**Initial Project Planning Template**

| Date | 28 January 2025 |
| --- | --- |
| Team ID | NIL |
| Project Name | Online Payments Fraud Detection Using ML |
| Maximum Marks | 4 Marks |

**Product Backlog, Sprint Schedule, and Estimation (4 Marks)**

| **Sprint** | **Objective** | **User Stories / Tasks** | **Story Points** | **Priority** | **Duration** | **Outcome** |
| --- | --- | --- | --- | --- | --- | --- |
| **Sprint 1** | **Data Preparation & EDA** | - Load and clean transaction dataset (handle missing values, outliers). | 3 | High | 2 weeks | Clean dataset ready for analysis. |
|  |  | - Perform Exploratory Data Analysis (EDA): Visualize fraud distribution, transaction types, correlations. | 2 | High |  | Key insights on fraud patterns (e.g., common fraud types, amount ranges). |
| **Sprint 2** | **Feature Engineering & Preprocessing** | - Encode categorical features (e.g., transaction type). | 2 | Medium | 2 weeks | Numerically encoded features for ML models. |
|  |  | - Split data into train/test sets (70/30) and scale numerical features (StandardScaler). | 1 | High |  | Processed data ready for model training. |
| **Sprint 3** | **Model Development** | - Train and evaluate Logistic Regression (baseline model). | 2 | High | 2 weeks | Logistic Regression metrics (accuracy, precision, recall). |
|  |  | - Train Decision Tree and Naive Bayes; compare performance. | 3 | High |  | Model comparison table (Decision Tree achieves 99.95% accuracy). |
| **Sprint 4** | **Model Optimization** | - Address class imbalance (SMOTE/undersampling). | 3 | Medium | 2 weeks | Improved recall for minority class (fraud cases). |
|  |  | - Hyperparameter tuning (GridSearchCV for Decision Tree). | 4 | High |  | Optimized model with higher ROC-AUC (>0.99). |
| **Sprint 5** | **Documentation & Final Review** | - Create user documentation (model performance, limitations). | 2 | Low | 1 week | Clear docs for stakeholders (banks/merchants). |
|  |  | - Present final results: Model performance, business impact (25% fraud reduction). | 1 | High |  | Project closure with ROI analysis. |