ARCHITECTURE DESIGN

Investment Analytics

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1. Introduction

1.1 What is Architecture design document?

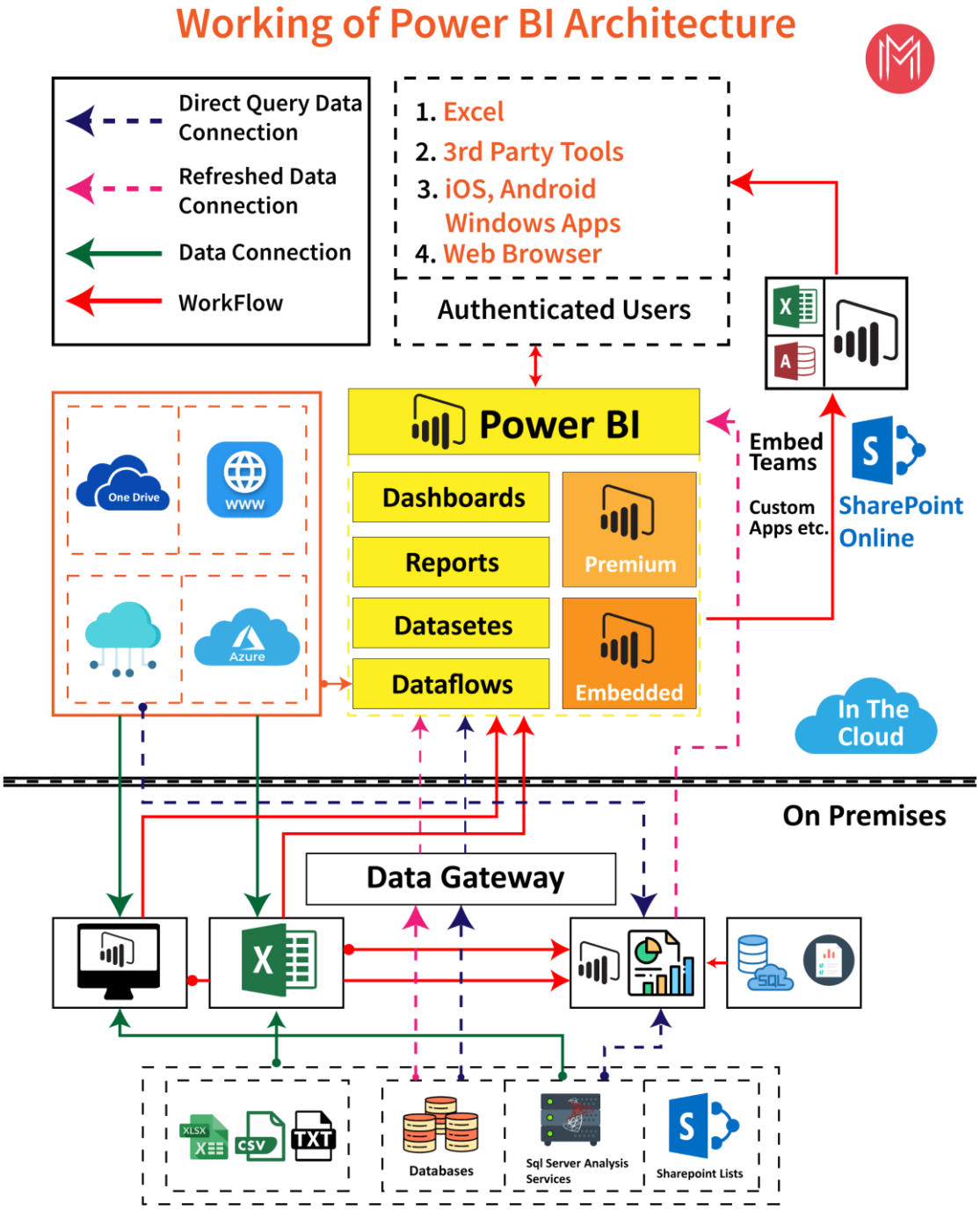
Any software needs the architectural design to represents the design of software. IEEE defines architectural design as “the process of defining a collection of hardware and software components and their interfaces to establish the framework for the development of a computer system.” The software that is built for computer-based systems can exhibit one of these many architectures.

Each style will describe a system category that consists of:
• A set of components (e.g.: a database, computational modules) that will perform a function required by the system.
• The set of connectors will help in coordination, communication, and cooperation between the components.
• Conditions that how components can be integrated to form the system.
• Semantic models that help the designer to understand the overall properties of the system.

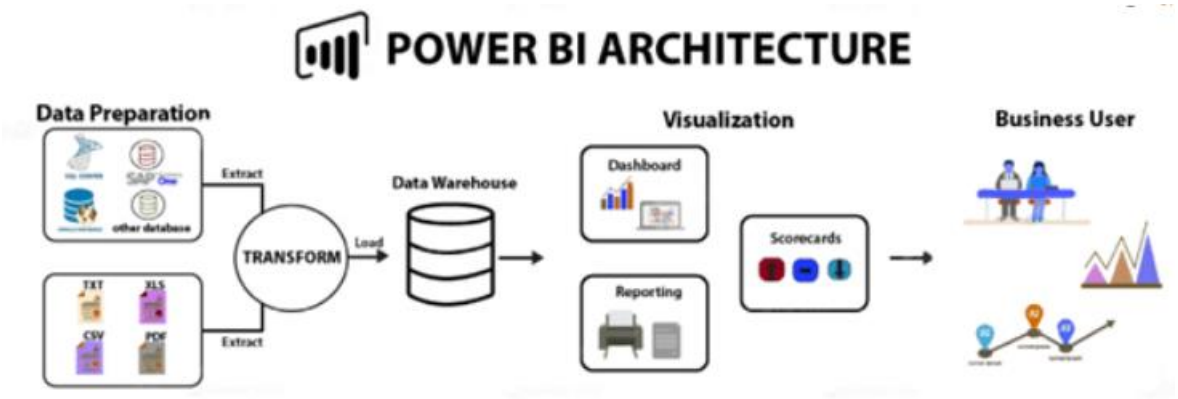
1.2 Scope

Architecture Design Document (ADD) is an architecture design process that follows a step-by-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the design principles may be defined during requirement analysis and then refined during architectural design work.

2. Architecture



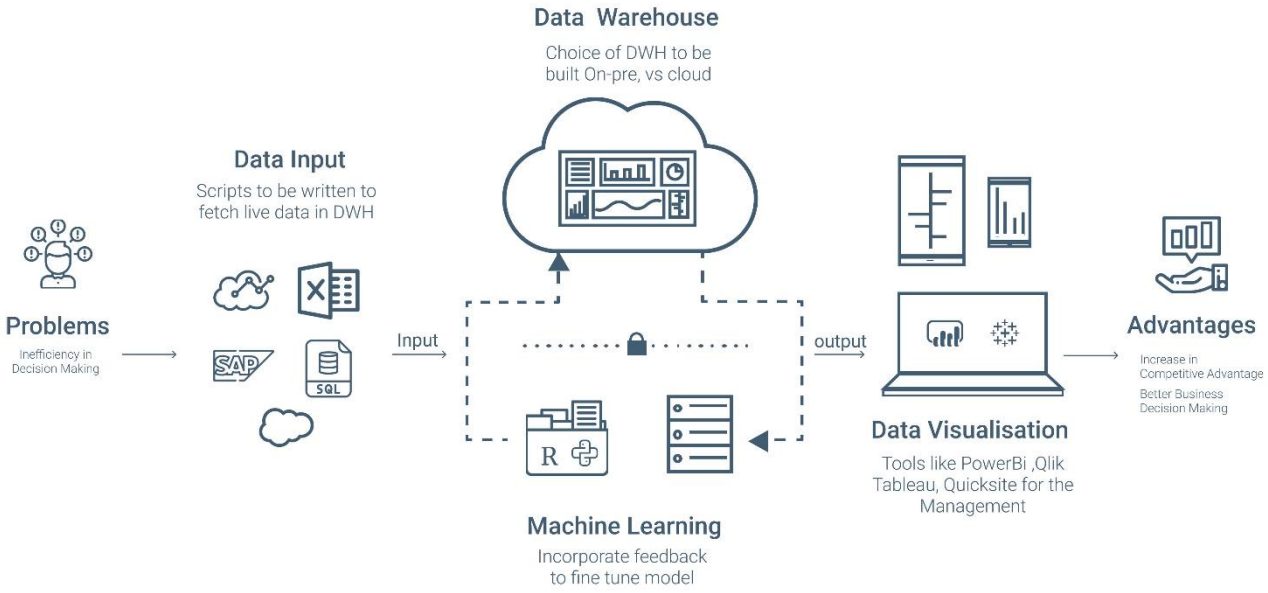
Power BI architecture



3. System Overview

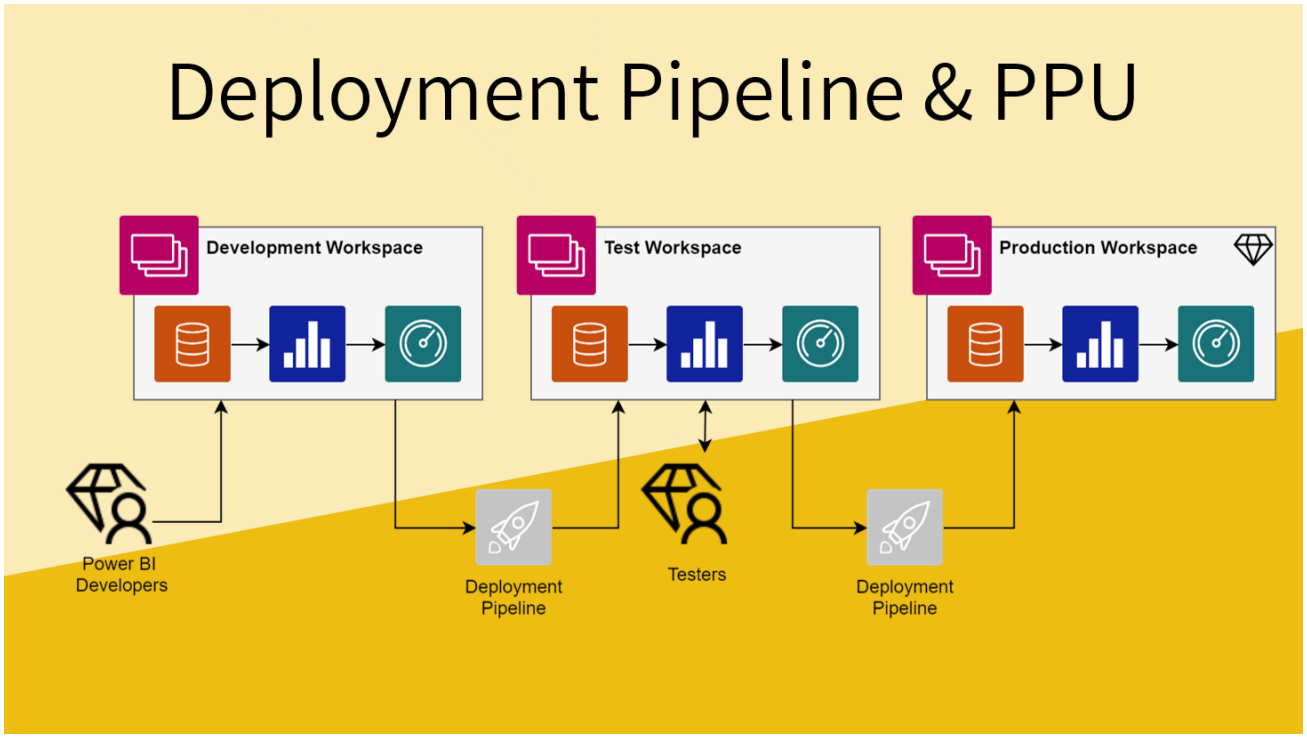
The Investment Analytics project is focused on analysing FDI in India from 2000-2001 to 2016-17 using Power BI. The system architecture consists of the following components:

1. Data Source: The FDI_in_India.csv dataset available on Kaggle.
2. Data Processing: Power Query and Power Pivot for data modelling and transformation.
3. Data Visualization: Power BI for creating reports and dashboards.



4. Deployment Description

4.1. Deployment in Power BI



4.2. Components of Power BI Architecture.

4.2.1 Data Sources

Data sources are the starting point for any Power BI project. Power BI supports a wide range of data sources including SQL Server, Excel, SharePoint, and many others. In your Investment Analytics project, the FDI_in_India.csv dataset available on Kaggle serves as the data source.

4.2.2 Data Modelling

Power BI's data modeling capabilities enable you to transform raw data into a format suitable for reporting and analysis. Power Query is a powerful data modeling tool that allows you to shape and combine data from multiple sources. Power Pivot is another data modeling tool that enables you to create relationships between tables and perform calculations.

4.2.3 Data Visualization

The main objective of any BI project is to provide insights through data visualization. Power BI provides a wide range of visualization options including tables, charts, maps, and custom visuals. In your Investment Analytics project, you will create reports and dashboards to visualize insights on FDI trends.

4.2.4 Data Refresh

Keeping data up-to-date is crucial for any BI project. Power BI provides a variety of data refresh options including scheduled refresh, on-demand refresh, and direct query. In your project, you may choose to schedule the refresh of the FDI_in_India.csv dataset to ensure that the reports and dashboards are always up-to-date.

4.2.5 Security and Administration

Power BI allows you to manage user access, roles, and permissions. You can also monitor usage and performance metrics using the Power BI admin portal. In your project, you may need to ensure that sensitive data is secured and access to the reports and dashboards is restricted to authorized users.

4.2.6 Integration

Power BI can be integrated with other Microsoft services such as Excel, SharePoint, and Teams. In addition, Power BI also supports third-party integrations using APIs. In your project, you may choose to integrate Power BI with other tools to enhance the functionality and usability of the reports and dashboards.