DataScience Project Details

There will be 9 mini projects and 2 major projects and for each concept we will be having a Real time Use Case scenario for better understanding of the Concept

Major Projects

Major Project 1: Obesity Challenge (AI Prediction)

Overview:

Predicts obesity risk using survey data and machine learning. Utilizes algorithms like Random Forest, SVM, ANN, and KNN on data from 1610 individuals.

Core Features:

- Preprocessing of survey data
- Model training & evaluation
- Obesity class prediction
- Accuracy comparison across ML models
- Random Forest achieved 87.82% accuracy

Major Project 2: Financial Risk Prediction for Loan Approval

Overview:

Analyzes a synthetic dataset (20,000 records) for predicting loan approval and financial risk scores.

Core Features:

- Risk Score Regression (continuous output)
- Loan Approval Classification (binary output)
- Includes credit, income, employment & debt metrics

- Suitable for fintech and credit modeling

Mini Projects

Mini Project 1: Analysis of Capitals and Universities Data

Overview:

Analyzes CSV data of countries and universities to explore geographical and educational trends.

Core Features:

- Load & merge two CSV datasets
- Correlate national rank, cost, and location
- Provide insights for global education patterns

Mini Project 2: Online Shopping System

Overview:

Simulates a basic shopping system using Python OOP.

Core Features:

- Add, search, remove, update products in cart
- GST calculation & invoice generation
- Final order summary with subtotal and tax

Mini Project 3: Analytic American Association

Overview:

A law firm management system to track clients, lawyers, tasks, and billing.

Core Features:

- Client & employee (lawyer) profiles

- Billable task tracking with time sheets
- Invoice generation and 8-hour/day validation
- Efficient legal workflow automation

Mini Project 4: Sales Data Insights

Overview:

Performs end-to-end analysis on sales data using Pandas and NumPy.

Core Features:

- Load CSV sales data
- Sales summary, product trends, and customer behavior
- Country & time-based analysis
- Useful for business insights and forecasting

Mini Project 5: Melbourne Housing Snapshot

Overview:

Analyzes real estate trends from Melbourne's property sale dataset.

Core Features:

- Load & process real estate data
- Analyze price trends, location impacts
- Identify best-value suburbs
- Great use case for real estate data science

Remaining Mini Projects will be given as Assignments

Mini Project 6. Decision Tree Classifier on Moon Dataset.
Mini Project 7. Ensemble on MNIST Dataset
Mini Project 8. Titanic Dataset - Classification Task
Mini Project 9. SVM Classifier on MNIST Dataset