

Week 1: Planning Phase

SWOT Analysis

Strengths

- Skills in Python and Public Tableau for data analysis
- Ability to clean and analyze structured datasets
- Knowledge of data visualization

Weaknesses

- No exposure to advanced statistical models or ML
- Need for more practice in writing efficient SQL queries

Opportunities

- Data-driven decision-making is in high demand across industries
- Public datasets available for real-world (government data)

Threats

- Incomplete or inconsistent data
- Interpreting results incorrectly due to lack of domain knowledge

Project Proposal

Project Objective

- *This project aims to analyze unemployment annual trends for counties and cities using Python and Public Tableau.*

Scope & Timeline

- Define data sources:
 - CSV files
 - SQL databases
 - JSON from web scraping
- *State of California Unemployment data will be imported from a CSV file, cleaned and analyzed with Python and Public Tableau visualizations.*

Timeline

- Week 1: Planning and defining project scope

- Week 2: Data collection and preprocessing
- Week 3: Data analysis using Python
- Week 4: Creating visual reports in Public Tableau
- Week 5: Final improvements and project documentation

Expected Outcome

- *A Public Tableau dashboard displaying key Unemployment trends, by Counties and Cities over time.*

Risks & Mitigation Strategies

- *If the dataset contains missing values, they will be handled using interpolation or removal techniques. If data is inconsistent, data cleaning will be performed using Python's pandas library.*

Week 2: Analysis Phase

Prompt

In this phase, you will define your project's technical needs, choose a development approach, and create system models to understand data flow and operations.

1. System Requirements Document

- **Input:**
 - <https://catalog.data.gov/dataset/local-area-unemployment-statistics-laus-annual-average>
 - CSV
 - Ensure each county and city has correct name and numeric value
- **Processing:**
 - Data cleaned using Python Pandas library to search for missing values, incorrect names, and dates
 - Data transformed with Python Pandas to ensure all data inputs ready for Public Tableau
 - Data analyzed within Public Tableau and via dashboard
- **Output:**
 - Public Tableau visualizing Exploratory Data Analysis and Dashboard for Descriptive Analysis on county and city Unemployment Trends in the golden state of California from 1990 to 2025.

2. Development Methodology Justification** (*Short report*)

- Identify the chosen methodology (Agile, CRISP-DM, etc.) and justify its relevance.
- Outline key milestones and roles (if applicable).
 - *Example:* A brief explanation of why Agile was chosen for iterative dashboard development.

3. UML Diagrams** (*PDF or PNG format*)

- **Use Case Diagram:** Show user interactions with the system.
- **Class Diagram:** Define key data objects and their attributes.
 - *Example:* A Use Case Diagram illustrating how analysts retrieve and filter sales data.

4. Data Flow Diagrams (DFDs)** (*PDF or PNG format*)

- **DFD Level 0:** High-level overview of data movement.
- **DFD Level 1:** Detailed breakdown of data flow between components.
 - *Example:* A DFD showing how transaction data moves from a SQL database to a Power BI dashboard.

5. Security and Storage Plan** (*Short report*)

- Describe how data will be stored (local, cloud, or hybrid).
- Identify security risks and planned safeguards (e.g., encryption, API security).
 - *Example:* A report explaining how sensitive customer data will be encrypted and backed up.

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