UNIVERSITY OF ENGINERRING AND TECHNOLOGY,TAXILA.

BSC COMPUTER ENGINERRING

Semester: 6th

PROJECT PROPOSAL

AutoSort - AI-Powered Email Categorizer

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MACHINE LEARNING LAB (ML)

Project Proposal: AutoSort - AI-Powered Email Categorizer

Problem Statement:

In today's digital world, users receive a large volume of emails daily, making it difficult to filter important messages from spam, promotions, and other categories. Manual sorting is time-consuming and inefficient.

Proposed Solution:

AutoSort is a **machine learning-based email categorization system** that automatically classifies emails into predefined categories:

- **Personal** (friends, family)
- **Work** (office, projects, clients)
- **Spam** (phishing, ads, irrelevant content)

Using **Natural Language Processing (NLP)** and **Machine Learning**, AutoSort processes email text and assigns the appropriate category, improving organization and efficiency.

Objectives:

- Implement a simple **ML model** for email classification.
- Use **TF-IDF vectorization** and **Naïve Bayes classification** for text analysis.
- Train the model on a small dataset and test its accuracy.
- Provide a user-friendly **Jupyter Notebook implementation**.

Scope:

- Basic prototype using Python and Jupyter Notebook.
- Future enhancement: Integrate with **Gmail API** for real-world usage.

Technologies Used:

- **Programming Language:** Python
- **Libraries:** Pandas, Scikit-Learn, NLTK, TfidfVectorizer
- **Development Environment:** Jupyter Notebook

Expected Outcome:

- An AI-powered system that classifies emails into four categories.
- Increased efficiency in managing emails.
- A lightweight, easy-to-implement solution with **high accuracy**.

CONCLUSION:

AutoSort is a practical and efficient **ML solution** to automate email organization, reducing time spent on manual sorting. It provides a **simple yet effective** approach to email management with **real-world applications**.