Project Initialization and Planning Phase

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| Date | 10-06-2025 |
| Team ID | SWTID1749896042 |
| Project Title | Unemployed insurance beneficiary forecasting |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) report**

The proposal report aims to transform loan approval using machine learning, boosting efficiency and accuracy. It tackles system inefficiencies, promising better operations, reduced risks, and happier customers. Key features include a machine learning-based credit model and real-time decision-making.

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| **Project Overview** | |
| Objective | The primary objective is to predict the number of unemployment insurance beneficiaries using advanced machine learning  techniques. This ensures better planning, resource allocation, and policy-making for government agencies and organizations. |
| Scope | The project comprehensively analyzes historical unemployment insurance data and builds predictive models to forecast future beneficiary counts, enabling proactive decision-making and efficient fund management. |
| **Problem Statement** | |
| Description | Government agencies face challenges in accurately estimating the number of individuals who will claim unemployment insurance in the future. Lack of precise forecasting leads to inefficient resource allocation, budget mismanagement, and delayed policy responses. |
| Impact | Solving these issues will result in:   * Improved financial planning for unemployment funds * Optimized policy decisions during economic fluctuations * Enhanced support for unemployed individuals by ensuring timely disbursement of benefits |
| **Proposed Solution** | |
| Approach | Employing machine learning techniques to analyze historical unemployment insurance beneficiary data and predict future trends. The system will provide dynamic, data-driven forecasts to support decision-making processes. |

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| Key Features | * Implementation of time series forecasting models for predicting future beneficiary counts * Data preprocessing pipelines to handle missing values, outliers, and feature engineering * Visualization dashboards for intuitive understanding of trends and forecasts * Ability to update forecasts continuously as new data becomes available |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | T4 GPU |
| Memory | RAM specifications | 8 GB |
| Storage | Disk space for data, models, and logs | 1 TB SSD |
| **Software** | | |
| Frameworks | Python frameworks | Flask (for deployment if required) |
| Libraries | Additional libraries | scikit-learn, pandas, numpy, matplotlib, seaborn, statsmodels |
| Development Environment | IDE | Jupyter Notebook, pycharm |
| **Data** | | |
| Data | Source, size, format | unemployment- insurance-beneficiaries- and-benefit-amounts- paid-beginning-2001-1  .csv |