TEB 2043 Data Science

Jan 2026 Semester

GROUP PROJECT

Data Science is interdisciplinary field that uses Scientific Methods, Processes, Algorithms and systems to extract knowledge and insights from Structured & Unstructured data.

Team Project Description

In this assignment, students will apply the data science workflow to a real dataset of how meaningful insight can be extracted to support decision making.

Each team with minimum of TWO and maximum of FIVE members will work on a data science related project. The project relates to forecasting, prediction, analytics, and recommendations for a category of your team's interest. Some categories are, but not limited to, tourism, mobile applications, ecommerce, services, operations, retail, real estate, healthcare, food, finance, loans, entertainment, supply chain, and education. Examples of topics and their categories are as follows:

Sample Topic	Category
Forecasting the best features for android-based	Mobile application
Analysis of diets in Southeast Asia	Food
Analysis on movie recommendation	Entertainment

Task Description

1. **Choose ONE dataset**

- The dataset may be obtained from open data sources (e.g., Kaggle, government open data portals) or collected independently.
- The data can be **structured or unstructured**.

2. **Analyze the chosen data** to extract **useful knowledge and insights** using appropriate data science techniques

Deliverables

Your project must include **THREE (3) main components**:

1. Project Proposal *(Submission on week 5)*

The proposal should include:

a. **Project Introduction**
    a. Brief overview of the project

    b. Objectives and expected outcomes
b. **Data Description**
    a. Source of the dataset
    b. Type of data (structured/unstructured)
    c. Number of records and attributes
    d. Description of key variables
c. **Background / Problem Statement**
    a. Motivation for choosing the dataset
    b. Problem(s) to be solved or questions to be answered
    c. Importance of the analysis

2. Project Report *(submission on week 11)*

Your report must have:

- Cover Page that states the project title and lists all team members
- Table of Content
- Executive Summary that describes the overall project
- Problem Description that describes both the business goal and the technical goal. The business goal explains the project objective in general. For technical goal, it depends on the topic your team has chosen. For example, if your topic is on forecasting, then your technical goal could revolve around forecasting.
- Data Description that provides details of your data source inclusive of relevant schematic view of your data set.
- Data Preparation that describes the method(s) that your team has utilized to prepare cleansed data.
- Solution that describes the methods and findings.
- Conclusion
- The report should document the **complete data science process**, including:
    - Data understanding and exploration
    - Data cleaning and preprocessing
    - Data analysis and/or modeling techniques used
    - Results and findings
    - Key insights and interpretations
    - Limitations and possible improvements

Appendix that shows graphs, figures, tables, sample programs

3. Dashboard System

Develop a **dashboard** to visually present the results of your analysis.

The dashboard should:

- Display key metrics and trends
- Use appropriate charts and visualizations
- Be clear, interactive, and easy to understand
- Support the insights presented in the report

(Any suitable tool may be used, e.g., R/Rstudio/Rshine,Power BI, Tableau, Google Data Studio, Python dashboards, etc.)

Milestone

- Week 2
  - Team formation
- Week 3 – Week 4
  - Project topic
- Week 5
  - Project Proposal Submission
- Week 6 – Week 10
  - Data source
  - Data preparation
  - Solution
  - Documentation
- Week 11
  - Submission of report
- Week 12

Assessment, 80% of overall project marks

- Cover page 5%
- Executive Summary 10%
- Problem Description 15%
- Data Description 15%
- Data Preparation 15%%
- Solution 20%
- Conclusion 10%
- Appendix 10%

Presentation Assessment, 20% of overall project marks

- Appearance 5%
- Introduction 10%
- Contents 50%
- Verbal skills 25%
- Question and answer 10%