and guilt, usually following a mistake or moral misstep.

These secondary emotions reflect a deeper emotional complexity and may require nuanced responses that *ChillPills* can be trained to identify and address.

**Step 2: Incorporating Ekman’s Framework into *ChillPills* Chatbot Design**

Given the insights from Ekman’s Theory, the chatbot will be designed to identify and categorize user emotions based on their textual input. By leveraging natural language processing (NLP) techniques and sentiment analysis, *ChillPills* will analyze the sentiment behind each user message to detect primary and secondary emotions.

* **Emotion Detection**: The chatbot will use NLP algorithms to identify keywords and patterns in the user’s input. For example, phrases like “I feel frustrated” or “I can’t take this anymore” would trigger the detection of **anger**, while phrases like “I feel overwhelmed” or “I just want to give up” might indicate **sadness** or **anxiety**.
* **Response Generation**: Based on the detected emotion, the chatbot will provide personalized responses. If a user expresses **anger**, the chatbot may offer calming techniques such as deep breathing or mindfulness practices. For users expressing **sadness** or **anxiety**, the chatbot could suggest meditative techniques or offer empathetic, reassuring responses.

**Step 3: Integrating Meditative Techniques**

To support users through their emotional challenges, *ChillPills* will integrate a range of **meditative techniques** that can help reduce stress, anxiety, and negative emotions:

* **Breathing Exercises**: Guided breathing practices to help calm the nervous system and reduce anxiety.
* **Mindfulness Meditation**: Techniques that encourage present-moment awareness to combat stress and rumination.
* **Progressive Muscle Relaxation**: A method to release physical tension and promote relaxation.
* **Visualization Techniques**: Guided imagery to help users feel more grounded and relaxed.

Each technique will be introduced based on the user’s emotional state, helping to restore balance and emotional well-being.

Immagine che contiene Policromia, cerchio

Descrizione generata automaticamente

<https://atlasofemotions.org/#continents/disgust>

**CHILL PILLS’S FLOW CHART**

Immagine che contiene testo, diagramma, schermata, Piano

Descrizione generata automaticamente

1. **Default Start Flow**:
2. **Personal Information**:  
   The first phase of the process involves gathering personal information. This section is crucial for collecting initial data.
3. **Basic Primary Research**:  
   After obtaining personal information, the primary emotions of the user are collected and examined. These emotions are essential because they provide a direct understanding of the user's initial emotional state and perceived risk.
4. **Advanced Secondary Research**:  
   Next, secondary emotions are explored, which are more complex and reflective emotions that build upon the primary emotions.
5. **Risk Decision (Advice 0 / Advice 1)**:  
   After examining the primary and secondary emotions, a risk assessment is made, which determines the advice to provide to the user:

* **Advice 0 (Low Risk)**: If the risk assessment indicates low perceived risk, appropriate advice is given for low-risk situations.
* **Advice 1 (High Risk)**: If the risk assessment indicates high perceived risk, advice is provided for dealing with high-risk situations.

1. **Confirmation**:  
   After giving the advice, the user's response is checked:

* **Yes**: If the user confirms, the process proceeds to the next phase.
* **No**: If the user does not confirm, the flow returns to a previous phase for further evaluations or modifications.

1. **Something Else**:  
   In this step, the user approaches the end of the session, either accepting the final advice or starting a new session, if necessary.
2. **End Session**:

|  |  |
| --- | --- |
| PRIMARY EMOTION | SECONDARY EMOTION |
| Joy | Hopeful, proud, excited, delighted |
| Fear | Anxious, insicure, inferior, panic |
| Anger | Resentment, hate, envy,, healous, annoyes |
| Sadness | Shame, neglectful, depression, guilty, isolated |
| Surprise | Shocked, dismayed, cofused, perplexed |
| Disgust | Repulsed, revolted, nauseatedm intolerance |