Analyzing Amazon sales data Architecture.

Written by	Deepak V
Document Version	1.0

Document Control

Version	Date	Author	Comments
1.0	30/10/2023	Deepak V	

Approval Status:

Version	Review Date	Reviewed by	Approved by	Comments

Content

1.Introduction

1.1What is architecture design framework

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 (eg: 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.

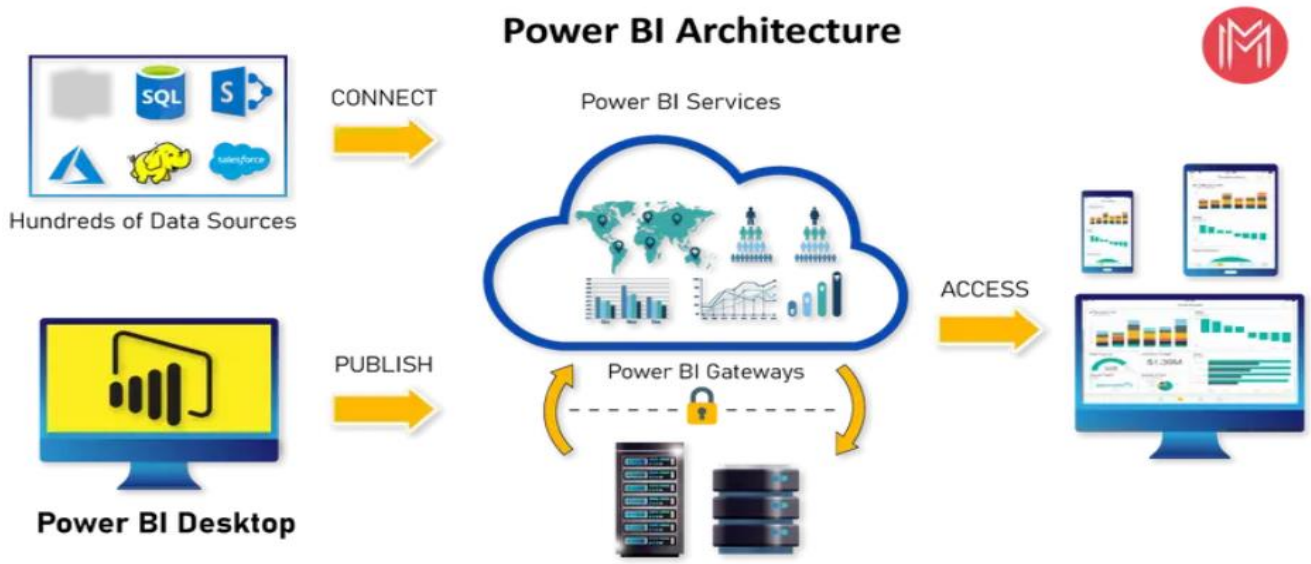
1.2 Scope

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 is a business solution that combines multiple technologies to work together as a system. Microsoft's Power BI technology consists of a suite of components that deliver exceptional business intelligence solutions, such as:

- Power Query (for data mash-up and transformation)
- Power BI Desktop (a companion development tool)
- Power BI Mobile (for Android, iOS, Windows phones)
- Power Pivot (for in-memory tabular data modelling)
- Power View (for viewing data visualizations)
- Power Map (for visualizing 3D geo-spatial data)
- Power Q&A (for natural language Q&A).



2.1. Data Sources

Power BI's extensive data source support is a key feature. You can import data from local files, cloud-based online sources, or connect directly to live data sources. There is a 1 GB limit on imports from on-premises or online services. Some common Power BI data sources include:

a) Excel
b) Text/CSV
c) XML
d) JSON
e) Oracle Database
f) IBM DB2 Database
g) MySQL Database
h) Postgres SQL Database
i) Sybase Database
j) Teradata Database
k) SAP HANA Database
l) SAP Business Warehouse server
m) Amazon Redshift
n) Impala o) Google Big Query (Beta)
p) Azure SQL Database
q) Salesforce Reports
r) Google Analytics
s) Facebook
t) GitHub.

2.2 Power BI desktop

Power BI Desktop allows users to connect to a wide variety of data sources, both on-premises and in the cloud. Once connected, users can clean and transform their data, and create reports and dashboards that visualize their data in a meaningful way. Power BI Desktop also includes a number of advanced features, such as the ability to create custom visualizations, develop DAX expressions, and publish reports to the Power BI Service.

2.3 Power BI service

Power BI Service is a cloud-based platform for storing, sharing, and collaborating on Power BI content. It is the central hub for accessing Power BI content from anywhere, and it provides a number of features for managing and distributing Power BI content, such as workspaces, apps, datasets, reports, and dashboards. This is a powerful tool for sharing and collaborating on BI

content, and it plays a vital role in the data ingestion, transformation, modelling, visualization, and publishing process.

2.4 Power BI report server

Power BI Report Server is a self-hosted solution for publishing and managing Power BI reports on-premises. It is suitable for organizations that need to control their own data and environment, or that have compliance requirements that prevent them from using the cloud-based Power BI Service. It also provides a number of features that make it easy to manage and distribute Power BI reports, including centralized management and scalability. The only difference between these two is that Power BI Report Server is an on-premise platform.

2.5 Power BI Gateway

Power BI Gateways are used in organizations to securely extract on-premises data to Power BI for analysis and reporting. This component is used to connect and access on-premise data in secured networks. Power BI Gateways are generally used in organizations where data is kept in security and watch.

2.6 Power BI Mobile

Power BI Mobile is a native Power BI app for iOS, Android, and Windows mobile devices. It allows users to view reports and dashboards.

3. Deployment

Power BI offers different options for deployment for business needs and requirements.

- Power BI service: This is the cloud-based version of Power BI, and it is the most common deployment option. It's also easy to get started with, and it offers a wide range of features, including report creation, sharing, and collaboration.

- Power BI Report Server: This is an on-premises version of Power BI. This provides more control over the environment, but it also requires more management overhead. It is also a good option for organizations with strict security requirements or that need to keep their data on-premises.

- Power BI Embedded: This option allows to embed Power BI reports and dashboards into your own applications. It is a good option for organizations that want to provide their

customers or employees with access to Power BI content without having to leave their own applications.

- Power BI mobile apps: Reports can be deployed to mobile using power BI mobile apps like ios and android.