Classify Your Sensitive Data Assets Automatically Using IBM Watson Knowledge Catalog

LAB Session **5479**

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Lab Overview

Data Governance Challenge

ABC Healthcare Inc is a , healthcare service provider across the United States. The Chief Data Officer(CDO) has been tasked to deal with patient data privacy compliance. The company has recently acquired another provider. Each organization has numerous data sources that need to managed and governed in compliance with federal as well as state regulations.

One of first task for CDO's office is to identify all PII (personally identifiable information) data assets across companies and data sources efficiently with limited human resources available.

Data assets under consideration

There are numerous sources that CDO's office is responsible for. As pilot for this project, following tables will be used from a db2 database

Patients
ID CHAR(40),
BIRTHDATE DATE,
DEATHDATE DATE,
SSN CHAR(11),
DRIVERS CHAR(20),
PASSPORT CHAR(20),
PREFIX CHAR(10),
FIRST CHAR(20),
LAST CHAR(20),
SUFFIX CHAR(20),
MAIDEN CHAR(20),
MARITAL CHAR(1),
RACE CHAR(20),
ETHNICITY CHAR(20),
GENDER CHAR(1),
BIRTHPLACE VARCHAR(80),
ADDRESS VARCHAR(150),
CITY CHAR(30),
STATE CHAR(40),
ZIP CHAR(10)

Allergies
START DATE,
STOP DATE,
PATIENT CHAR(40),
ENCOUNTER CHAR(40),
CODE CHAR(20),
DESCRIPTION CHAR(40)

Potential ways to mitigate

Capture all PII in data model
Data modeler can create and document PII info within data modeling tool.
Problem : Lot of manual effort and difficult to share across processes and workflows.

Capture all PII assets in spreadsheets
Ask all data owners to create their own ways to capture PII assets.
Problem : Lot of manual and error prone

Metadata tool
Capture all metadata across lines of businesses within a single metadata repository. Have LOBs owners to setup and configure PII with specific tags.
Problem: Varies by tool. Many tools will require extensive manual effort to classify data assets.

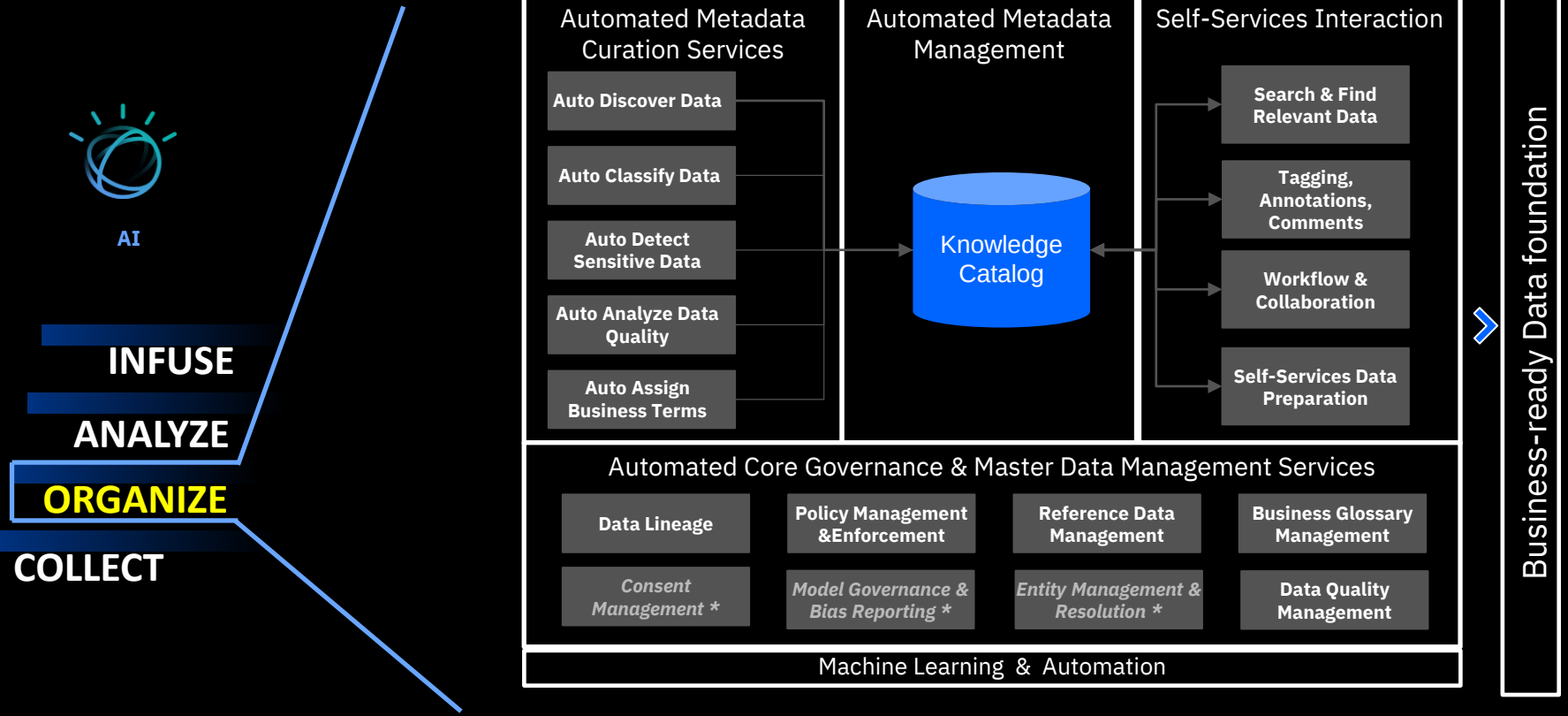
Do nothing !!

Watson Knowledge Catalog (WKC) approach

WKC provides single enterprise wide metadata tool that individual LOBs can collaboratively work with. The tool provides capturing of metadata automatically using machine learning(ML) based identification of data classes, assigning business glossary to technical metadata and governance workflows. The tool provides automation rules that significantly reduces human intervention in identification and management of PII data assets.

Watson Knowledge Catalog

End-To-End Fully Integrated Platform for Data Integration, Quality, Governance, And Consumption

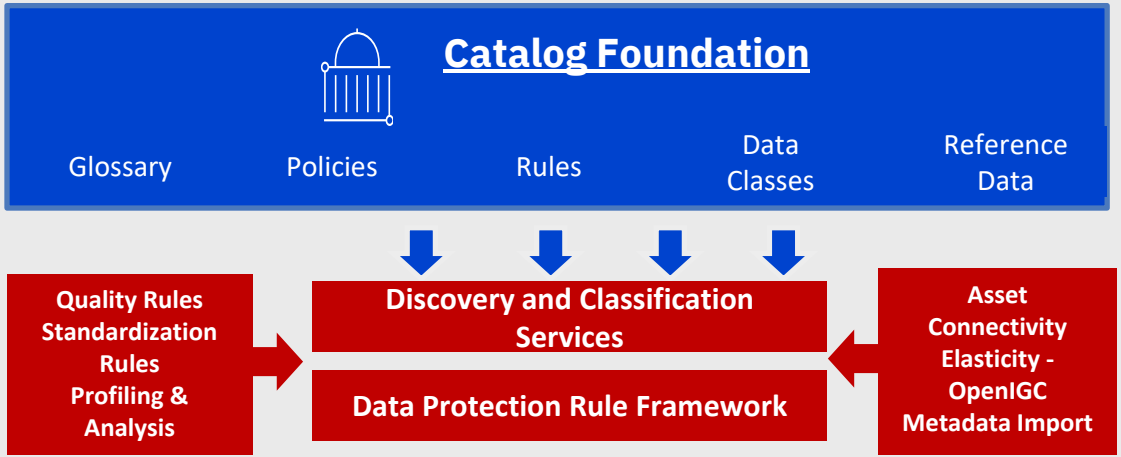


Watson Knowledge Catalog - Automated Governance

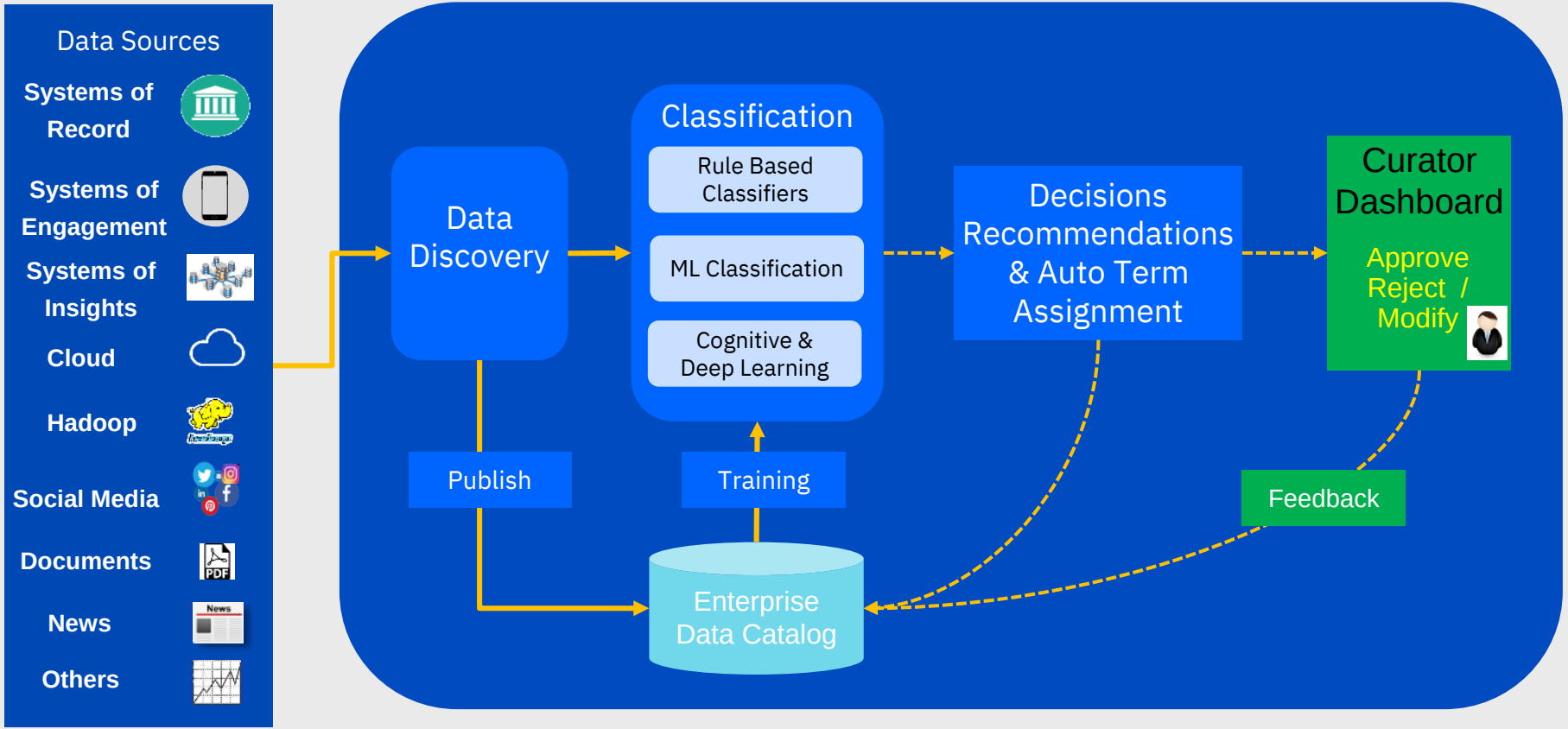
1.Build Catalog foundation through
- Business Glossary
- Governance Policies
- Protection Rules
- Data Classes
- Reference Data

2. Automated Discovery
- Setup Data Source Connection
- Initiate Import and Discovery Job
- Review and Publish Data Asset to catalog

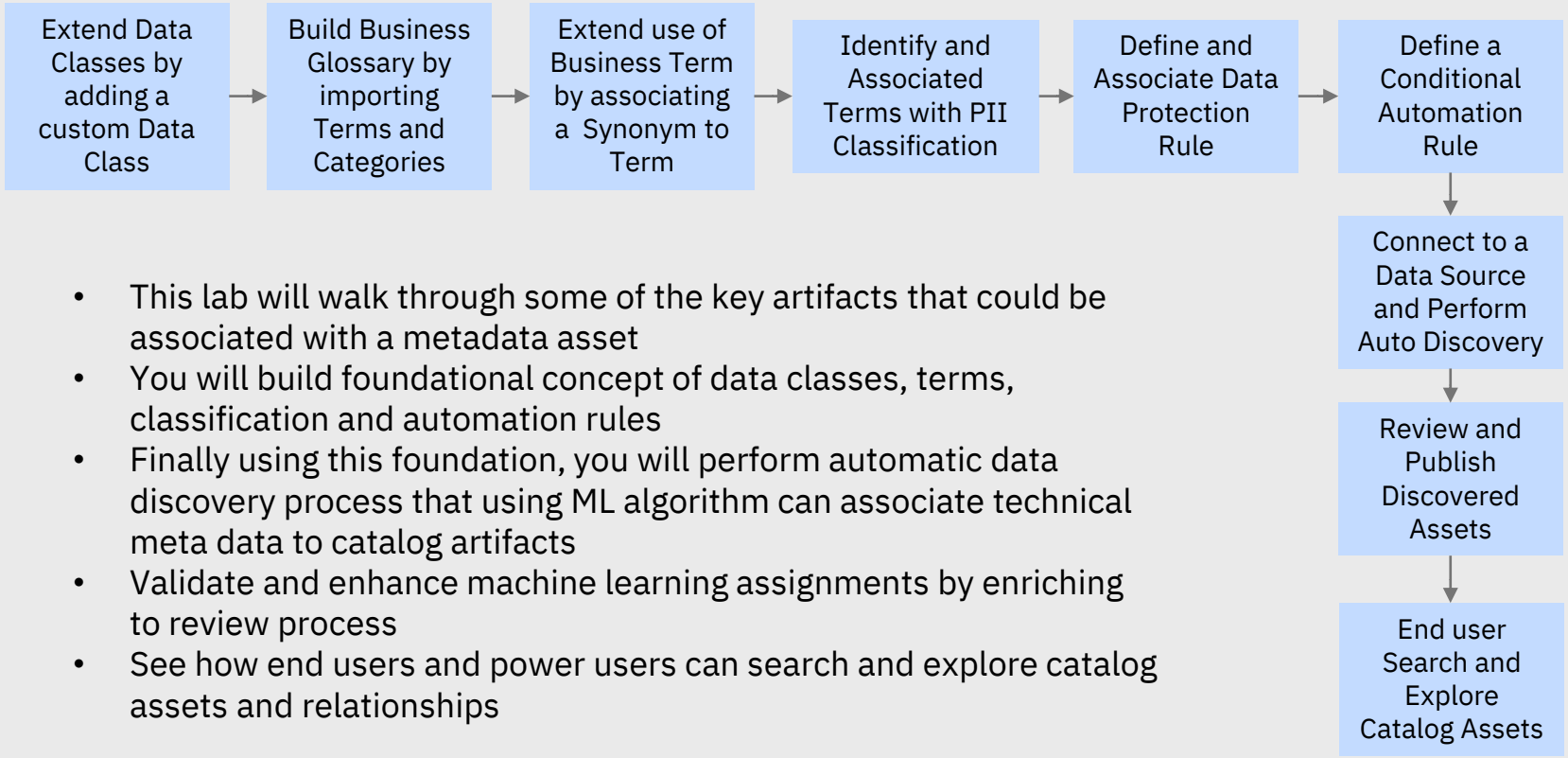
3. Consume Catalog Assets
- Enterprise Search
- Explore Relationship Graph



Auto Classification and Term Assignment



Lab Flow



- This lab will walk through some of the key artifacts that could be associated with a metadata asset
- You will build foundational concept of data classes, terms, classification and automation rules
- Finally using this foundation, you will perform automatic data discovery process that using ML algorithm can associate technical meta data to catalog artifacts
- Validate and enhance machine learning assignments by enriching to review process
- See how end users and power users can search and explore catalog assets and relationships

Lab Setup

Lab document and presentation deck is available at this public git location

https://github.com/vishkamat/think2020_lab5749

- WKC is installed as part of Cloud Pak for Data instance. Skytap is a lab hosting service being used.
- All end user activity will be through Windows virtual machine through browser.
- There are 4 instances of Cloud Pak for data, each with user1 through user10 pre-created
- You will be assigned an instance to login with your user ID and password

- Each instance includes a db2WH database instance which has Patient and Allergies tables created
- A database connection has been created with DB2THINK2020 name
- Since concurrent Auto Discovery jobs may be queued due to concurrent access within same instance, a job has been run and available for you to run through subsequent steps to complete this lab.

Thank you

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