

- ARCH@RITAGE toward a new approach to archival studies for cultural heritage?
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- Università, Ca' Foscari Venezia, Italy

• Farewell to old certainties?



• From the Dictionary of the Society of American Archivists

archival record

n.

• Materials created or received by a person, family, or organization, public or private, in the conduct of their affairs that are preserved because of the enduring value contained in the information they contain or as evidence of the functions and responsibilities of their **creator**.





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Images are fundamental information carriers for cultural heritage



ALL digital objects are archival records?

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Notes

'Archival records' connotes documents rather than artifacts or published materials, although collections of archival records may contain artifacts and books. Archival records may be in any format, including text on paper or in electronic formats, photographs, motion pictures, videos, sound recordings.

• Digital Archive collections

- Are designed simply to make materials available to researchers in an unbiased way.
- Lack the interpretive "middleman" standing between user and the sources.
- User is given more freedom to order and interrelate the sources himself.
- User can draw his own interpretations from the sources without being influenced by someone else's interpretation.



 An Archival Repository reliably stores digital objects for long periods of time (decades or centuries). The archival nature of the system requires new techniques for storing, indexing, and replicating digital objects.



Once upon a time, in the analog world, we used to have originals and copies...



Fragments of the Great Eleusinian Relief, 27 b.c.–14 a.d.; Augustan Fragments of a Roman copy set in a plaster cast of the original Greek marble relief, ca. 450–425 b.c., Metropolitan Museum of Art, New York



the Great Eleusinian Relief, 27 b.c.–14 a.d, National Archeological Museum of Athens

• Simple copy

• A written duplicate of a document that reproduces the content but not the format of the original.

• A certified copy

• A written duplicate of a document signed by a notary public, court clerk or a solicitor



In order to protect digital objects against loss over time, in general an archival repository must enforce

certain properties.

Among others, the *no modifications* policy prevents users from changing archived data. Modification are instead handled by creating version chains, with a newer object pointing to an older object via an object reference.

Another property is *universal handles*. This property guarantees that an object retains its handle regardless of which repositories it is replicated to, and that the handle is unique within the repository network.

With *universal handles*, object references can be unambiguously resolved, allowing the structure of a graph of objects to be retained even as the objects are replicated to different sites. Universal handles also has important efficiency benefits; for example, two sites can quickly determine whether they have the same objects simply by comparing lists of handles.

From:

Brian Cooper, Arturo Crespo and Hector Garcia-Molina, *Implementing a Reliable Digital Object Archive*, 2000

http://infolab.stanford.edu/~cooperb/pubs/savpaperext.pdf

• Where's the problem?









The material object



















scienze.fanpage.it/se-monna-lisa-non-e-monna-lisa-ancora-misteri-attorno-alla-gioconda/



STIVEB

Se Monna Lisa non è Monna Lisa, ancora misteri attorno alla Gioconda

La studiosa tedesca Maike Vogt–Luerssen torna a parlare della sua ipotesi riguardante l'identità della più famosa delle donne ritratte da Leonardo da Vinci: il dipinto origine di tanti enigmi raffigurerebbe Isabella D'Aragona. E la prova certa potrebbe provenire dal DNA.

A cura di Nadia Vitali



Using a copy image to substantiate a thesis







📧 Open in Media Viewer 🛛 🌣



This page is currently semi-protected, and can be edited only by established registered users.

- Semi-protection is sometimes necessary to prevent vandalism to popular pages. Most media files and gallery pages can be edited by anyone.
- The reason for protection can be found in the protection log.
- If you have a user account, log in first. If you do not yet have an account, you may create one; after a while, you will be able to edit semi-protected pages.
- You can discuss this page with others. If you have noticed an error or have a suggestion for a simple change, start a new section on this page's talk page and insert the text {{edit request}} followed by your request. An established user (an account older than 4 days) may then make the change on your behalf.
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Summary

Warning	The original file is very high-resolution. It might not load properly or could cause your browser to freeze when opened at full size. To avoid these issues, use the ZoomViewer.	Open in ZoomViewer		
Leonardo da Vinci: Mona Lisa 💵 • •)				
Artist	Leonardo da Vinci (1452–1519) 🥒 🂵 🔞 🗤 🐔			
Author	C2RMF: Galerie de tableaux en très haute définition & image page			
Title	Italian: Ritratto di Monna Lisa del Giocondo Portrait of Mona Lisa del Giocondo			
Object type	painting 🖍	Reason and the second s		
Genre	portrait 🖍			
Depicted people	Lisa del Giocondo 🧖			
Date	between 1503 and 1506 High Renaissance (1494–1527)			
Medium	oil on panel			
Dimensions	height: 77 cm (30.3 in) 🖍; width: 53 cm (20.8 in) 🖍			
Collection	Louvre Museum 🥒 🂵 (Inventory)			
Current location	Department of Paintings of the Louvre Louvre Museum			
Accession number	INV. 779 (Department of Paintings of the Louvre)			
Place of creation	Florence /			
Object history	 1519: acquired by 21 August 1911: unknown event: theft of Mona Lisa 			
Exhibition history	 Mona Lisa by Leonardo da Vinci, National Gallery of Art, 8 January 1963 - 3 February 1963 The Mona Lisa by Leonardo da Vinci, Metropolitan Museum of Art, 6 February 1963 - 4 March 1963 Mona Lisa Exhibition, Tokyo National Museum, 20 April 1974 - 10 June 1974 			







How to find and use the British Library's IIIF enabled images



'Bitter Melons' from Shasei sõka moyō by Furuya Kōrin. Unsōdō, Kyoto, 1907. Shelfmark: ORB.30/132. An example of one of our IIIF enabled images.

The International Image Interoperability Framework (IIIF) is a widely supported standard protocol for sharing images across the web, making image and media

Subjects

Digital scholarship

Undertake innovative research with our digital collections and data

Printed books

Printed material in a range of formats for current researchers and future generations

Africa

Historical and contemporary material for the study of Africa

Americas and Oceania

Extensive collections from the Americas and Oceania

Literature and drama

Collections relating to English literature and British theatre

Arts and humanities



IIIF is a set of open standards for delivering high-quality, attributed digital objects online at scale. It's also an international community developing and implementing the IIIF APIs. IIIF is backed by a consortium of leading cultural institutions.

The IIIF aims to cultivate shared technologies for both client and server to enable interoperability across repositories, and to foster a market in compatible servers and viewing applications.



API's -> Framework -> Ecosystem





Image Content - IIIF Image API

```
"@context" : "http://iiif.io/api/image/2/context.json",
"@id" : "http://www.example.org/image-service/abcd1234/1E34750D-38DB-4825-A38A-B60A345E591C",
"protocol" : "http://ilif.io/api/image",
"width" : 6000.
"height" : 4000.
"sizes" : [
 {"width" : 150, "height" : 100},
  {"width" : 600, "height" : 400},
  {"width" : 3000, "height": 2000}
],
"tiles": [
 {"width" : 512, "scaleFactors" : [1,2,4,8,16]}
"profile" : [
  "http://iiif.lo/api/image/2/level2.json",
   "formats" : [ "gif", "pdf" ],
   "qualities" : [ "color", "gray" ],
   "supports" : [
        "canonicalLinkHeader", "rotationArbitrary", "profileLinkHeader", "http://example.com/feature/"
"service" : {
  "@context": "http://iif.io/api/annex/service/physdim/1/context.json",
  "profile": "http://ilif.io/apl/annex/service/physdim",
  "physicalScale": 0.0025,
  "physicalUnits": "in"
```

http://iiif.io/api/image/



INFO.JSON - IIIF Image API

IIIF Authentication API

- Describes workflows for guiding the user through an existing access control system
- Provides a pattern for interacting with arbitrary third party protocols
- Provides access control system in use on the server, without the client requiring knowledge of that system
- In summary, the specification describes how to:
 - From within a viewer, initiate an interaction with an access control system so that a user can acquire the credentials they need to view restricted content.
 - Give the client just enough knowledge of the user's state with respect to the content provider to ensure a good user experience.





How to find and use the British Library's IIIF enabled images



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For more information on IIIF and how to use it, check out the recordings and resources from the June 2020 IIIF Online Workshop: https://training.iiif.io/iiif-online-workshop/

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Please contact digitalresearch@bl.uk if you have any questions about this collection.

What is available online?

The British Library is adding IIIF enabled collections to our main catalogues and through major projects, partnerships and programmes all the time.

Explore the British Library - Main Catalogue

We are working hard on developing an easier solution for discovering all of our IIIF content. In the meantime, to limit your search to all currently available IIIF items in our main catalogue (digital and print books, journals, newspapers, maps and scores) copy and paste this search string:

blmsd OR blww1 OR blplaybill OR bldcw

Some IIIF collection highlights you'll discover through this include:

- Digitised 19th Century Books ('blmsd')
- Europeana WWI ('blww1')
- Playbills ('blplaybill')
- India Office medical archive collection
- Rare Bengali books
- Japanese Design Books
- · Early Music Online
- Blockbooks collection of rare printed books of the mid-15th century
- · Shakespeare's First Folio collated and published in 1623
- Garrick prompt book King Lear



Back to results list



2 related resources

Details I want this







Mirador is a configurable, extensible, and easy-to-integrate image viewer, which enables image annotation and comparison of images from repositories dispersed around the world.













Gallery Text

In early 1888, Van Gogh moved to Arles in the south of France, where he hoped to establish an art colony. Believing that painting could be reinvented through the genre of portraiture, he encouraged his fellow artists to paint themselves, and then to exchange the canvases. After receiving self-portraits from Emile Bernard and Gauguin, who were working together in Brittany at the time, Van Gogh inscribed this painting "To my friend Paul Gauguin," and sent it to him. He described the process of creating his arresting likeness in several letters to his brother Theo, an art dealer in Paris, explaining how he manipulated his features in response to Japanese prints, changed the contours of his jacket for coloristic effect, and painted the background "pale veronese green" without any shadows. Shortly after he sent the work to Gauguin, however, their friendship deteriorated, and Gauguin sold it for three hundred francs.

Identification and	Object Number	
Creation	1951.65	

• The theory of organized chaos (data models)



LOD – Linked Open Data

Linked data is structured data which is interlinked with other data so it becomes more useful through semantic queries. It builds upon standard Web technologies such as HTTP (Hypertext Transfer Protocol), RDF (Resource Description Framework) and URIs (Uniform Resources Identifier), but rather than using them to serve web pages only for human readers, it extends them to share information in a way that can be read automatically by computers.

Linked Open Data (LOD) is Linked Data which is released under an open license, which does not impede its reuse for free



5-star linked open data

•1 star: data is openly available in some format (open licence).

•2 stars: data is available in a structured format, such as Microsoft Excel file format (.xls) (Machine readable structured data).

•3 stars: data is available in a non-proprietary structured format, such as Commaseparated values (.csv) (open format).

•4 stars: data follows W3C standards, like using RDF and employing URIs.

•5 stars: all of the other, plus links to other Linked Open Data sources.

The principle of "provenance"

Is intended in the broader meaning of researching and retaining the relationships existing between digital objects (e.g. a scanned copy of a picture depicting a painting) and the original physical ones, from which they have been generated (the `analogue' ones – e.g. the physical picture - and the `real' ones - e.g. the painting), owned and produced by a single institution or by different ones.



Figure 1: Hype Cycle for Digital Government Technology, 2021



Hype Cycle for Digital Government Technology, 2021

The **Gartner hype cycle** is a graphical presentation developed, used and branded by the American research, advisory and information technology firm Gartner to represent the maturity, adoption, and social application of specific technologies.

Plateau will be reached: 🔿 < 2 vrs. 💿 2-5 vrs. 🌑 5-10 vrs. 🔺 >10 vrs. 🗶 Obsolete before plateau

Source: Gartner (July 2021) 747518

Source: Gartner (July 2021)



CIDOC Conceptual Reference Model (CRM)

• A theoretical and practical tool for information integration of data from multiple sources in the field of cultural heritage

BUT..... ONE MINUTE...



How do we know if the digital objects used to create this cultural heritage linked model correspond to the original ones? CIDOC CRM has never been applied to research the relationships between digital objects and their analogue material ones, in order to sketch a kind of "family tree".

Moreover, no attempts have been made either to adopt at the same time a blockchain-based technology and the CIDOC CRM model for authentication and integrity purposes.

THE QUESTION IS: are they compatible??



The "trustless technologies": the blockchains

A blockchain is a particular implementation of a Distributed Ledger (DL), which is essentially a database, shared among different nodes of a network.

All the nodes share the same copy of the database and any change made on a node is replicated to all the other nodes in a few minutes and, in some cases, even in a few seconds.

There is no need of a central authority because the consensus algorithm and cryptography grant the correctness of data even in presence of some malicious nodes

BLOCKCHAIN IS PRACTICALLY a recordkeeping technology





Who is allowed to operate on the blockchain and to what extent?

• **Permissionless blockchains**, if any node can access and use the network and is allowed to write contents on it.

• **Permissioned blockchains**, if participants must authenticate (with a username and password) to gain access to the network and the nodes must have authorization to use the system resources. These are often private blockchains, meant to be used only by members of a shared ledger. These types of blockchains have membership services that manage identity, privacy, confidentiality and auditability within the system.

Blockchain X.0: this generation represents a vision for a future when a blockchain service could be public, open and distributed, available for anyone; it will be used like the Google search engine and will provide services for all realms of society.

