**Rebel Scum Analytical-Project III Proposal**

**Proposal**

**Stage -II**

1. WebApp – Nutrometer
2. Machine Learning Additions:
   * Use Machine Learning to Predict User weight loss over time
   * Identify user diet deficiency. Recommend Food that will improve deficiency
3. Improvements to current app:
   * Need to add data into the app
   * Add field for users to enter weight periodically
   * Include age group
   * Include plotting over time
   * Animated bar graph
   * Slide bar-daily, weekly, monthly
   * Bubble chart graph with size depending on how much of a given nutrient.
   * Migration of database to Heroku or google cloud.
4. Optional Additions if enough time:
   * ML-Recommend which food items go with a specific item
   * Identify which vitamin is absorbed better with a specific nutrient.
   * Identify a food that goes together for optimum nutrient absorption
   * Calcium is absorbed will with vitamin D
   * Provide hospitals with optimum diet for patients.
   * Add a dietary restriction to the user form. Provide recommendations
   * Provide Schools with optimum diet for students.
   * ML 5-year prediction for meal trends
   * ML-Restaurant data-make predications to provide to restaurants on what customers will want.
   * Make prediction for a group of users logged in. based on sample data predictions. User for a school and add meals for their school. Select multiple schools. Have app provide recommendations to include in future meals.

**Project III Requirement**

**Proposal**

1. Must submit a one-page proposal before starting

**Core App**

1. Must use HTML
2. Must use Flask or FastAPI
3. Must use a sci-kit-learn model
4. (May use a database)
5. (May use R to select models, but final models must be in Python)

**Routes**

1. Must have a home route that uses a Jinja template
2. Must have a route that takes in user data and returns a prediction
3. Must have a route that serves a report of how the ML model(s) was selected
4. (May have routes that “collection” data from the user and send it to a database)
5. (May have a route that uses Plotly or D3 for visualization in a Jinja template)
6. (May have a route that accesses, filters, and serves data from the database as a JSON)
7. (May have a route that dynamically filters and displays data to the UI)

**Testing**

1. Use Postman with at least one request for each route

**Deployment**

1. Must be deployed
2. Must use Pipenv

**Repo**

1. The repository must have a properly formatted a README.md
2. Code must be formatted with Black and Prettier.js where appropriate
3. Must have at least 5 GitHub Issues

**Presentation**

1. Prepare a 7-minute presentation

**Individual**

1. Every member must make at least 5 commits that are eventually merged to master
2. Every member must write code that solves at least one meaningful Issue

Role assignment is recommended to accomplish specific tasks and delegate responsibilities!

**Project manager:** Pratima

**Lead Developer:** Parul

**Frontend Developer:** Randy**/**Nareman

**Backend Developer:** Hongmei**/**Pratima**/**Nareman

**Tester:** Hongmei**/**Nareman

**Possible Data Sets:**

**If we go with Healthy Food**

[**https://fdc.nal.usda.gov/**](https://fdc.nal.usda.gov/)

[**https://wwwn.cdc.gov/nchs/nhanes/Default.aspx**](https://wwwn.cdc.gov/nchs/nhanes/Default.aspx)

[**https://www.who.int/data/gho**](https://www.who.int/data/gho)

[**https://www.choosemyplate.gov/myplatekitchen/recipes?f%5B0%5D=program%3A128&f%5B1%5D=program%3A140**](https://www.choosemyplate.gov/myplatekitchen/recipes?f%5B0%5D=program%3A128&f%5B1%5D=program%3A140)