Project Brief:

Project title	**Data-Driven HR Analytics for Attrition and Performance**
Module Name	WSQ- Data Modelling and Visualization (SF)
Course Name	Professional Diploma in Data Science
Course & Module Code	PDDS-DMV
Project Start date	Refer Schedule
Project Submission Date	Refer Schedule

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Document Version History

Version Number	Effective Date of release	Details	Author
1.0	24 June 2023	Initial Creation	Kishan
2.0	15 November 2024	Update in format	Ismayil Siyad

1. Purpose of this Project

This project is utilized for the Summative Assessment of Learners within the 'Data Modelling and Visualization' module. It will employ skills crucial for decision-making and create data visualizations using Power BI, focusing on HR analytics related to employee attrition and performance.

2. Project Pre-requisites

You should have completed the following activities before -

- Viewed and understood all the e-content related to the module.
- Completed all the MCQ tests related to the module.
- Completed all the Assignment / Lab Exercises of the module.

You should have access to the Project Brief, Project Report template and should understand how to use the templates.

You have access to the Project Technical Environment.

You should understand the number of milestones and what are the milestones to be presented for each of the Mentoring Session.

To implement the project, you will need a MS Windows Computer and Access to Power BI.

3. Project Outcomes & Deliverables

The learner is expected to execute all tasks listed in the Project Task List, which includes:

- Analysis of HR-related data using Power BI.
- Creation of a Power BI dashboard that showcases data visualizations.
- Preparation of a Project Report by the provided template.

4. Project Definition

The project's goal is to harness Power BI for in-depth HR analytics to support better decision-making regarding employee attrition and performance, ultimately enhancing HR functions and strategies within a business.

5. Project Task List

The project activities include:

Activity 1: Data Transformation

1. **Import Data**: Load tables "Education", "Attrition Rates", "Employee Data 2018 - 2019", "Job Involvement", "Performance Rating", "Satisfaction",and "WorkLifeBalance" into Power BI.
2. **Cleanse Data**: Examine tables for any data quality issues (missing values, incorrect formats) and resolve them.
3. **Create Calculated Columns**:
    - For "Employee Data 2018 - 2019", create "AgeBin" by categorizing "Age".

- For "Attrition Rates", ensure "date" is in DateTime format.

4. **Generate Measures**:
    - Create measures like "%Attrition", "ActiveEmployees", "InactiveEmployees", and "TotalEmployees" in the "Measure" table using DAX formulas.

Activity 2: Data Modelling

1. **Establish Relationships**: Define relationships between tables:
    - Link "Education" to "Employee Data" on "Education".
    - Link "Job Involvement" to "Employee Data" on "Job Involvement ID".
    - Link "Performance Rating" to "Employee Data" on "Performance ID".
    - Link "Satisfaction" to "Employee Data" on "Satisfaction Id".
    - Link "WorkLifeBalance" to "Employee Data" on "WorkLifeBalance ID".
2. **Create Hierarchies**: For example, a hierarchy in "Employee Data" with "Department" and "JobRole".
3. **Optimize Model**: Review and ensure that relationships are correctly set to either single or both directions as needed.

Activity 3: Visualizations for Overview Page

1. **KPI Cards**: Create cards to display key metrics like "TotalEmployees", "ActiveEmployees", "InactiveEmployees", and "%Attrition".
2. **Bar Chart**: Develop a bar chart for "Employees Attrition by Date" using "date" and "Attrition_rate".
3. **Stacked Bar Chart**: Create a stacked bar chart for "ActiveEmployees by Department" and further break it down by "JobRole".

Activity 4: Visualizations for Demographics Page

1. **KPI Cards**: Create cards to display the "Youngest Employee" and "Oldest Employee" age.
2. **Bar Chart**: Build a bar chart for "Employees by AgeBin" using "AgeBin" and count of employees.
3. **Pie Chart**: Create a pie chart for "Employees by MaritalStatus".
4. **Combined Chart**: Construct a combined bar and line chart for "Employees Average Salary by AgeBin, Department, and JobRole".

Activity 5: Visualizations for Performance Tracker and Attrition Pages

1. **Filter Slicers**: Implement slicers for filtering based on "EmployeeID".
2. **Bar Chart**: Develop bar charts to show counts or max values for "Education", "Job Satisfaction", "Job Involvement", "Relationship Satisfaction", "Performance Rating", "Work Life Balance", and "Environment Satisfaction".
3. **Gauges**: Design gauges for visualizing "Performance Rating" and "Work Life Balance".
4. **Line and Bar Charts**: For the Attrition page, create line charts to track "Attrition by Tenure" and bar charts for "Attrition by Department and Job Role", "Attrition by Travel Frequency", and "Attrition by Years at Current Role".

6. Project Evidence.

You should prepare the following project evidence as part of your Project Report

All Activities		Evidence
1-5	Project Report	Documentation and Screenshots of the entire workflow from Power BI.

7. Project Guidelines

You should follow the below guidelines while implementing the Project:

- Implement the project in the technical environment specified in the Project brief.
- Follow the format specified for Project Report
- The project report and the PBIX File should be submitted at least 2 days before the date of Summative Assessment date.
- Present the Milestones in every Mentoring Session and seek the Mentor's feedback and review.
- Incorporate the feedback in your project.
- Attach all project evidence for each milestone as part of your Project report.

8. Project Technical Environment

The Learner should perform the project in the following environment.

- The Learner should have the following tools installed on his/her Windows machine: Power BI VM or Power BI Desktop.