PRODUCT MATCHING IN MARKETPLACE

Overview of the Competition

The hackathon focuses on developing a product matching system for a pharmaceutical marketplace. The goal is to design a system capable of matching products based on their names while leveraging key features from the pharmaceutical product names, including the product name itself, dosage form, concentration, and price.

Participants are tasked with building a machine learning model that can analyze and match products by extracting these features from product names, ensuring accurate results even with variations in naming conventions, abbreviations, or formats. The system should be able to process and match products based on these core features to improve product discovery and user experience.

Product Name Matching: Why and How

Why Match Product Names in a Marketplace?

1. **Integrate with Sellers and Pharmacies:** Matching product names allows seamless integration with seller inventories, ensuring that the stock levels in the marketplace are always up-to-date.
2. **Enhance User Experience:** Accurate product matching helps users quickly find the products they need, improving overall satisfaction and making the search process more efficient.
3. **Consistent Product Identification:** Every product should have a unique identifier (SKU) in the marketplace, ensuring easy tracking and accurate analysis of product performance.

How Product Name Matching Works?

1. **Obtain Data from Sellers/Pharmacies:** First, you receive the product sheet from the seller or pharmacy containing product information such as item code, name, price, stock, and discount.
2. **Search the Product Master File**: Searching for the product name in the seller's sheet against the product master file to find a match.
3. **Assign the Correct SKU:** When a match is found, the SKU from the master file is added to the seller's sheet.

Simple Example:

Let's say you receive a product sheet from a seller like this:

Item code	Item name	Price	Stock	Discount
783	Augmentin 10mg	210	50	20%

You then compare the product name against the master file, which looks like this:

SKU	Item name
157	Augmentin 10mg

After finding the match, you add the SKU from the master file to the seller's sheet:

Item code	Item name	Price	Stock	Discount	SKU
783	Augmentin 10mg	210	50	20%	157

This ensures that each product has a unique SKU for accurate tracking, inventory management, and analysis.

Acceptance Criteria

- The model must return a similarity score between 0 and 1 (or 0% to 100%) indicating how closely the two names match.
- The model must be robust against minor spelling mistakes or OCR errors (e.g., "Ibuprofn" vs. "Ibuprofen").
- The model must have at least **90% accuracy** when tested against the master file.
- The model **should not require a GPU** for training or inference and must be optimized for CPU-based execution.
- The model should perform the matching process a pair of product names and return a similarity score within 500ms.
- The similarity score should be accompanied by a confidence level.

Submission Instructions

1. **Code Submission:** You are required to submit your code on GitHub Include a README file with instructions on how to run and test the code, and submit the URL of repo in the form.
2. **Demo/Presentation:** You will also need to submit a short demo showing how your solution works.
3. **Submit** your github repository on seifeltohamy@isupply.com.eg,
4. **Email subject: Product Matching Phase 1**
5. **Deadline**: All submissions must be received by 15/2/2025