**Our Thesis Work Plan (OLD)**

**Phase 1: Research and Literature Review**

**1. Objectives and Research Questions:**

* **Objective: We aim to achieve this with our thesis. Not Finalized.**
  + Classifying Mental disorders.
  + Based on the prediction provide a stress management solution.
  + Provide a suggestion based on the user scenario.

***Recently After reading a few more papers, we are a bit confused about our purpose.***

* **Research Questions**: Related to stress management, mental wellness, NLP, and HCI.
  + **Not Finalized.**

**Here are some Research questions but we have not finalized them yet.**

1. How can NLP techniques be employed to **analyze textual data from academic communications to identify specific linguistic patterns and categorize mental disorders?** associated with prevalent mental disorders among undergraduate students?
2. To what extent can predictive models, leveraging NLP-derived features such as **sentiment analysis and language patterns, accurately forecast stress levels or mental health conditions among undergraduates**, paving the way for the development of personalized stress management plans?
3. **What is the accuracy and reliability of NLP-based approaches in categorizing mental disorders and predicting stress levels**, and how can these insights inform the creation of tailored stress management plans for individual undergraduate students?
4. **How does the integration of NLP and HCI facilitate the real-time monitoring of students' online interactions**, enabling proactive interventions and personalized recommendations to manage stress and enhance mental well-being among undergraduates?

**2. Literature Review:**

* Relevant Papers on stress management, mental wellness, NLP, and HCI.

**Related Paper Drive Link:** [**Read paper**](https://drive.google.com/drive/folders/13XIOJXTLr_rEaCn-yzAf8nY8OU8Cqe4L?usp=sharing)

* Analyze methodologies, Limitations (gaps in the field), and Future Work possibilities.

**Methodologies, Limitations, and Future Work =** [**Future work and limitation**](https://docs.google.com/document/d/1fn5sKzdz9Pm6CO6Ip9wU3zAqoLuPEAcHP-Ezfzt5b7c/edit?usp=sharing)

**3. Identify Methodologies and Frameworks:**

* Determine methodologies for NLP and HCI to address stress management.
  + **Not Finalized.**
* Explore existing frameworks or develop our implementation process.
  + **Not done yet**

**Phase 2: Data Collection and Analysis**

**1. Design Surveys or Interview questions:** Collect data from undergraduate students in Bangladesh regarding their stress levels, coping mechanisms, and preferences for stress management tools.

* **Survey Form link**: [**https://forms.gle/RLbXRzq9cCmZ65MN9**](https://forms.gle/RLbXRzq9cCmZ65MN9)
* **Survey Qus -** [**Survey Questionnaire**](https://docs.google.com/document/d/15SuEEmiXfPhJs6i-lN2oSx-3uWd-YEWmIpvv6BQNNp4/edit#heading=h.co6sfwj64wqc)

**2. Collect Data:** Conduct surveys with undergraduate students After Ensuring ethical considerations and obtaining necessary approvals for data collection.

* **Dataset Link:** [**Summer2206 | Survey Questions (Responses)**](https://docs.google.com/spreadsheets/d/15iKMbRCOTDDRIufzIYbm-U2TtUaHIJxx5Pa2WPc79mo/edit?usp=sharing)

**3. Analyze Data:** Use appropriate statistical or qualitative analysis techniques to interpret the collected data and Identify patterns, trends, and insights relevant to stress management and mental wellness among undergraduate students.

* + **Not done yet**

**Phase 3: Development and Implementation**

**Build NLP and HCI Solutions:**

* Design HCI interfaces for delivering stress management interventions.
  + **Completed.**
* Develop NLP algorithms or models to analyze and respond to students' stress-related language patterns.
  + **Not done yet**
* **Prototype Testing:** Conduct usability testing with a small group of students to evaluate the effectiveness and user-friendliness of our NLP-HCI prototypes. Gather feedback for iterative improvements.
  + **Not done yet**

**Here are some Related Project Codes we find:**

* ***Mental illness classification and prediction***

1. <https://www.kaggle.com/code/ananyaroy1011/niyamat-mental-analysis-eda-ml>
2. <https://github.com/NazarioR9/BNBR_Challenge>
3. <https://github.com/DereAbdulhameed/Mental-Illness-Prediction>
4. <https://github.com/royal-programmer/Mental-Fitness-Tracker> **(Fitness tracker for prediction)**
5. <https://github.com/srajgure/Mental-Health-Prediction/tree/master>
6. <https://github.com/ShrutiAppiah/MLforMentalHealth>
7. <https://github.com/sumantchirde/Mental-Health-NLP-project>
8. <https://github.com/jainambarbhaya1509/Mental-Health-Classification>

* ***Ai or Chatbot to provide personalized suggestions***

1. <https://github.com/tharoosha/Depresio> (AI-based virtual mental consulting system)
2. <https://github.com/harsuuu/Mental-Health-Chatbot> (Mental health chatbot combining NLP and ML to provide empathetic conversations and personalized suggestions)

**Phase 4: Evaluation and Validation (Do we need this phase?)**

**1. Conduct User Studies:** Deploy our NLP-HCI solutions to undergraduate students. Monitor their usage and gather feedback through surveys.

**2. Evaluate Impact:** Assess the impact of our interventions on students' stress levels, mental wellness, and coping strategies. and Compare outcomes with pre-intervention data to measure effectiveness.

**Phase 5: Documentation and Thesis Writing**

* Write Thesis
* Review and Revise

**Phase 6: Presentation and Defense**

* Prepare Presentation
* Practice Presentation
* Defend Thesis

**Need to Do**

1. Model run —
2. Result —
3. Compare —
4. Writing—
5. Latex —
6. Presentation slide —
7. Poster —