PROJECT PROPOSAL

Task: Cuisine Classification

1. Title: Development of a Cuisine Classification Model for Enhanced Restaurant Recommendations

2. Introduction:

In today's digital landscape, where dining choices abound, cuisine classification serves as a vital aid in guiding users towards satisfying culinary experiences. This project endeavors to construct a machine learning model that adeptly categorizes restaurants based on their cuisines. Through the application of data science methodologies, the project seeks to enrich restaurant recommendation systems and elevate user engagements within foodcentric platforms.

3. Problem Statement:

- Users frequently encounter difficulties in locating restaurants that align with their specific cuisine preferences amidst a plethora of available options.
- This endeavor often proves arduous and timeconsuming, leading to compromised dining experiences and diminished customer contentment.
- The envisioned cuisine classification model aims to mitigate these challenges by automating the restaurant selection process, thereby economizing users' time and effort while ensuring tailored dining experiences.

4. Proposed Solution:

- The project proposes the creation of a machine learning model tailored for cuisine classification.
- By scrutinizing restaurant attributes such as menu offerings, geographical locations, and ambiance, the model will effectively categorize restaurants into distinct cuisine genres.
- The predictive capabilities of the model will empower restaurant recommendation systems to furnish users with pertinent and personalized dining suggestions.

5. Methodology:

- Data Collection: Restaurant data will be aggregated from reputable sources, encompassing online review platforms and publicly accessible datasets. Key dataset attributes will encompass restaurant identities, cuisines, and pertinent features.
- Data Preprocessing: The dataset will undergo preprocessing routines aimed at handling missing data and encoding categorical variables.
- Model Development: The project will explore diverse classification algorithms, including Random Forest and Logistic Regression, to craft the cuisine classification model.
- Model Evaluation: The efficacy of the model will be gauged through comprehensive evaluation metrics encompassing accuracy, precision, recall, and F1score. Additionally, an analysis of the model's performance across varied cuisines will be undertaken to discern potential biases or challenges.

6. Project Timeline:

- Week 1: Data aggregation and preprocessing.
- Week 2: Model formulation and training.
- Week 3: Model assessment and analysis.
- Week 4: Documentation, project report preparation, and final presentation.

7. Resources Required:

- Software: Utilization of Python programming language, alongside essential libraries such as pandas, scikitlearn, and matplotlib, for data manipulation, model construction, and visualization purposes.
- Hardware: Standard computing equipment equipped with adequate processing capabilities and memory allocations to facilitate data analysis endeavors.

8. Expected Deliverables:

- A fully functional cuisine classification model, proficient in accurately categorizing restaurants based on their cuisines.
- Detailed project documentation comprising elucidative code annotations, methodological expositions, and results elucidations.
- A comprehensive project report encapsulating findings, encountered challenges, and recommendations for future advancements.

9. Budget Allocation:

No supplementary budgetary provisions are necessitated, as the project intends to leverage opensource software tools and existing hardware infrastructure for implementation.

10. Conclusion:

- The project blueprint delineates a holistic strategy for the realization of a cuisine classification model tailored for restaurant recommendation systems.
- Through the judicious application of machine learning methodologies, the endeavor endeavors to augment user satisfaction levels and foster enriched dining experiences.
- The successful implementation of the cuisine classification model holds promise for catalyzing advancements within the realm of restaurant recommendation systems, thereby fostering a more engaging and personalized user journey.