FI Data Lineage Model

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# Fixed Income - Data Lineage Model Documentation

This data lineage model is designed to track the flow of data across systems, applications, and business processes in a financial services trading firm. The model includes nodes and relationships that cover data governance, regulations and compliance, data quality, and data security.

## Core model concepts

### Nodes

* [**Application**](#application): Represents systems or applications that are part of the data flow.
* [**BusinessAttribute**](#businessattribute): Represents attributes of a BusinessTerm (e.g., Customer ID, Customer Name, Email).
* [**BusinessKeyActivity**](#businesskeyactivity): Represents a sub-step of a BusinessProcess.
* [**BusinessProcess**](#sec-BusinessProcess): Represents activities or sets of activities that accomplish a specific organizational goal.
* [**BusinessTerm**](#sec-BusinessTerm): Represents an entity or object that a BusinessProcess operates on (e.g., Customer).
* [**ComplianceOfficer**](#sec-ComplianceOfficer): Represents an individual responsible for ensuring regulatory compliance and overseeing the firm’s adherence to data governance policies.
* [**CompliancePolicy**](#sec-CompliancePolicy): Represents the firm’s internal compliance policies and guidelines.
* [**DataAsset**](#Xe06b9ff65f33b2cd26217da38999b5f61713a86): Represents a data asset, such as a table, file, or database.
* [**DataClassification**](#sec-DataClassification): Represents a logical grouping of types DataElements (e.g. email address, phone number, country code).
* [**DataConfidentiality**](#sec-DataConfidentiality): Represents data security classification levels (e.g., Confidential, Restricted, Public).
* [**DataElement**](#sec-DataElement): Represents the implementation of a BusinessAttribute in a DataSet (e.g., a field in a table).
* [**DataQualityIssue**](#sec-DataQualityIssue): Represents identified data quality problems or violations.
* [**DataQualityMetric**](#sec-DataQualityMetric): Represents quantifiable measures of data quality, such as completeness, accuracy, or timeliness.
* [**DataQualityRule**](#sec-DataQualityRule): Represents rules that define data quality expectations and requirements.
* [**DataSet**](#sec-DataSet): Represents a logical aggregation of DataElements for common use.
* [**LineOfBusiness**](#sec-LineOfBusiness): Represents an organizational unit of the business.
* [**ProcessSteward**](#sec-ProcessSteward): Represents the process equivalent of the data steward.
* [**Regulation**](#sec-Regulation): Represents specific regulatory requirements applicable to the financial services industry (e.g., GDPR, MiFID II, Dodd-Frank).
* [**SystemOfRecord**](#sec-SystemOfRecord): Represents the authoritative data source for a given data element or piece of information.
* [**TradeLifecycle**](#sec-TradeLifecycle): Represents the different stages that a trade goes through, from placement to settlement.
* [**Transformation**](#sec-Transformation): Represents a data transformation process or job.Represents a data transformation process or job.

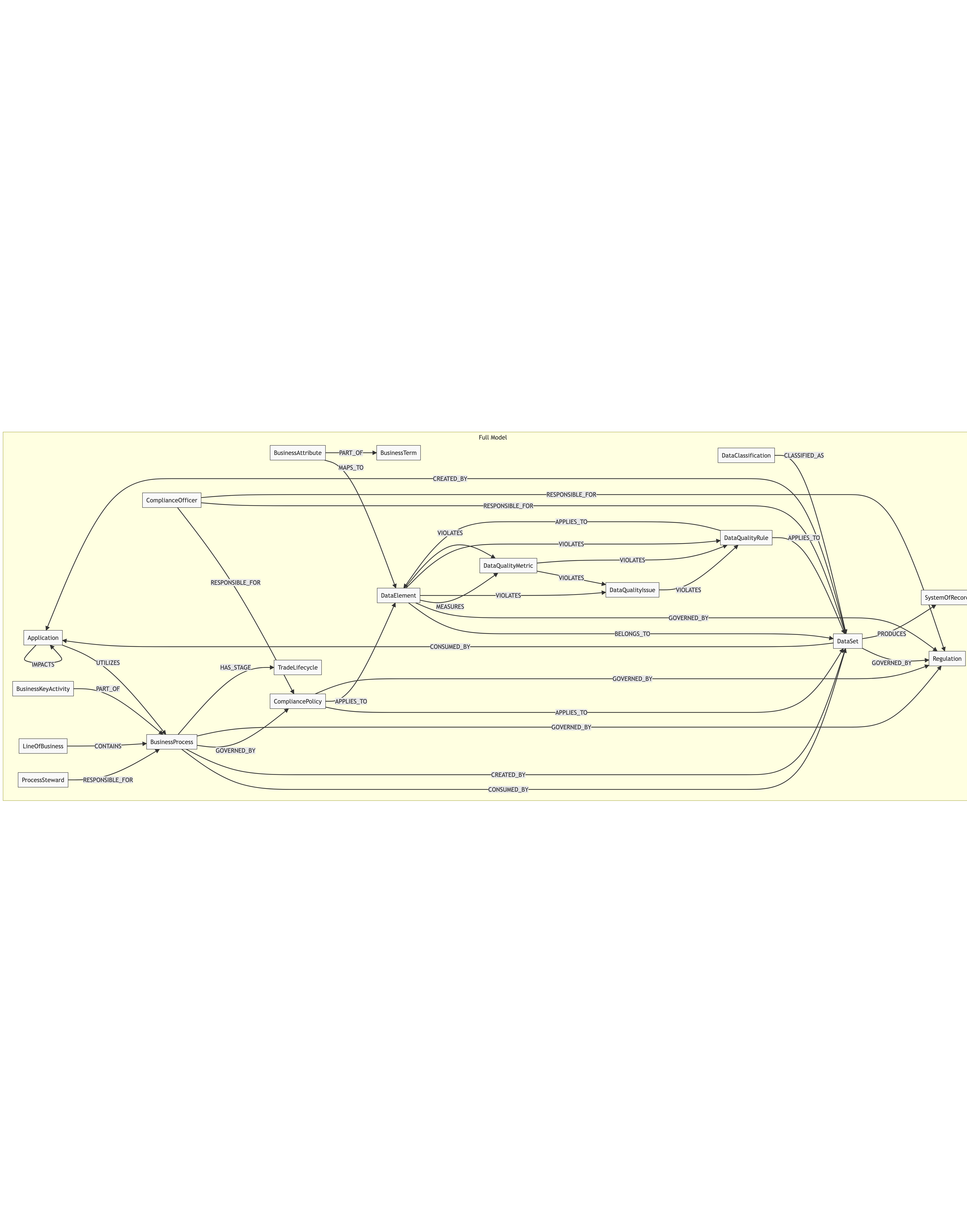
### Relationships

* [**APPLIES\_TO**](#sec-APPLIES_TO): Connects a DataQualityRule to a DataElement or DataSet that it applies to.
* [**CLASSIFIED\_AS**](#sec-CLASSIFIED_AS): Connects a DataSet to a DataConfidentiality, indicating its security classification level.
* [**CONSUMED\_BY**](#sec-CONSUMED_BY): Connects a DataSet (source data) to an Application or BusinessProcess that consumes the data without creating or transforming it.
* [**CREATED\_BY**](#sec-CREATED_BY): Connects a DataSet (output data) to an Application or BusinessProcess that creates or transforms the data.
* [**GOVERNED\_BY**](#sec-GOVERNED_BY): Connects a DataElement, DataSet, or CompliancePolicy to a Regulation, indicating which regulatory requirements apply.
* [**IMPACTS**](#sec-IMPACTS): Connects Applications to show the downstream impact of changes.
* [**MAPS\_TO**](#sec-MAPS_TO): Connects a BusinessAttribute to a DataElement.
* [**MEASURES**](#sec-MEASURES): Connects a DataQualityMetric to a DataElement or DataSet that it measures.
* [**PART\_OF**](#sec-PART_OF): Connects a BusinessAttribute to its corresponding BusinessTerm.
* [**PRODUCES**](#sec-PRODUCES): Connects a SystemOfRecord to a DataSet that it produces as output.
* [**RESPONSIBLE\_FOR**](#sec-RESPONSIBLE_FOR): Connects a ProcessSteward, ComplianceOfficer, or DataSteward to a BusinessProcess, Regulation, CompliancePolicy, or DataAsset, indicating their responsibility for ensuring compliance, data governance, or process oversight.
* [**UTILIZES**](#sec-UTILIZES): Connects a BusinessProcess to an Application that is used to accomplish the process.
* [**VIOLATES**](#sec-VIOLATES): Connects a DataQualityIssue to a DataElement, DataSet, DataQualityRule, or DataQualityMetric that it violates.

## Model Diagrams

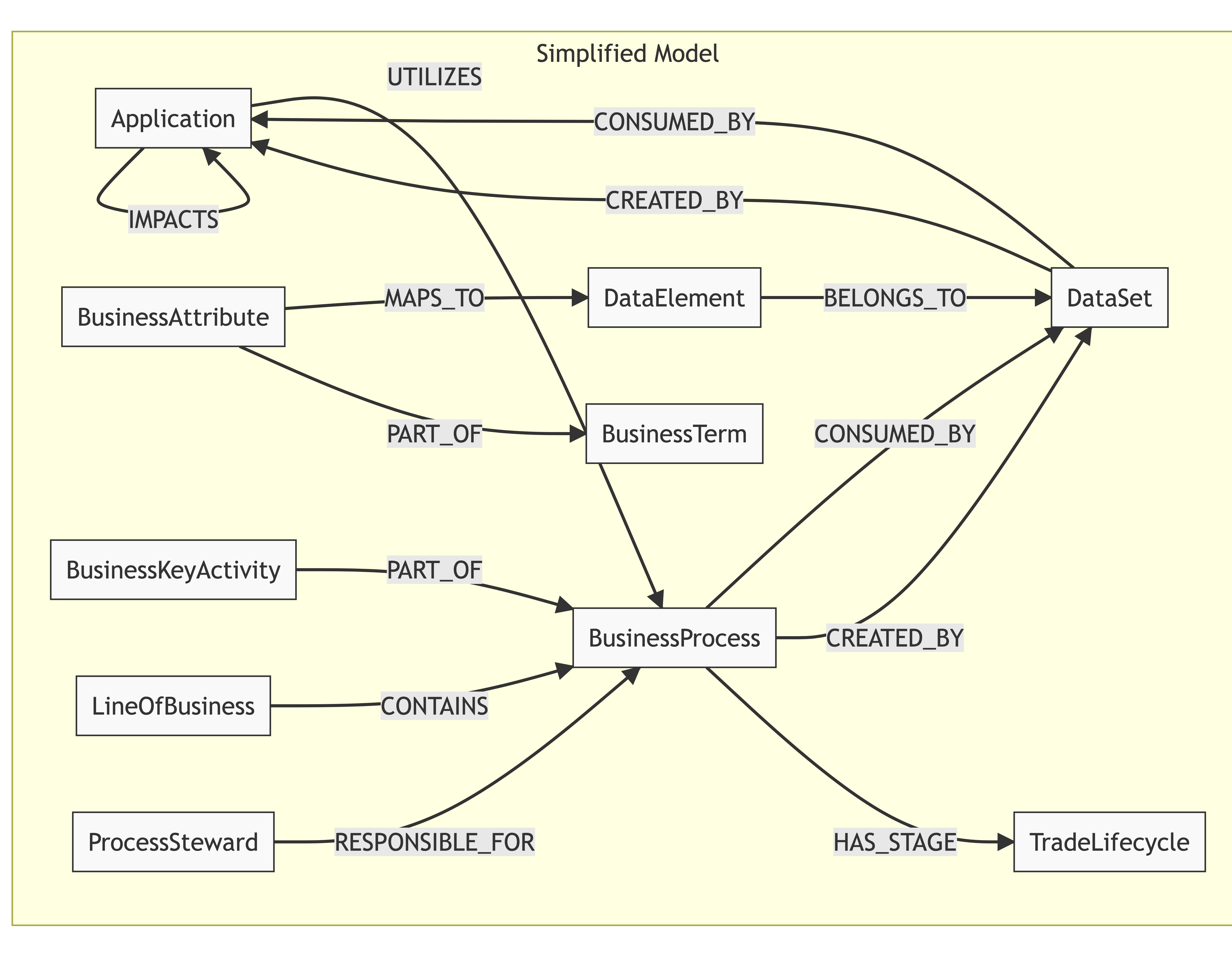
### Full model diagram

The model that we have created is of a higher fidelity than the data that we currently have access to, but to get a sense of the scope of the model, we present a graph that contains the full model for contextualization.



### Simplified model diagram

Here is the simplified version of the model that will be used as the version 1, Minimal Viable Product, of the model.



end

## Node Definitions  
  
/////////////////////////////////////////////////////////////////////////////  
  
### Application  
  
Represents a system or application that is used to process data.  
  
#### \*\*Properties\*\*  
  
- id  
- name  
  
#### \*\*Relationships\*\*   
  
  
```{mermaid}  
%%| label: fig-application-relationships  
%%| fig-width: 7  
%%| fig-cap: |  
%%| Application Relationships  
graph LR  
  
subgraph "Application Relationships"  
 A[Application]:::entity  
 BP[BusinessProcess]:::entity  
 DS[DataSet]:::entity  
  
 A --IMPACTS--> A  
 BP --UTILIZES--> A  
 DS --CONSUMED\_BY--> A  
 DS --CREATED\_BY--> A  
  
classDef entity fill:#f9f9f9,stroke:#333,stroke-width:1px;  
classDef relation fill:#EFEFEF,stroke:#666,stroke-width:1px;  
  
end

* [CONSUMED\_BY](#consumed_by) - Connects a [DataAsset](#dataasset) (source data) to an [Application](#application) or [BusinessProcess](#businessprocess)
* [IMPACTS](#impacts) - Connects an [Application](#application) to other related assets, such as other [Application](#application), [DataAsset](#dataasset) or [DataElement](#dataelement)
* [UTILIZES](#utilizes) - Connects a [BusinessProcess](#businessprocess) to an [Application](#application)

#### **Example**

(app:Application {  
 id: 'app1',  
 name: 'NAPA'  
})

/////////////////////////////////////////////////////////////////////////////

### BusinessAttribute

Represents a property or characteristic of a BusinessTerm.

#### **Properties**

* id
* name
* description

#### **Relationships**

* [HAS\_ATTRIBUTE](#has_attribute) - Connects a [BusinessTerm](#businessterm) node to a [BusinessAttribute](#businessattribute)
* [MAPS\_TO](#MAPS_TO) - Connects a [BusinessAttribute](#businessattribute) node to a [DataElement](#dataelement) node

#### **Example**

(ba:BusinessAttribute {  
 id: : 'ba1',  
 name: 'Customer ID',  
 description: 'Unique id: for a customer'  
})

/////////////////////////////////////////////////////////////////////////////

### BusinessProcess

Represents a business process or set of activities that accomplish a specific organizational goal.

#### **Properties**

* id
* name
* description

#### **Relationships**

* [CONSUMED\_BY](#consumed_by) - Connects a [DataAsset](#dataasset) (source data) to an [Application](#application) or [BusinessProcess](#businessprocess)
* [INVOLVES](#involves) - Connects a [BusinessProcess](#businessprocess) node to a [DataAsset](#dataasset) node or a [Transformation](#transformation) node
* [MANAGES\_PROCESS](#MANAGES_PROCESS) - Connects a [ProcessSteward](#processsteward) node to a [BusinessProcess](#businessprocess) node
* [UTILIZES](#utilizes) - Connects a [BusinessProcess](#businessprocess) to an [Application](#application)

#### **Example**

(bp:BusinessProcess {  
 id: 'bp1',  
 name: 'Customer Onboarding',  
 description: 'Process for onboarding new customers'  
})

/////////////////////////////////////////////////////////////////////////////

### BusinessTerm

Represents an entity or object that a BusinessProcess operates on.

#### **Properties**

* id
* name
* description

#### **Relationships**

* [HAS\_ATTRIBUTE](#has_attribute) - Connects a [BusinessTerm](#businessterm) node to a [BusinessAttribute](#businessattribute)

#### **Example**

(bt:BusinessTerm {  
 id: : 'bt1',  
 name: 'Customer',  
 description: 'A customer entity in the organization'  
})

/////////////////////////////////////////////////////////////////////////////

### ComplianceOfficer

Represents an individual responsible for ensuring regulatory compliance and overseeing the firm’s adherence to data governance policies.

#### **Properties**

* id
* name
* title

#### **Relationships**

* [RESPONSIBLE\_FOR](#responsible_for) - Connects a [ComplianceOfficer](#complianceofficer) to a [Regulation](#regulation), [CompliancePolicy](#compliancepolicy), or [DataAsset](#dataasset)

#### **Example**

(co:ComplianceOfficer {  
 id: : 'co1',  
 name: 'John Doe',  
 title: 'Chief Compliance Officer'  
})

/////////////////////////////////////////////////////////////////////////////

### CompliancePolicy

Represents the firm’s internal compliance policies and guidelines.

#### **Properties**

* id
* name
* description

#### **Relationships**

* [GOVERNED\_BY](#governed_by) - Connects a [DataAsset](#dataasset) or [DataElement](#dataelement) to a [Regulation](#regulation) or [CompliancePolicy](#compliancepolicy)
* [RESPONSIBLE\_FOR](#responsible_for) - Connects a [ComplianceOfficer](#complianceofficer) to a [Regulation](#regulation), [CompliancePolicy](#compliancepolicy), or [DataAsset](#dataasset)

#### **Example**

(cp:CompliancePolicy {  
 id: : 'cp1',  
 name: 'Data Retention Policy',  
 description: 'Policy for data retention and disposal'  
})

/////////////////////////////////////////////////////////////////////////////

### DataAsset

Represents a data asset, such as a table, file, or database. A type of asset that represents details of organizational data in two layers. One layer is independent of any particular technology for non-technical stakeholder communication. The other one is taking the implementation system for technical stakeholder communication into account.

#### **Properties**

* id
* name
* description
* type

#### **Relationships**

* [ACCOUNTABLE\_FOR](#accountable_for) - Connects a [SystemOfRecord](#systemofrecord) node to a [DataAsset](#dataasset) node
* [APPLIES](#applies) - Connects a [DataQualityRule](#dataqualityrule) to a [DataAsset](#dataasset) or [DataElement](#dataelement)
* [CLASSIFIED\_AS](#classified_as) - Connects a [DataAsset](#dataasset) or [DataElement](#dataelement) to a [DataClassification](#dataclassification)
* [CONSUMED\_BY](#consumed_by) - Connects a [DataAsset](#dataasset) (source data) to an [Application](#application) or [BusinessProcess](#businessprocess)
* [CONTAINS](#contains) - Connects a [DataAsset](#dataasset) node to a [DataElement](#dataelement) node.
* [DERIVED\_FROM](#derived_from) - Connects a [DataAsset](#dataasset) (representing the view) to another [DataAsset](#dataasset) (representing the source data)
* [GOVERNED\_BY](#governed_by) - Connects a [DataAsset](#dataasset) or [DataElement](#dataelement) to a [Regulation](#regulation) or [CompliancePolicy](#compliancepolicy)
* [MEASURES](#measures) - Connects a [DataQualityMetric](#dataqualitymetric) to a [DataAsset](#dataasset) or [DataElement](#dataelement)
  + [RESPONSIBLE\_FOR](#accountable_for) - Connects a [DataSteward](#datasteward) node to a [DataAsset](#dataasset) node
* [RESPONSIBLE\_FOR](#responsible_for) - Connects a [ComplianceOfficer](#complianceofficer) to a [Regulation](#regulation), [CompliancePolicy](#compliancepolicy), or [DataAsset](#dataasset)
* [VIOLATES](#violates) - Connects a [DataQualityIssue](#dataqualityissue) to a [DataQualityRule](#DataQualityRule), [DataQualityMetric](#dataqualitymetric), [DataAsset](#dataasset), or [DataElement](#dataelement)

#### **Example**

(d:DataAsset {  
 identifier: 'table1',   
 name: 'Table 1',   
 description: 'Sales data',   
 type: 'table'  
})

/////////////////////////////////////////////////////////////////////////////

### DataClassification

Represents data security classification levels (e.g., Confidential, Restricted, Public).

#### **Properties**

* id
* name
* description

##### **Relationships**

* [CLASSIFIED\_AS](#classified_as) - Connects a [DataAsset](#dataasset) or [DataElement](#dataelement) to a [DataClassification](#dataclassification)

#### **Example**

(dc:DataClassification {  
 id: : 'dc1',  
 name: 'Confidential',  
 description: 'Highly sensitive data requiring strict access control'  
})

/////////////////////////////////////////////////////////////////////////////

### DataElement

Represents a field (column) within a data asset.

#### **Properties**

* id
* name
* description
* dataType

#### **Relationships**

* [APPLIES](#applies) - Connects a [DataQualityRule](#dataqualityrule) to a [DataAsset](#dataasset) or [DataElement](#dataelement)
* [CLASSIFIED\_AS](#classified_as) - Connects a [DataAsset](#dataasset) or [DataElement](#dataelement) to a [DataClassification](#dataclassification)
* [CONTAINS](#contains) - Connects a [DataAsset](#dataasset) node to a [DataElement](#dataelement) node.
* [GENERATED\_BY](#generated_by)- Connects a [DataElement](#dataelement) node to a [Transformation](#transformation) node
* [GOVERNED\_BY](#governed_by) - Connects a [DataAsset](#dataasset) or [DataElement](#dataelement) to a [Regulation](#regulation) or [CompliancePolicy](#compliancepolicy)
* [IMPACTS](#impacts) - Connects an [Application](#application) to other related assets, such as other [Application](#application), [DataAsset](#dataasset) or [DataElement](#dataelement)
* [MAPS\_TO](#MAPS_TO) - Connects a [BusinessAttribute](#businessattribute) node to a [DataElement](#dataelement) node
* [MEASURES](#measures) - Connects a [DataQualityMetric](#dataqualitymetric) to a [DataAsset](#dataasset) or [DataElement](#dataelement)
* [TRANSFORMS\_TO](#transforms_to) - Connects a [[DataElement](#dataelement) node to another [DataElement](#dataelement) node
* [VIOLATES](#violates) - Connects a [DataQualityIssue](#dataqualityissue) to a [DataQualityRule](#DataQualityRule), [DataQualityMetric](#dataqualitymetric), [DataAsset](#dataasset), or [DataElement](#dataelement)

#### **Example**

(de:DataElement {  
 identifier: 'column1',   
 name: 'CustomerID',   
 description: 'Unique customer identifier',   
 dataType: 'integer’  
})

/////////////////////////////////////////////////////////////////////////////

### DataQualityIssue

Represents identified data quality problems or violations.

#### **Properties**

* id
* description
* severity

#### **Relationships**

* [VIOLATES](#violates) - Connects a [DataQualityIssue](#dataqualityissue) to a [DataQualityRule](#DataQualityRule), [DataQualityMetric](#dataqualitymetric), [DataAsset](#dataasset), or [DataElement](#dataelement)

#### **Example**

(dqi:DataQualityIssue {  
 id: : 'dqi1',  
 description: 'Missing customer email',  
 severity: 'Medium'  
})

/////////////////////////////////////////////////////////////////////////////

### DataQualityMetric

Represents quantifiable measures of data quality, such as completeness, accuracy, or timeliness.

#### **Properties**

* id
* name
* description

#### **Relationships**

* [MEASURES](#measures) - Connects a [DataQualityMetric](#dataqualitymetric) to a [DataAsset](#dataasset) or [DataElement](#dataelement)
* [VIOLATES](#violates) - Connects a [DataQualityIssue](#dataqualityissue) to a [DataQualityRule](#DataQualityRule), [DataQualityMetric](#dataqualitymetric), [DataAsset](#dataasset), or [DataElement](#dataelement)

#### **Example**

(dqm:DataQualityMetric {  
 id: : 'dqm1',  
 name: 'Accuracy',  
 description: 'Measure of data accuracy'  
})

/////////////////////////////////////////////////////////////////////////////

### DataQualityRule

Represents rules that define data quality expectations and requirements.

#### **Properties**

* id
* name
* description

#### **Relationships**

* [APPLIES](#applies) - Connects a [DataQualityRule](#dataqualityrule) to a [DataAsset](#dataasset) or [DataElement](#dataelement)
* [VIOLATES](#violates) - Connects a [DataQualityIssue](#dataqualityissue) to a [DataQualityRule](#DataQualityRule), [DataQualityMetric](#dataqualitymetric), [DataAsset](#dataasset), or [DataElement](#dataelement)

#### **Example**

(dqr:DataQualityRule {  
 id: : 'dqr1',  
 name: 'Completeness Rule',  
 description: 'Rule to ensure data completeness'  
})

/////////////////////////////////////////////////////////////////////////////

### DataSet

A collection of related sets of data assets that are data elements or composed of data elements.

#### **Properties**

* id
* name
* description

#### **Relationships**

* [ACCOUNTABLE\_FOR](#accountable_for) - Connects a [SystemOfRecord](#systemofrecord) node to a [DataAsset](#dataasset) node
* [AGGREGATES](#aggregates) - Connects a [DataSet](#dataset) node to a [DataElement](#dataelement)
* [APPLIES](#applies) - Connects a [DataQualityRule](#dataqualityrule) to a [DataAsset](#dataasset) or [DataElement](#dataelement)
* [IMPACTS](#impacts) - Connects an [Application](#application) to other related assets, such as other [Application](#application), [DataAsset](#dataasset) or [DataElement](#dataelement)
* [INVOLVES](#involves) - Connects a [BusinessProcess](#businessprocess) node to a [DataAsset](#dataasset) node or a [Transformation](#transformation) node

#### **Example**

(ds:DataSet {  
 id: : 'ds1',  
 name: 'CustomerDataSet',  
 description: 'A dataset containing customer information’  
})

/////////////////////////////////////////////////////////////////////////////

### DataSteward

Represents a person responsible for managing data assets and ensuring data quality and governance.

#### **Properties**

* id
* name
* email

#### **Relationships**

* [RESPONSIBLE\_FOR](#accountable_for) - Connects a [DataSteward](#datasteward) node to a [DataAsset](#dataasset) node

#### **Example**

(s:DataSteward {  
 id: 'steward1',   
 name: 'Alice',   
 email: 'alice@example.com'  
})

/////////////////////////////////////////////////////////////////////////////

### ProcessSteward

Represents a person responsible for managing and ensuring the quality and governance of a business process.

#### **Properties**

* id
* name
* email

### **Relationships**

* [ACCOUNTABLE\_FOR](#ACCOUNTABLE_FOR) - [ProcessSteward](#processsteward) node to a [SystemOfRecord](#systemofrecord) node
* [MANAGES\_PROCESS](#MANAGES_PROCESS) - Connects a [ProcessSteward](#processsteward) node to a [BusinessProcess](#businessprocess) node

#### **Example**

(ps:ProcessSteward {  
 id: : 'psteward1',  
 name: 'Bob',  
 email: 'bob@example.com’  
})

/////////////////////////////////////////////////////////////////////////////

### Regulation

Represents specific regulatory requirements applicable to the financial services industry (e.g., GDPR, MiFID II, Dodd-Frank).

#### **Properties**

* id
* name
* description

#### **Relationships**

* [GOVERNED\_BY](#governed_by) - Connects a [DataAsset](#dataasset) or [DataElement](#dataelement) to a [Regulation](#regulation) or [CompliancePolicy](#compliancepolicy)
* [RESPONSIBLE\_FOR](#responsible_for) - Connects a [ComplianceOfficer](#complianceofficer) to a [Regulation](#regulation), [CompliancePolicy](#compliancepolicy), or [DataAsset](#dataasset)

#### **Example**

(r:Regulation {  
 id: : 'r1',  
 name: 'GDPR',  
 description: 'General Data Protection Regulation'  
})

/////////////////////////////////////////////////////////////////////////////

### SystemOfRecord

Represents the authoritative data source for a given data element or piece of information.

#### **Properties**

* id
* name
* description

#### **Relationships**

* [ACCOUNTABLE\_FOR](#accountable_for) - Connects a [SystemOfRecord](#systemofrecord) node to a [DataAsset](#dataasset) node

#### **Example**

(sor:SystemOfRecord {  
 id: 'sor1',  
 name: 'Customer Master Data',  
 description: 'Authoritative source for customer information'  
})

/////////////////////////////////////////////////////////////////////////////

### Transformation

Represents a data transformation process or job.

#### **Properties**

* id
* name
* description
* type

#### **Relationships**

* [GENERATED\_BY](#generated_by)- Connects a [DataElement](#dataelement) node to a [Transformation](#transformation) node
* [INVOLVES](#involves) - Connects a [BusinessProcess](#businessprocess) node to a [DataAsset](#dataasset) node or a [Transformation](#transformation) node

#### **Example**

(t:Transformation {  
 identifier: 'job1',   
 name: 'Data Cleansing Job',   
 description: 'Cleans and prepares data for analysis',   
 type: 'ETL'  
})

## Relationships

/////////////////////////////////////////////////////////////////////////////

### ACCOUNTABLE\_FOR:

Connects a [ProcessSteward](#processsteward) node to a [SystemOfRecord](#systemofrecord) node, indicating that the person is accountable for the authoritative data source.

#### **Example**

(ps:[ProcessSteward](#processsteward))-[:ACCOUNTABLE\_FOR]->(sor:SystemOfRecord)

/////////////////////////////////////////////////////////////////////////////

### AGGREGATES:

Connects a [DataSet](#dataset) node to a [DataElement](#dataelement) or node, representing the aggregation of [DataElement](#dataelement)s for common use.

#### **Example**

(ds:DataSet)-[:AGGREGATES]->(de:DataElement)

/////////////////////////////////////////////////////////////////////////////

### APPLIES

Connects a [DataQualityRule](#dataqualityrule) to a [DataAsset](#dataasset) or [DataElement](#dataelement), indicating that the rule applies to the specific data.

#### **Example**

(dqr:DataQualityRule)-[:APPLIES]->(d:DataAsset)

/////////////////////////////////////////////////////////////////////////////

### AUTHORITATIVE\_SOURCE

Connects a [SystemOfRecord](#systemofrecord) node to a [DataAsset](#dataasset) node, indicating that the data asset is the authoritative source for specific data elements.

#### **Example**

(sor:SystemOfRecord)-[:AUTHORITATIVE\_SOURCE]->(d:DataAsset)

/////////////////////////////////////////////////////////////////////////////

### CLASSIFIED\_AS

Connects a [DataAsset](#dataasset) or [DataElement](#dataelement) to a [DataClassification](#dataclassification), indicating the security classification level of the specific data.

#### **Example**

(d:DataAsset)-[:CLASSIFIED\_AS]->(dc:DataClassification)

/////////////////////////////////////////////////////////////////////////////

### CONSUMED\_BY

Connects a [DataAsset](#dataasset) (source data) to an [Application](#application) or [BusinessProcess](#businessprocess) that consumes the data without creating or transforming it.

#### **Example**

(d:DataAsset {type: 'Table'})-[:CONSUMED\_BY]->(a:Application)  
or  
   
#### \*\*Example\*\*   
  
``` cypher  
  
(d:DataAsset {type: 'Table'})-[:CONSUMED\_BY]->(bp:BusinessProcess)

/////////////////////////////////////////////////////////////////////////////

### CONTAINS

Connects a [DataAsset](#dataasset) node to a [DataElement](#dataelement) node.

#### **Example**

(d:DataAsset)-[:CONTAINS]->(de:DataElement)

/////////////////////////////////////////////////////////////////////////////

### DERIVED\_FROM

Connects a [DataAsset](#dataasset) (representing the view) to another [DataAsset](#dataasset) (representing the source data), indicating that the view is derived from the source data.

#### **Example**

(v:DataAsset {type: 'View'})-[:DERIVED\_FROM]->(d:DataAsset {type: 'Table'})

/////////////////////////////////////////////////////////////////////////////

### GENERATED\_BY

Connects a [DataElement](#dataelement) node to a [Transformation](#transformation) node, indicating that the field was generated by a particular transformation process.

#### **Example**

(de:DataElement)-[:GENERATED\_BY]->(t:Transformation)

/////////////////////////////////////////////////////////////////////////////

### GOVERNED\_BY

Connects a [DataAsset](#dataasset) or [DataElement](#dataelement) to a [Regulation](#regulation) or [CompliancePolicy](#compliancepolicy), indicating that the data is subject to specific regulatory requirements or policies.

#### **Example**

(d:DataAsset)-[:GOVERNED\_BY]->(r:Regulation)

/////////////////////////////////////////////////////////////////////////////

### HAS\_ATTRIBUTE

Connects a [BusinessTerm](#businessterm) node to a [BusinessAttribute](#businessattribute) node.

#### **Example**

(bt:BusinessTerm)-[:HAS\_ATTRIBUTE]->(ba:BusinessAttribute)

/////////////////////////////////////////////////////////////////////////////

### IMPACTS

Connects an [Application](#application) to other related assets, such as other [Application](#application), [DataAsset](#dataasset) or [DataElement](#dataelement), to represent the influence or effect the [Application](#application) has on these assets, particularly when changes occur within the [Application](#application) .

#### **Example**

(a:Application)-[:IMPACTS]->(d:DataAsset {type: 'Table'})  
or  
   
#### \*\*Example\*\*   
  
``` cypher  
  
(a:Application)-[:IMPACTS]->(de:DataElement)  
or  
   
#### \*\*Example\*\*   
  
``` cypher  
  
(a1:Application)-[:IMPACTS]->(a2:Application)

/////////////////////////////////////////////////////////////////////////////

### INVOLVES

Connects a [BusinessProcess](#businessprocess) node to a [DataAsset](#dataasset) node or a [Transformation](#transformation) node, indicating that the process involves the use or modification of the data asset or transformation.

#### **Example**

(bp:BusinessProcess)-[:INVOLVES]->(d:DataAsset)  
   
#### \*\*Example\*\*   
  
``` cypher  
  
(bp:BusinessProcess)-[:INVOLVES]->(t:Transformation)

/////////////////////////////////////////////////////////////////////////////

### MANAGES\_PROCESS

Connects a [ProcessSteward](#processsteward) node to a [BusinessProcess](#businessprocess) node, indicating that the person is responsible for managing the business process.

#### **Example**

(ps:ProcessSteward)-[:MANAGES\_PROCESS]->(bp:BusinessProcess)

/////////////////////////////////////////////////////////////////////////////

### MAPS\_TO

Connects a [BusinessAttribute](#businessattribute) node to a [DataElement](#dataelement) node.

#### **Example**

(ba:BusinessAttribute)-[:MAPS\_TO]->(de:DataElement)

/////////////////////////////////////////////////////////////////////////////

### MEASURES

Connects a [DataQualityMetric](#dataqualitymetric) to a [DataAsset](#dataasset) or [DataElement](#dataelement), indicating that the metric is used to measure the quality of the specific data.

#### **Example**

(dqm:DataQualityMetric)-[:MEASURES]->(d:DataAsset)

/////////////////////////////////////////////////////////////////////////////

### RESPONSIBLE\_FOR

Connects a [ComplianceOfficer](#complianceofficer) to a [Regulation](#regulation), [CompliancePolicy](#compliancepolicy), or [DataAsset](#dataasset), indicating their responsibility for ensuring compliance.

#### **Example**

(co:ComplianceOfficer)-[:RESPONSIBLE\_FOR]->(r:Regulation)

/////////////////////////////////////////////////////////////////////////////

### TRANSFORMS\_TO

Connects a [[DataElement](#dataelement) node to another [DataElement](#dataelement) node, representing the transformation from one field to another in a data transformation process.

#### **Example**

(de1:DataElement)-[:TRANSFORMS\_TO {transformationId: 'job1'}]->(de2:DataElement)

/////////////////////////////////////////////////////////////////////////////

### UTILIZES

Connects a [BusinessProcess](#businessprocess) to an [Application](#application) that is used to accomplish the process.

#### **Example**

(bp:BusinessProcess)-[:UTILIZES]->(a:Application)

/////////////////////////////////////////////////////////////////////////////

### VIOLATES

Connects a [DataQualityIssue](#dataqualityissue) to a [DataQualityRule](#DataQualityRule), [DataQualityMetric](#dataqualitymetric), [DataAsset](#dataasset), or [DataElement](#dataelement), indicating that the issue represents a violation of the rule or metric or is related to the specific data.

#### **Example**

(dqi:DataQualityIssue)-[:VIOLATES]->(dqr:DataQualityRule)

/////////////////////////////////////////////////////////////////////////////