**Introduction to end-to-end analytics using MS Fabric:**

Fabric: SaaS 🡪 all data stored in single open format in OneLake

**OneLake:**

For collaboration eliminating need to move or copy data between systems.

Unifies your data across regions and clouds into a single logical lake without moving or duplicating data.

Built on **ADLs** and supports Delta, parquet, csv, JSON

All compute engines 🡪 automatically store their data in OneLake

For tabular data 🡪 write data in delta-parquet format

**Shortcuts:**

References to files or storage locations external to OneLake.

Allows you to access existing cloud data without copying it.

Ensures data consistency and stay in sync with the source.

A screen shot of a computer

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**Workspaces:**

Logical containers that help you organize and manage your data, reports and other assets.

Separate the resources for controlled access and maintain security.

Each workspace 🡪 has own set of permissions 🡪 ensures authorization to view/ modify data (maintain restricted access).

Allows you to manage compute resources and integrate with GIT for version control.

**Evolution of collaborative workflows:**

* **Data Engineers:** ingest, transform, load data directly into onelake using pipelines, support scheduling. Store data in LakeHouse using delta parquet format. Notebooks 🡪 advanced scripting for complex transformations.
* **Data analysts:** transform data upstream using dataflows and connect directly to OneLake with Direct Lake mode, reduce need for downstream transformations. Create interactive reports using Power BI.
* **Data Scientists:** Use integrated notebooks for python and spark to build and test ML models, store and access data in lakehouses, integrate with AZ ML to operationalize and deploy models.
* **Analytics engineers:** curates data assets in lakehouses, ensures data quality, enables self service analytics. Create semantic models in Power BI to organize and present data effectively.
* **Low-**to-no-code users and citizen developers: can discover curated datasets through onelake hub and create reports and dashboard using Power bI templates. They can use dataflows to perform simple ETL tasks without relying on data engineers.

**Create items with Fabric workloads**:

Each workload offers different item types for storing, processing and analyzing data. Fabric workload include:

|  |  |
| --- | --- |
| Data engineering | Create LH, workflows to build, transform, share data |
| Data Factory | Ingest, transform, orchestrate data |
| Data science | Detect trends, identify outliers, predict vals using Ml |
| Data warehouse | Combine multiple sources in a traditional warehouse for analytics |
| Databases | Crete and manage DB with tools to insert, query, extract data |
| Industry solutions | Use out-of-box industry data solutions |
| Real time intelligence | Process, monitor and analyze streaming data |
| Power BI | Create reports and dashboards to make data driven solutions |

A screenshot of a computer

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