Project Idea 1: Store Sales Dataset Analysis

Week 1: Build Data Model, Data Cleaning and Preprocessing

- **Tasks:**
  - **Data Preprocessing:** Build a data model and clean and preprocess the data.
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Cleaned dataset ready for analysis.
  - Data preprocessing notebook.

Week 2: Analysis Questions Phase

- **Tasks:**
  - **Determine Data Analysis Questions:** Determine all possible analysis questions that can be deducted from the given dataset and would be of interest to the organization's decision makers, e.g., what is the impact on products category and regions on sales performance?
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Set of analysis questions that can be answered via the dataset.

Week 3: Forecasting Questions Phase

- **Tasks:**
  - Determine a set of forecasting questions and answer them using the trends found in the given dataset.
  - **Tools:** Python (scikit-learn, pandas, Matplotlib).
- **Deliverables:**
  - Visualization plots answering forecasting questions.

Week 4: Visualization Dashboard and Final Presentation

- **Tasks:**
  - **Build a Visualization Dashboard:** Build a Tableau visualization dashboard that visualizes the answers to all answered questions.
  - **Final Presentation:** Prepare a report and presentation summarizing the project work, including data analysis, model development, and deployment.
  - **Tools:** SQL, Python (pandas, Matplotlib), Tableau.
- **Deliverables:**
  - Visualization dashboard.
  - Final report and presentation.

Project Idea 2: Supply Chain Dataset Analysis

Week 1: Build Data Model, Data Cleaning and Preprocessing

- **Tasks:**
  - **Data Preprocessing:** Build a data model and clean and preprocess the data.
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Cleaned dataset ready for analysis.
  - Data preprocessing notebook.

Week 2: Analysis Questions Phase

- **Tasks:**
  - **Determine Data Analysis Questions:** Determine all possible analysis questions that can be deducted from the given dataset and would be of interest to the organization's decision makers, e.g., what is the impact of product category on the revenue?
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Set of analysis questions that can be answered via the dataset.

Week 3: Forecasting Questions Phase

- **Tasks:**
  - Determine a set of forecasting questions and answer them using the trends found in the given dataset.
  - **Tools:** Python (scikit-learn, pandas, Matplotlib).
- **Deliverables:**
  - Visualization plots answering forecasting questions.

Week 4: Visualization Dashboard and Final Presentation

- **Tasks:**
  - **Build a Visualization Dashboard:** Build a Tableau visualization dashboard that visualizes the answers to all answered questions.
  - **Final Presentation:** Prepare a report and presentation summarizing the project work, including data analysis, model development, and deployment.
  - **Tools:** SQL, Python (pandas, Matplotlib), Tableau.
- **Deliverables:**
  - Visualization dashboard.
    Final report and presentation.

Project Idea 3: Human Resources Dataset Analysis

Week 1: Build Data Model, Data Cleaning and Preprocessing

- **Tasks:**
  - **Data Preprocessing:** Build a data model and clean and preprocess the data.
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Cleaned dataset ready for analysis.
  - Data preprocessing notebook.

Week 2: Analysis Questions Phase

- **Tasks:**
  - **Determine Data Analysis Questions:** Determine all possible analysis questions that can be deducted from the given dataset and would be of interest to the organization's decision makers, e.g., what is the relation between the employees ages and their satisfaction level?
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Set of analysis questions that can be answered via the dataset.

Week 3: Forecasting Questions Phase

- **Tasks:**
  - Determine a set of forecasting questions and answer them using the trends found in the given dataset.
  - **Tools:** Python (scikit-learn, pandas, Matplotlib).
- **Deliverables:**
  - Visualization plots answering forecasting questions.

Week 4: Visualization Dashboard and Final Presentation

- **Tasks:**
  - **Build a Visualization Dashboard:** Build a Tableau visualization dashboard that visualize the answers to all answered questions.
  - **Final Presentation:** Prepare a report and presentation summarizing the project work, including data analysis, model development, and deployment.
  - **Tools:** SQL, Python (pandas, Matplotlib), Tableau.
- **Deliverables:**
  - Visualization dashboard
  - Final report and presentation

Project Idea 4 (Outstanding): Manufacturing Downtime

Week 1: Build Data Model, Data Cleaning and Preprocessing

- **Tasks:**
  - **Data Preprocessing:** Build a data model and clean and preprocess the data.
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Cleaned dataset ready for analysis.
  - Data preprocessing notebook.

Week 2: Analysis Questions Phase

- **Tasks:**
  - **Determine Data Analysis Questions:** Determine all possible analysis questions that can be deducted from the given dataset and would be of interest to the organization's decision makers.
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Set of analysis questions that can be answered via the dataset.

Week 3: Forecasting Questions Phase

- **Tasks:**
  - Determine a set of forecasting questions and answer them using the trends found in the given dataset.
  - Such forecasting questions must include the prediction of downtime in the next day of operation. Then, accordingly, highlighting the number of batches to be produced.
  - **Tools:** Python (scikit-learn, pandas, Matplotlib).
- **Deliverables:**
  - Visualization plots answering forecasting questions.

Week 4: Visualization Dashboard and Final Presentation

- **Tasks:**
  - **Build a Visualization Dashboard:** Build a Tableau visualization dashboard that visualize the answers to all answered questions.
  - **Final Presentation:** Prepare a report and presentation summarizing the project work, including data analysis, model development, and deployment.
  - **Tools:** SQL, Python (pandas, Matplotlib), Tableau.
- **Deliverables:**
  - Visualization dashboard
  - Final report and presentation

Project Idea 5 (Outstanding): MTA Daily Ridership

Week 1: Build Data Model, Data Cleaning and Preprocessing

- **Tasks:**
  - **Data Preprocessing:** Build a data model and clean and preprocess the data.
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Cleaned dataset ready for analysis.
  - Data preprocessing notebook.

Week 2: Analysis Questions Phase

- **Tasks:**
  - **Determine Data Analysis Questions:** Determine all possible analysis questions that can be deducted from the given dataset and would be of interest to the organization's decision makers.
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Set of analysis questions that can be answered via the dataset.

Week 3: Forecasting Questions Phase

- **Tasks:**
  - Determine a set of forecasting questions and answer them using the trends found in the given dataset.
  - Such forecasting questions must include the prediction of amount of ridership for the next month.
  - **Tools:** Python (scikit-learn, pandas, Matplotlib).
- **Deliverables:**
  - Visualization plots answering forecasting questions.

Week 4: Visualization Dashboard and Final Presentation

- **Tasks:**
  - **Build a Visualization Dashboard:** Build a Tableau visualization dashboard that visualize the answers to all answered questions.
  - **Final Presentation:** Prepare a report and presentation summarizing the project work, including data analysis, model development, and deployment.
  - **Tools:** SQL, Python (pandas, Matplotlib), Tableau.
- **Deliverables:**
  - Visualization dashboard
  - Final report and presentation

Project Idea 6 (Outstanding): UK Train Rides

Week 1: Build Data Model, Data Cleaning and Preprocessing

- **Tasks:**
  - **Data Preprocessing:** Build a data model and clean and preprocess the data.
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Cleaned dataset ready for analysis.
  - Data preprocessing notebook.

Week 2: Analysis Questions Phase

- **Tasks:**
  - **Determine Data Analysis Questions:** Determine all possible analysis questions that can be deducted from the given dataset and would be of interest to the organization's decision makers.
  - **Tools:** SQL, Python (pandas, Matplotlib).
- **Deliverables:**
  - Set of analysis questions that can be answered via the dataset.

Week 3: Forecasting Questions Phase

- **Tasks:**
  - Determine a set of forecasting questions and answer them using the trends found in the given dataset.
  - Such forecasting questions must include the prediction of number of rides for the next month. Then, accordingly, highlighting the forecasted revenue during each day of the next month. Also, you need to specify the demand on different ticket classes.
  - **Tools:** Python (scikit-learn, pandas, Matplotlib).
- **Deliverables:**
  - Visualization plots answering forecasting questions.

Week 4: Visualization Dashboard and Final Presentation

- **Tasks:**
  - **Build a Visualization Dashboard:** Build a Tableau visualization dashboard that visualize the answers to all answered questions.
  - **Final Presentation:** Prepare a report and presentation summarizing the project work, including data analysis, model development, and deployment.
  - **Tools:** SQL, Python (pandas, Matplotlib), Tableau.
- **Deliverables:**
  - Visualization dashboard
  - Final report and presentation