Specialist Certification in Digital Preservation

Digital Preservation Tools and Technologies

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Digital Preservation Tools and Technologies refer to the software applications, hardware devices, and methodologies used to ensure the long-term viability, accessibility, and usability of digital materials. These tools and technologies play a crucial role in safeguarding digital content from degradation, obsolescence, and loss, thereby preserving it for future generations.

Accessioning

Accessioning is the process of formally taking custody of digital materials into a repository or archive. It involves the creation of metadata records, assigning unique identifiers, and verifying the integrity of the digital objects. Accessioning ensures that digital materials are properly documented and managed within a preservation system.

Archival Information Package (AIP)

An Archival Information Package (AIP) is a standardized package containing all the necessary components to preserve and provide access to a digital object over time. It includes the content, metadata, and any associated documentation required for long-term preservation. AIPs are typically stored in a secure repository and can be migrated or transformed as needed to ensure their continued accessibility.

Checksum

A checksum is a unique value calculated from the contents of a digital file using an algorithm such as MD5 or SHA-256. It serves as a digital fingerprint to verify the integrity of the file and detect any changes or corruption that may have occurred. Checksums are commonly used in digital preservation to ensure the authenticity and reliability of digital objects.

Content Information

Content Information refers to the actual data or intellectual content of a digital object, such as text, images, audio, or video. It is essential for preserving the meaningful content of digital materials and ensuring their accurate representation over time. Content Information is typically stored alongside metadata in a preservation system.

Dark Archive

A Dark Archive is a secure storage facility designed to preserve digital materials without providing immediate access to users. It is often used as a backup or disaster recovery solution to safeguard against data loss or corruption. Dark Archives are maintained in offline or offline storage systems to protect digital

objects from unauthorized access or tampering.

Data Migration

Data Migration is the process of transferring digital materials from one storage system or format to another to ensure continued access and usability. It involves copying, converting, or reformatting digital objects to prevent data loss, degradation, or obsolescence. Data Migration is a critical component of digital preservation to adapt to changing technologies and standards.

Database Archiving

Database Archiving is the practice of preserving structured data stored in databases for long-term access and retrieval. It involves capturing the schema, content, and metadata of a database and storing it in a preservation system. Database Archiving ensures the integrity and authenticity of digital information contained in databases over time.

Digitization

Digitization is the process of converting analog materials, such as paper documents, photographs, or audio recordings, into digital formats. It involves scanning, capturing, or encoding analog content into digital files for preservation and access. Digitization enables the long-term retention and dissemination of cultural heritage materials in digital form.

File Format

A File Format is a standardized structure for encoding digital data, such as text, images, audio, or video, in a computer file. It defines how data is organized, stored, and represented in a digital format. File Formats play a crucial role in digital preservation by ensuring the compatibility, sustainability, and usability of digital objects over time.

Fixity Checking

Fixity Checking is the process of verifying the integrity and authenticity of digital objects by comparing checksums or cryptographic hashes over time. It involves periodically recalculating checksums for digital files and comparing them to previously recorded values to detect any changes or corruption. Fixity Checking helps ensure the trustworthiness and reliability of digital materials in a preservation system.

Hardware Emulation

Hardware Emulation is a preservation strategy that involves replicating the functionality of obsolete or legacy hardware systems to access and run outdated software applications. It simulates the behavior of original hardware components, such as processors, memory, and peripherals, to preserve the authenticity and functionality of digital objects. Hardware Emulation enables the emulation of obsolete hardware platforms to access and interpret legacy digital materials.

Information Package

An Information Package is a structured set of digital objects, metadata, and documentation that constitutes a unit of information for preservation purposes. It includes the content, context, and structure of digital materials to ensure their long-term accessibility and usability. Information Packages are commonly used in digital preservation to organize, manage, and store digital objects in a systematic manner.

Metadata

Metadata is descriptive information that describes the content, context, and structure of digital objects to facilitate their discovery, management, and preservation. It includes details such as title, creator, date, format, and rights associated with digital materials. Metadata plays a critical role in digital preservation by providing essential information for identifying, organizing, and accessing digital objects over time.

Normalization

Normalization is the process of converting digital objects into standardized formats or structures to ensure their compatibility and sustainability. It involves transforming data from diverse sources or formats into a common representation that can be easily preserved and accessed. Normalization helps mitigate the risks of format obsolescence, data loss, and incompatibility in a digital preservation environment.

Open Archival Information System (OAIS)

The Open Archival Information System (OAIS) is a reference model for the long-term preservation of digital materials developed by the International Organization for Standardization (ISO). It defines a framework for managing and preserving digital objects within an archive or repository. OAIS provides guidelines for ingest, storage, access, and dissemination of digital materials to ensure their integrity, authenticity, and usability over time.

Preservation Metadata

Preservation Metadata is a specific type of metadata that captures essential information about the long-term preservation of digital objects. It includes details such as fixity information, provenance, rights management, and technical specifications related to the preservation of digital materials. Preservation Metadata helps ensure the integrity, authenticity, and usability of digital objects throughout their lifecycle.

Repository

A Repository is a dedicated storage system or platform used to store, manage, and preserve digital materials for long-term access and retrieval. It provides a secure and reliable environment for ingesting, organizing, and disseminating digital objects to users. Repositories play a crucial role in digital preservation by ensuring the integrity, authenticity, and availability of digital materials over time.

Risk Management

Risk Management is the process of identifying, assessing, and mitigating potential threats to the long-term preservation of digital materials. It involves evaluating risks such as data loss, format obsolescence, hardware failure, and human error that may impact the integrity and accessibility of digital objects. Risk

Management helps develop strategies and policies to safeguard digital materials from vulnerabilities and ensure their continued preservation.

Storage Media

Storage Media refers to physical devices used to store digital objects, such as hard drives, tape drives, optical discs, or cloud storage. It provides a means of retaining and accessing digital materials over time. Storage Media must be carefully selected, maintained, and monitored to ensure the longevity, reliability, and security of digital objects in a preservation system.

Trusted Digital Repository

A Trusted Digital Repository is an organization or system that meets established standards for the long-term preservation of digital materials. It demonstrates adherence to best practices, policies, and procedures for managing and safeguarding digital objects. A Trusted Digital Repository ensures the integrity, authenticity, and accessibility of digital materials to users and stakeholders.

Web Archiving

Web Archiving is the practice of capturing and preserving online content, such as websites, social media, and multimedia, for long-term access and research. It involves crawling, indexing, and storing web pages in a web archive to document the evolution of digital information on the internet. Web Archiving enables the preservation of digital materials distributed across the web for future generations.

XML

XML (eXtensible Markup Language) is a standardized markup language used to encode and structure digital data in a human-readable format. It provides a flexible and extensible framework for describing the content, metadata, and structure of digital objects. XML is commonly used in digital preservation for creating interoperable, machine-readable representations of information for long-term access and usability.