



Lebanese University

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Branch II

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PhD in Data Mining - Computer Science

Metadata

Data Science - Semester 4

Types of Metadata

- › The metadata application is manifold, covering a large variety of fields, there are specialized and well-accepted models to specify types of metadata.
- › **Bretherton & Singley (1994)** distinguish between two distinct classes: **structural/control** metadata and **guide** metadata.
 - › **Structural metadata** describes the structure of database objects such as tables, columns, keys and indexes.
 - › **Guide metadata** helps humans find specific items and are usually expressed as a set of keywords in a natural language.

Types of Metadata

- › **Ralph Kimball** divided metadata into 2 similar categories:
 - › **Technical metadata** corresponds to internal metadata,
 - › **Business metadata** corresponds to external metadata.
- **Kimball** added a third category, **process metadata**.

Types of Metadata

- › **NISO** National Information Standards Organization distinguishes among three types of metadata:
 - Descriptive metadata, Structural metadata, and Administrative metadata.
- › ***Descriptive metadata*** is typically used for discovery and identification, as information to search and locate an object, such as title, author, subjects, keywords, publisher.
- › ***Structural metadata*** describes how the components of an object are organized. An example of structural metadata would be how pages are ordered to form chapters of a book.

Types of Metadata

- › **Administrative metadata** gives information to help manage the source. Administrative metadata refers to the technical information, including file type, or when and how the file was created and who can access it.
- › There are several subsets of administrative data; two that are sometimes listed as separate metadata types are:
 - › **Rights management metadata**, which deals with intellectual property rights,
 - › **Preservation metadata**, which contains information needed to archive and preserve a resource.



Types	Definition	Examples
Administrative	Metadata used in managing and administering collections and information resources.	<ul style="list-style-type: none">▪ Acquisition information▪ Rights and reproduction tracking▪ Documentation of legal access requirements▪ Location information
Descriptive	Metadata used to identify and describe collections and related information resources.	<ul style="list-style-type: none">▪ Cataloguing records▪ Finding aids▪ Differentiations between versions▪ Hyperlinked relationships between resources
Preservation	Metadata related to the preservation management of collections and information resources	<ul style="list-style-type: none">▪ Documentation of physical condition of resources▪ Documentation of actions taken to preserve physical and digital versions of resources.▪ Documentation of any changes occurring during digitization or preservation.

Types	Definition	Example
Technical	Metadata related to how a system functions or metadata behaves.	<ul style="list-style-type: none">▪ Hardware and software documentation▪ Technical digitization information▪ Tracking of system response times▪ Authentication and security data, e.g., encryption keys, passwords.
Use	Metadata related to the level and type of use of collections and information resources.	<ul style="list-style-type: none">▪ Circulation records▪ Physical and digital exhibition records▪ Use and user tracking▪ Content reuse and multi versioning information▪ Search logs▪ Rights metadata