

# Data X Budaya

Fariz Darari dan Raisha Abdillah

**Seri Retas Budaya**

14/08/2020



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN  
DIREKTORAT JENDERAL KEBUDAYAAN



WIKIMEDIA  
INDONESIA



ASOSIASI GAME INDONESIA



GOETHE  
INSTITUT

DIES NATALIS



FASILKOM UI



UNIVERSITAS  
INDONESIA

*Veritas, Spesialis, Justitia*

FACULTY OF  
**COMPUTER  
SCIENCE**

# Konteks



**DATA +  
BUDAYA**

**SERI SEMINAR DARING  
“RETAS BUDAYA”**

**Jumat, 14 Agustus 2020  
pkl 14.00 WIB**

Narasumber:



**Dr. Fariz Darari**  
Universitas Indonesia



**Raisha Abdillah**  
Wikimedia Indonesia

**Disiarkan langsung di:**

-  Goethe-Institut Indonesien
-  Goethe-Institut Indonesien
-  GI\_Indonesien

  
KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN  
DIREKTORAT JENDERAL KEBUDAYAAN

  
ELEX  
MEDIA  
KOMPUTINDO

  
AGI  
ASOSIASI GURU INDONESIA

  
WIKIMEDIA  
INDONESIA

  
GOETHE  
INSTITUT

2

# Retas Budaya

- Retas Budaya adalah platform yang mempertemukan institusi GLAM (**G**aleri, **L**ibrary/perpustakaan, **A**rsip, **M**useum) dengan pelaku industri kreatif dan pegiat teknologi demi menghasilkan kolaborasi dan inovasi dari **data budaya terbuka**.
- Program ini adalah **kerja sama** antara Goethe-Institut Indonesien, Wikimedia Indonesia, Asosiasi Game Indonesia, Ditjen Kebudayaan Kemdikbud RI, dan PT Elex Media Komputindo.
- Retas Budaya bekerja sama dengan institusi ataupun organisasi yang memiliki koleksi budaya untuk **memublikasikan** sebagian koleksi mereka sebagai data budaya terbuka.

# Cita-Cita Retas Budaya



Menjadikan **data-data budaya di Indonesia** dapat **diakses secara bebas** sehingga semua orang bisa menggunakannya, membagikannya bahkan memodifikasinya sehingga diharapkan **penggunaan data secara kreatif** bisa terjadi.



**Dr. Fariz Darari**  
Assistant Professor at UI  
Co-Director at Tokopedia-UI AI Center

**Educated at:**  
Libera Università di Bolzano, Italy  
Technische Universität Dresden, Germany  
Universitas Indonesia

**Awards:**  
2018 SWSA Distinguished Dissertation  
Enno Heidebroek Award  
EMCL Best Thesis

**Media:**  
[ANTARA News](#)  
[Kumparan](#)  
[Koran Tempo](#)



**Dresden, 2012: Fariz trying to learn German/Austrian culinary culture :)**



Dunia tanpa keragaman budaya

A black and white photograph of a glass jar with a lid, filled with a variety of candies. The jar is placed on a dark wooden surface with a prominent grain. The candies include round ones, some with a textured surface, and others that are more translucent or crystalline. A few candies have spilled out onto the wood in front of the jar. The lighting creates strong highlights and shadows, emphasizing the textures of the wood and the glass.

Dunia tanpa keragaman budaya



Dunia tanpa keragaman budaya





Dunia tanpa keragaman budaya



Dunia dengan keragaman budaya yang lestari



Dunia dengan keragaman budaya yang lestari



Dunia dengan keragaman budaya yang lestari



Dunia dengan keragaman budaya yang lestari



Indonesia dengan ragam budaya yang luar biasa kaya

Bisakah kita melestarikannya?

Mungkin untuk 10 tahun, 100, atau bahkan 1000 tahun lamanya..

Mari kita simak cerita tentang pelestarian budaya via data!

# Kekayaan warisan budaya Indonesia: Statistik



3259 jenis kuliner



742 bahasa



1331 suku



435 museum

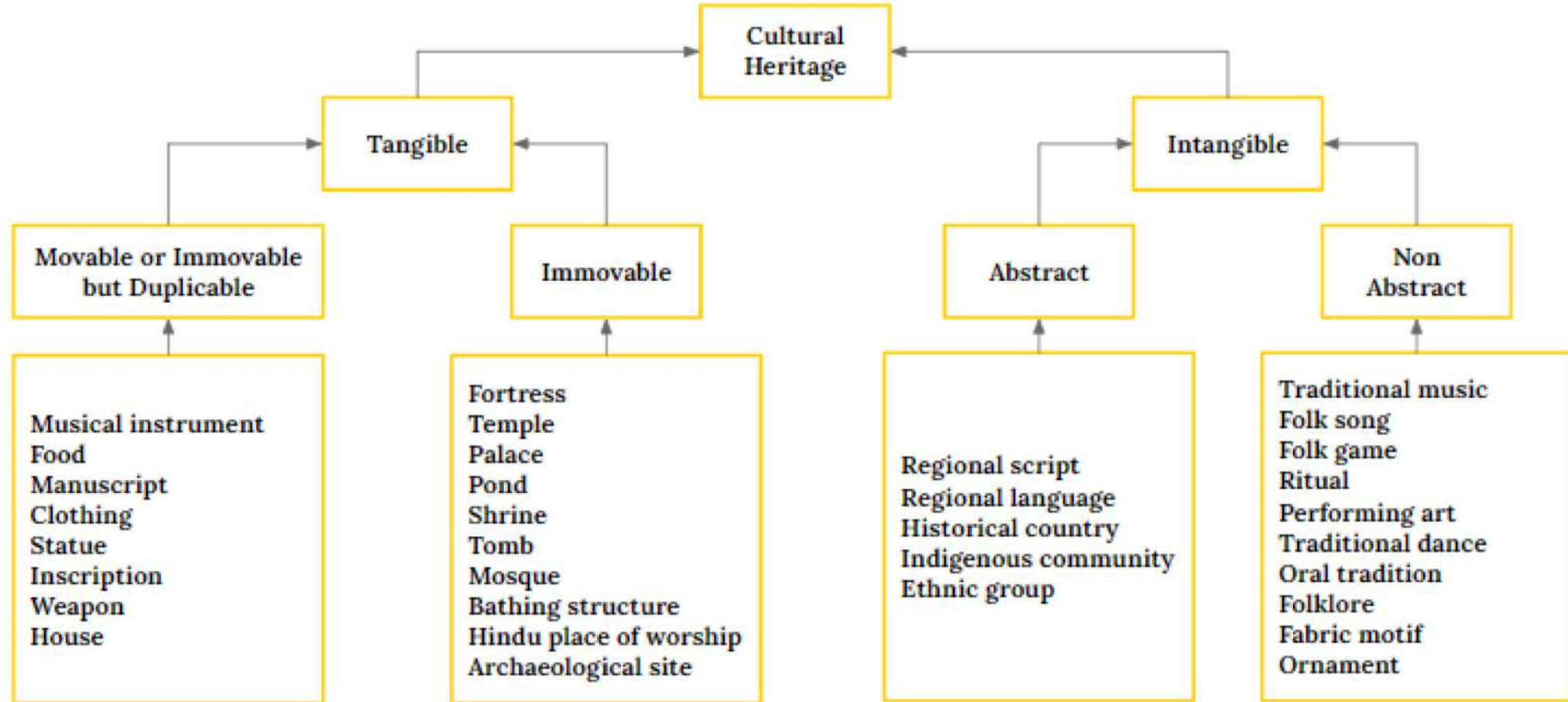


175 arsitektur rumah



1592 tarian

# Taksonomi warisan budaya





# Kenapa perlu melestarikan warisan budaya?

- **Pemerintah:** Kebijakan publik yang lebih inklusif
- **Akademik:** Sumber untuk pembelajaran dan penelitian
- **Perekonomian:** Elemen budaya sebagai produk kreatif
- **Masyarakat Umum:** Lebih memahami jati diri



Bagaimana cara melestarikan rendang (secara digital)?



# Bagaimana cara melestarikan rendang (secara digital)?



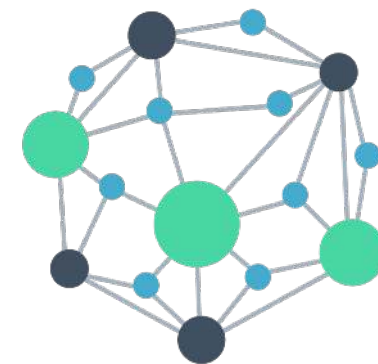
E-book or online articles



Photos



Videos



(Structured) Data

# Bagaimana cara melestarikan rendang (secara digital)?



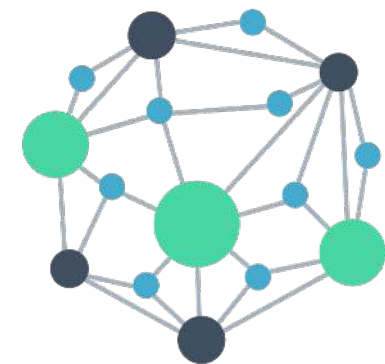
E-book or online articles



Photos



Videos



(Structured) Data

→ **Fokus**

# Data sebagai Lego

DATA



SORTED



ARRANGED



PRESENTED VISUALLY



# Data sebagai Cake



# Data tak terstruktur vs. data terstruktur

## Tari barong

Dari Wikipedia bahasa Indonesia, ensiklopedia bebas

**Tari Barong** adalah salah satu tarian yang berasal dari Bali yang menceritakan tentang mitologis gambaran binatang beruang yang memiliki kekuatan gaib dan dianggap dapat melindungi manusia.<sup>[1]</sup>

### Sejarah [sunting | sunting sumber]

Tari **Barong** merupakan peninggalan kebudayaan pra-Hindu yang melambangkan pertempuran antara kebaikan (dharma) dan keburukan (adharma). Menurut keyakinan masyarakat Bali, khususnya yang beragama Hindu, kebaikan dan keburukan selalu berdampingan atau disebut juga sebagai Rwa Bhineda. Kata Barong berasal dari kata bahruang yang berarti beruang.



Tari Barong Bali

vs.

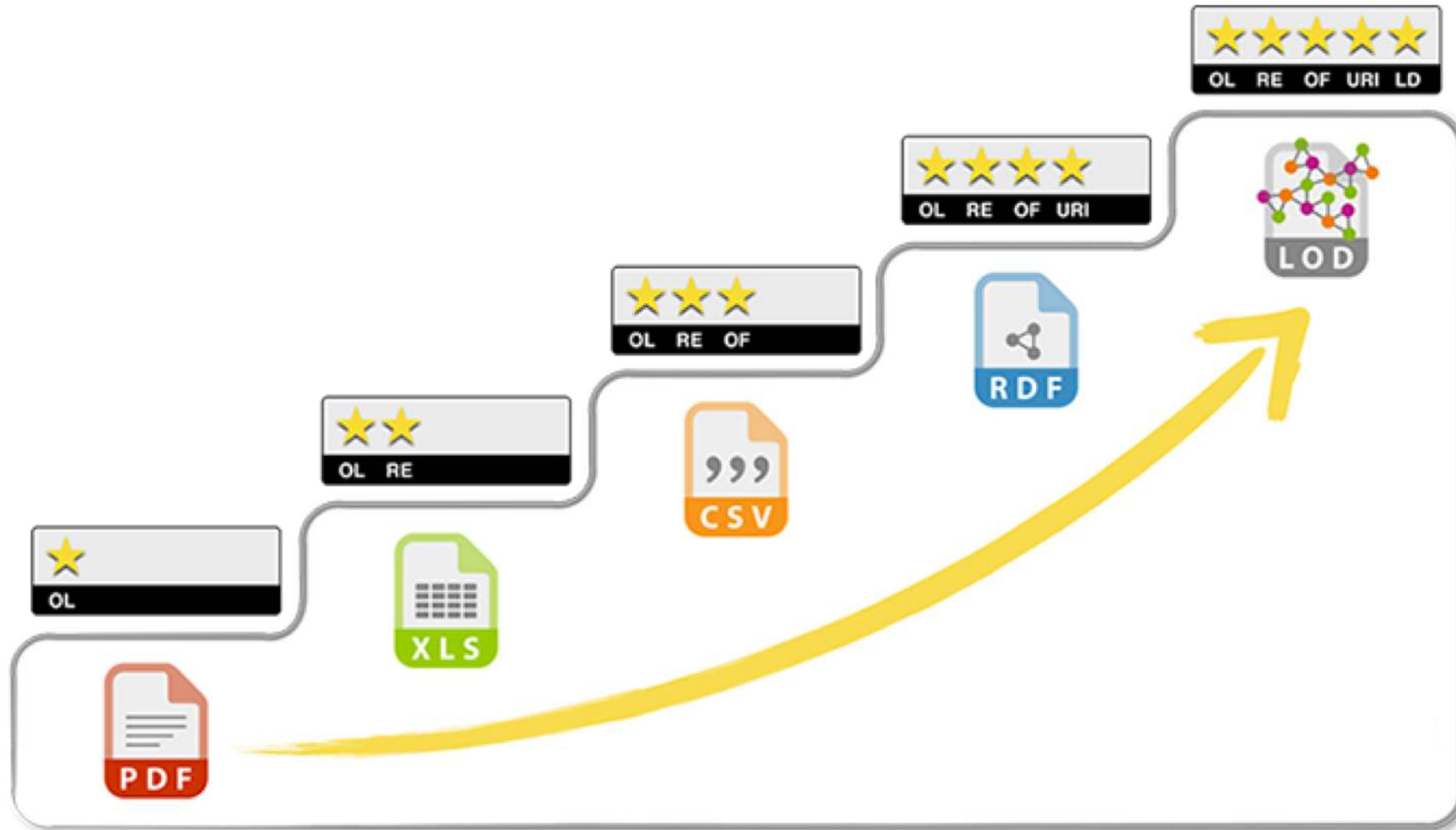
## Tari Barong

- **adalah:** tarian
- **dinamakan berdasarkan:** Barong
- **negara:** Indonesia
- **lokasi:** Bali
- **gambar:**

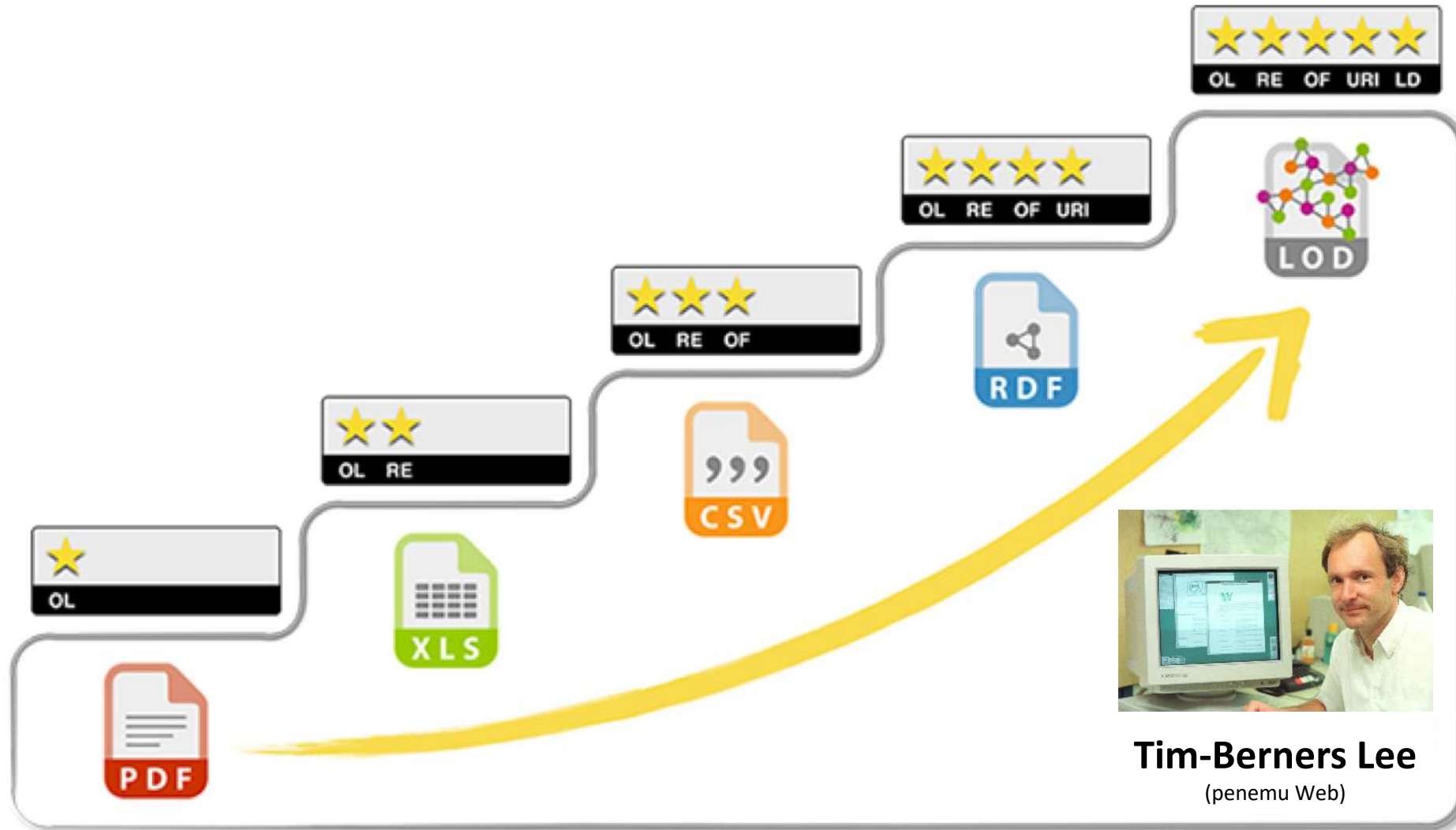




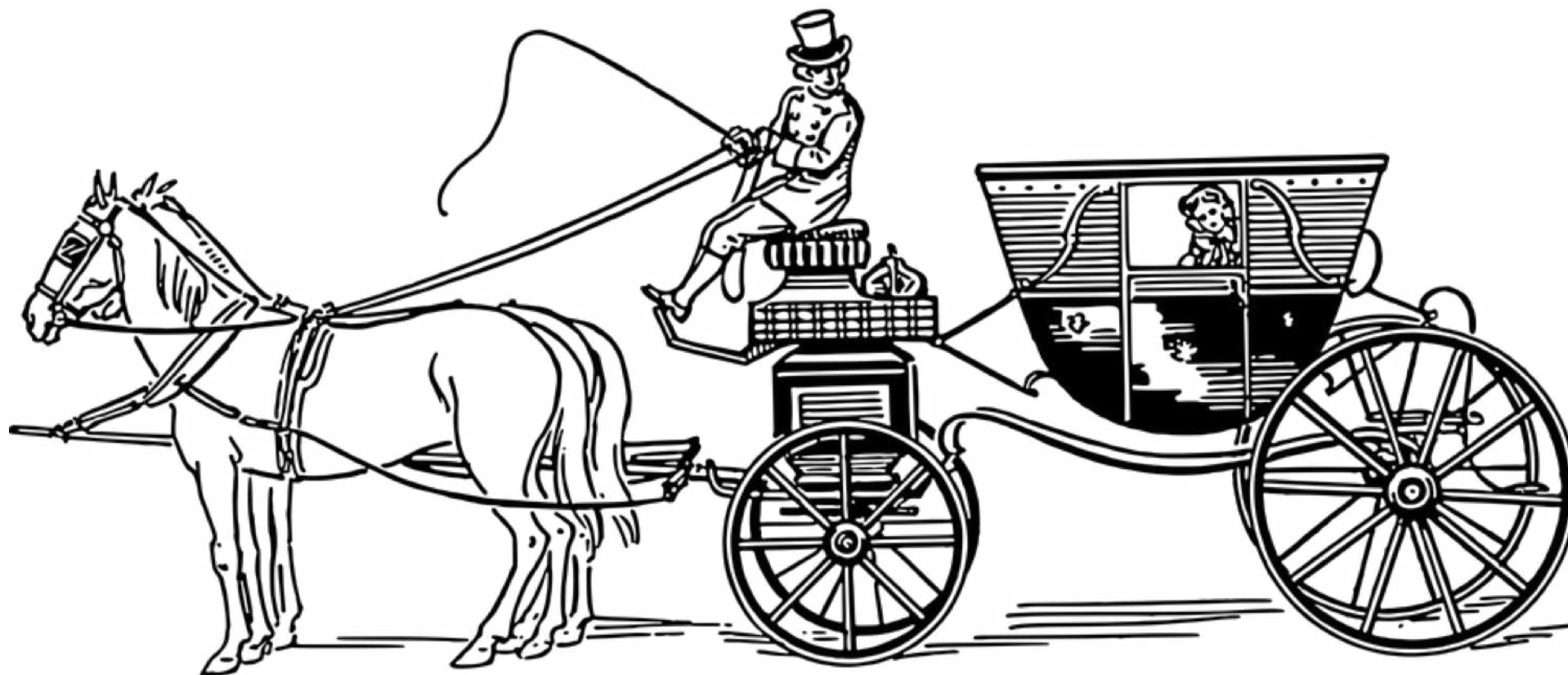
# Standar data terstruktur



# Standar data terstruktur



# Tur data budaya terstruktur + aplikasi



# Tur Data X Budaya: Metropolitan Museum of Art, USA



- The Metropolitan Museum of Art of New York City, colloquially "the Met", is the largest art museum in the United States.
- With 6,479,548 visitors to its three locations in 2019, it was the fourth most visited art museum in the world.
- Its permanent collection contains over two million works, divided among 17 curatorial departments.

# Tur Data X Budaya: Metropolitan Museum of Art, USA



## **The Metropolitan Museum of Art Collection API**

- Provides select datasets of information on more than 470,000 artworks.
- The information is of unrestricted commercial and noncommercial use.
- An API (RESTful web service in JSON format) gives access to all of The Met's Open Access data and to corresponding high resolution images (JPEG format) that are in the public domain.

# Tur Data X Budaya: Metropolitan Museum of Art, USA



## Object

GET `/public/collection/v1/objects/[objectID]` returns a record for an object, containing all open access data about that object, including its image (if the image is available under Open Access)

Parameter	Format	Notes
<code>objectID</code>	0-9	The unique Object ID for an object

# Tur Data X Budaya: Metropolitan Museum of Art, USA



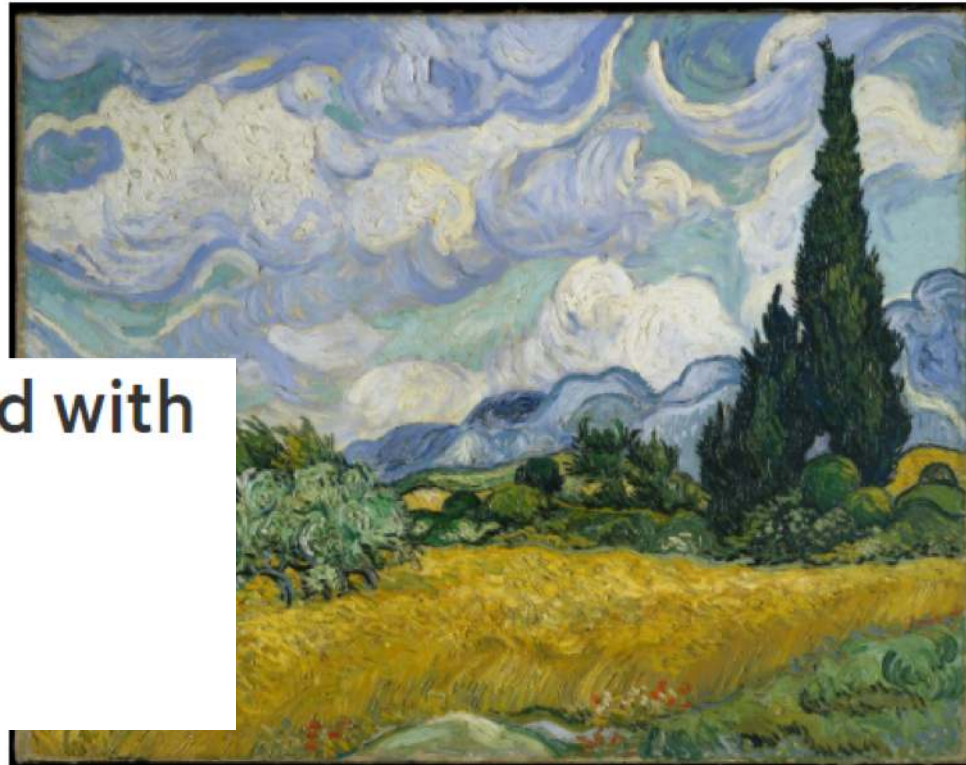
< Browse the Collection

English ▾

## Wheat Field with Cypresses

1889

Vincent van Gogh Dutch



# Tur Data X Budaya: Metropolitan Museum of Art, USA



```
{  
  https://collectionapi.metmuseum.org/public/collection/v1/objects/436535  
  "objectID": 436535,  
  "isHighlight": true,  
  "accessionNumber": "1993.132",  
  "accessionYear": "1993",  
  "isPublicDomain": true,  
  "primaryImage": "https://images.metmuseum.org/CRDImages/ep/original/DT1567.jpg",  
  "constituents": [  
    {  
      "role": "Artist",  
      "name": "Vincent van Gogh",  
      "constituentWikidata_URL": "https://www.wikidata.org/wiki/Q5582",  
    }  
  ],  
  ...  
}
```



# Tur Data X Budaya: Metropolitan Museum of Art, USA

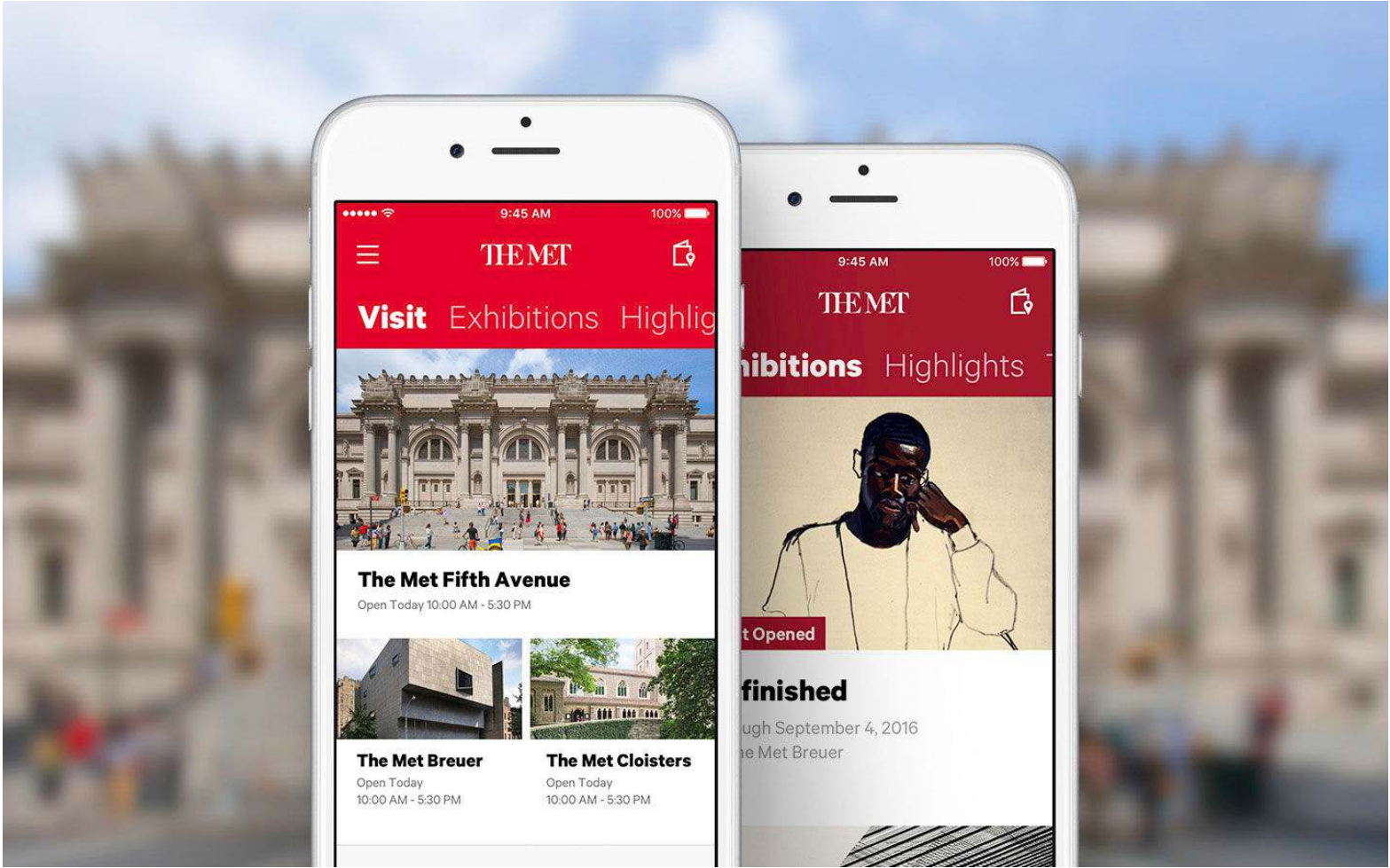


...

<https://collectionapi.metmuseum.org/public/collection/v1/objects/436535>

```
"department": "European Paintings",  
"objectName": "Painting",  
"title": "Wheat Field with Cypresses",  
"objectDate": "1889",  
"medium": "Oil on canvas",  
"dimensions": "28 7/8 × 36 3/4 in. (73.2 × 93.4 cm)",  
"repository": "Metropolitan Museum of Art, New York, NY",  
"tags": [ {"term": "Landscapes"}, {"term": "Cypresses"}, {"term": "Summer"} ],  
}
```

# Tur Data X Budaya: Metropolitan Museum of Art, USA



# Tur Data X Budaya: Europeana



- The Europeana online portal was launched by the President of the European Commission in November 2008.
- Europeana currently provides access to over 50 million objects from European libraries, museums, archives, galleries, and audiovisual collections.
- More than 3,500 heritage institutions contribute cultural content in Europeana. Their number and geographic coverage are steadily growing.
- The objects are available in different formats (text, images, audio/video, etc.) and in every European language.

# Tur Data X Budaya: Europeana



## Europeana REST API

- The Europeana REST API allows you to build applications that use the wealth of collections drawn from the major museums and galleries across Europe.
- If you want to search Europeana in an simple way (for instance 'give me all results for the word cat), you can then use the Search API.
- On the other, if you want to get all the metadata associated with a single item, then you can use the Record API. A template for the API call is as follows:  
`https://api.europeana.eu/api/v2/search.json?profile=standard&query=SEARCHTERMS&wskey=APIKEY`

# Tur Data X Budaya: Europeana

<https://api.europeana.eu/api/v2/search.json?profile=standard&query=girl with a pearl earring&wskey=CENSORED>

# Tur Data X Budaya: Europeana

<https://api.europeana.eu/api/v2/search.json?profile=standard&query=girl with a pearl earring&wskey=CENSORED>

```
{
  "success": true,
  "itemsCount": 12,
  "items": [
    {
      "country": [
        "Germany"
      ],
      "dataProvider": [
        "Deutsches Filminstitut - DIF"
      ],
      "dcDescription": [
        "Scarlett Johansson, Regisseur Peter Webber (v.l.n.r.)"
      ],
      "edmIsShownBy": [
        "http://archiv.deutsches-filminstitut.de/M/M%C3%A4dchen_mit_dem_Perlenohrring,_Das/Maedchen_mit_dem_Perlenohrring,_Das_13.jpg"
      ],
      "guid": "https://www.europeana.eu/item/08604/Europa6602?utm_source=api&utm_medium=api&utm_campaign=o75FgD3kR",
    }, ...
  ]
}
```



[View image](#)

## GIRL WITH A PEARL EARRING

Das Mädchen mit dem Perlenohrring

Scarlett Johansson, Regisseur Peter Webber (v.l.n.r.)

# Tur Data X Budaya: Europeana

<https://api.europeana.eu/api/v2/search.json?profile=standard&query=girl with a pearl earring&wskey=CENSORED>

```
... {  
  "country": [  
    "Netherlands"  
  ],  
  "dataProvider": [  
    "Mauritshuis"  
  ],  
  "dcCreator": [  
    "Johannes Vermeer"  
  ],  
  "dcTitleLangAware": {  
    "nl-NL": [  
      "Meisje met de parel"  
    ],  
    "en-GB": [  
      "Girl with a Pearl Earring"  
    ]  
  },  
  "edmIsShownBy": [ "http://fileshare.mauritshuis.nl/collectie/0670_repro.jpg" ],  
  "guid": "https://www.europeana.eu/item/2021672/resource_document_mauritshuis_670?utm_source=api&utm_medium=api&utm_campaign=o75FgD3kR",  
  }, ... (and so on)
```



## Girl with a Pearl Earring

*Girl with a Pearl Earring* is Vermeer's most famous painting. It is not a portrait, but a 'tronie' – a painting of an imaginary figure. Tronies depict a certain type or character; in this case a girl in exotic dress, wearing an oriental turban and an improbably large pearl in her ear. Johannes Vermeer was the master of light. This is shown here in the softness of the girl's face and the glimmers of light on her moist lips. And of course, the shining pearl.

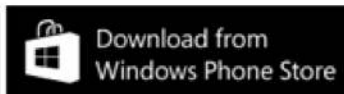
# Tur Data X Budaya: Europeana

MUSEUMS.EU

THE EUROPEAN MUSEUMS NETWORK

MUSEUMS EXHIBITIONS EVENTS EDUCATIONAL PROGRAMS COLLECTIONS TRAILS

Museums.EU website is accompanied with a suite of mobile applications, providing users with up-to-date information about museums and galleries worldwide in one place – including visitor information, exhibitions, events, collections, interactive audio guides and more.





# Tur Data X Budaya: Europeana

MUSEUMS.EU  
THE EUROPEAN MUSEUMS NETWORK

MUSEUMS EXHIBITIONS EVENTS EDUCATIONAL PROGRAMS COLLECTIONS TRAILS VIRTUAL EXHIBITIONS

Search

Search



# Tur Data X Budaya: Europeana

MUSEUMS.EU  
THE EUROPEAN MUSEUMS NETWORK



This is a collection from National Art Museum of Catalonia that is originally published on Europeana.

1 - 3 of 3 objects

Search



Door handle for Casa Milà ('La Pedrera'), model 3



Door handle for Casa Milà ('La Pedrera'), model 2




Door handle for Casa Milà ('La Pedrera'), model 1

# Tur Data X Budaya: Europeana

Home / Europeana / Europeana / Europeana

## Europeana



 Powered by Europeana

COLLECTION

[Europeana](#)

TITLE

**Europeana**

OBJECT TYPE

<http://partage.vocnet.org/part00062>

LINK TO EUROPEANA

[Click here](#)

LICENSE

[Click here](#)

# Tur Data X Budaya: Europeana

☰ europeana 🔍

## Door handle for Casa Milà ('La Pedrera'), model 1

Acquisition credit: Long-term loan by Fundació Caixa Catalunya Tarragona i Manresa, 2011



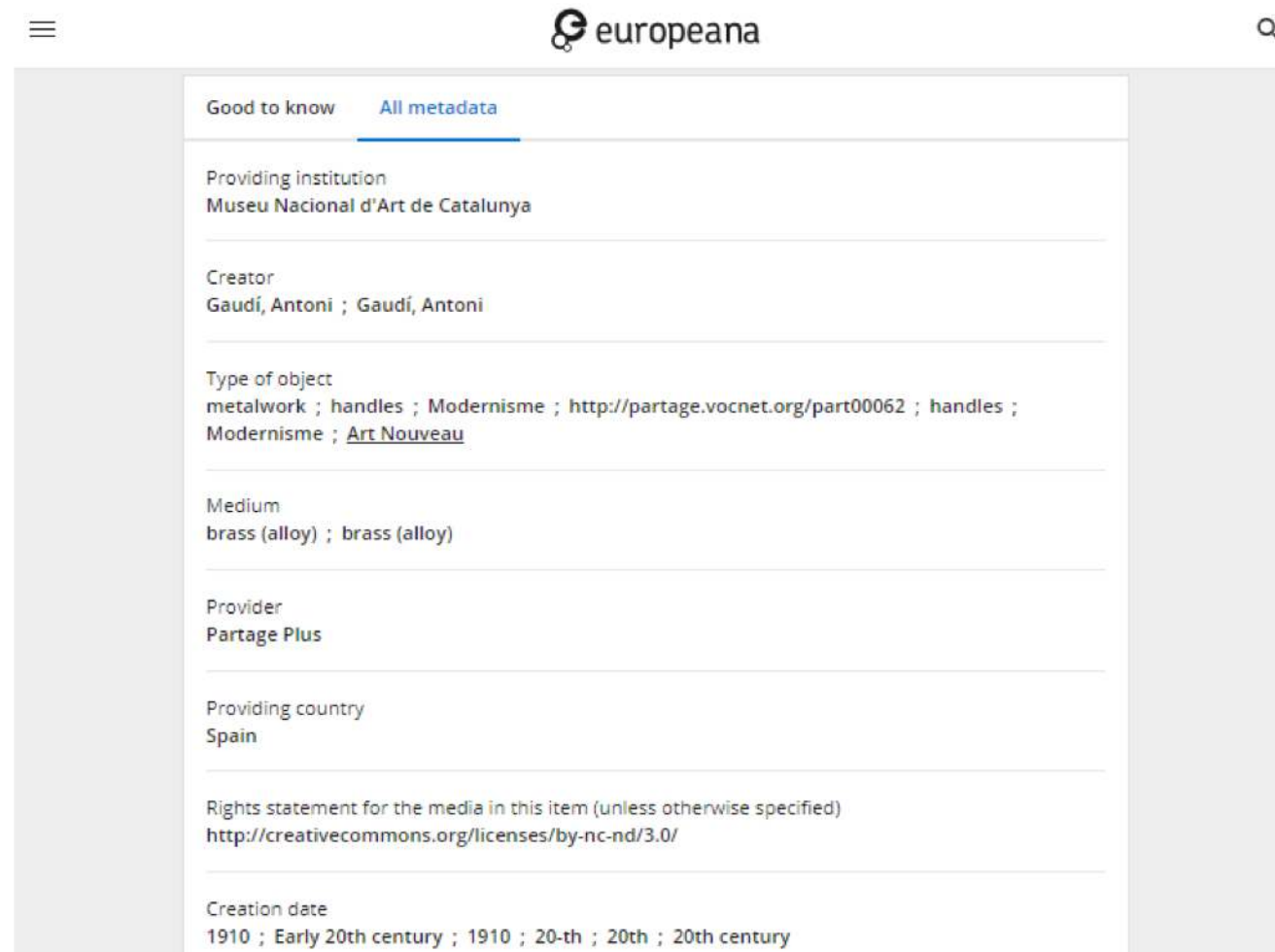
[View image](#)

SHARE DOWNLOAD

CC BY-NC-ND [↗](#)

View at [Museu Nacional d'Art de Catalunya](#) [↗](#)

# Tur Data X Budaya: Europeana



The screenshot shows the Europeana website interface. At the top, there is a hamburger menu icon on the left, the Europeana logo in the center, and a search icon on the right. Below the logo, there are two tabs: "Good to know" and "All metadata", with "All metadata" being the active tab. The main content area displays the following metadata:

- Providing institution:** Museu Nacional d'Art de Catalunya
- Creator:** Gaudí, Antoni ; Gaudí, Antoni
- Type of object:** metalwork ; handles ; Modernisme ; <http://partage.vocnet.org/part00062> ; handles ; Modernisme ; [Art Nouveau](#)
- Medium:** brass (alloy) ; brass (alloy)
- Provider:** Partage Plus
- Providing country:** Spain
- Rights statement for the media in this item (unless otherwise specified):** <http://creativecommons.org/licenses/by-nc-nd/3.0/>
- Creation date:** 1910 ; Early 20th century ; 1910 ; 20-th ; 20th ; 20th century

# Tur Data X Budaya: Europeana

UNESCO » Culture » World Heritage Centre » The List » World Heritage List

## Works of Antoni Gaudí

Description

Maps

Documents

Gallery

Video

Indicators



### Works of Antoni Gaudí

Seven properties built by the architect Antoni Gaudí (1852–1926) in or near Barcelona testify to Gaudí's exceptional creative contribution to the development of architecture and building technology in the late 19th and early 20th centuries. These monuments represent an eclectic, as well as a very personal, style which was given free reign in the design of gardens, sculpture and all decorative arts, as well as architecture. The seven buildings are: Parque Güell; Palacio Güell; Casa Mila; Casa Vicens; Gaudí's work on the Nativity façade and Crypt of La Sagrada Família; Casa Batlló; Crypt in Colonia Güell.

Description is available under license CC-BY-SA IGO 3.0

 Spain

N41 24 48.168 E2 9 10.699

Date of Inscription: 1984

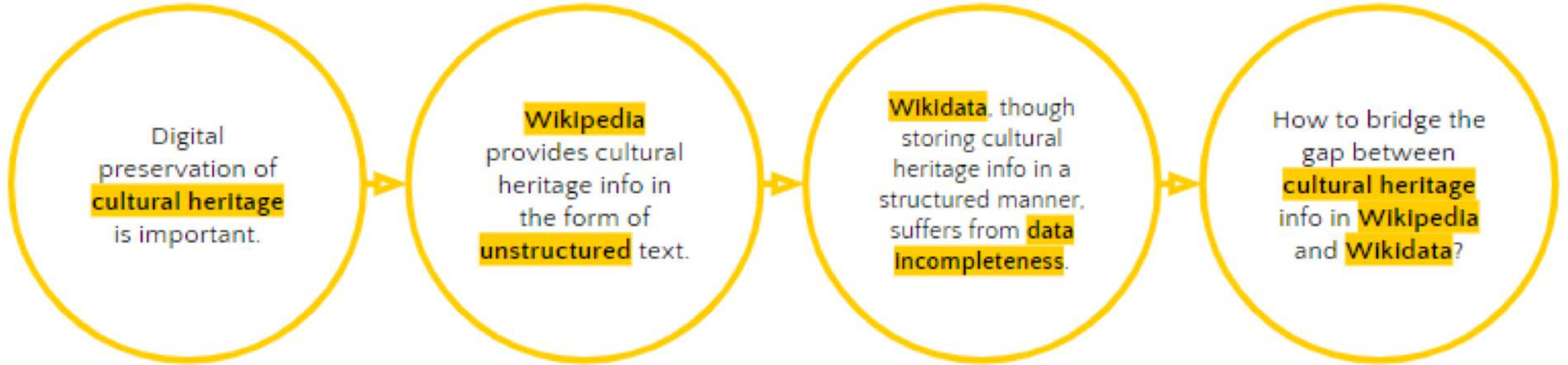
Extension: 2005

Criteria: (i)(ii)(iv)

Ref: 320bis



# Tur Data X Budaya: BudayaKB



# Tur Data X Budaya: BudayaKB



**BUDAYAKB: INDONESIAN CULTURAL HERITAGE KB**    ONTOLOGY    DATA    QUERY    PAPER    SLIDES    CODE

## BUDAYAKB

Cultural heritage is the root of national identities, and contributes to tourism, economics, industry, and business aspects. Digital preservation of cultural heritage is thus crucial. Available cultural heritage information on Web sources (e.g., Wikipedia) is provided in multiple formats, such as free-form text, lists, and tables, all of which lack structures and links to other information sources. BudayaKB (or in English, CultureKB) serves as an RDF knowledge base of Indonesian cultural heritage, that is both structured and linked, paving new ways for consuming cultural heritage information. The content of BudayaKB is automatically extracted from the province and city pages of Indonesian Wikipedia, taking into account the heterogeneous formats of cultural heritage information (i.e., text, lists, and tables), and is linked to Wikidata, enabling greater interoperability. BudayaKB is developed by Hadi Syah Putra, Rahmad Mahendra, and Fariz Darari from Universitas Indonesia. Our paper about BudayaKB has been accepted at **WIMS 2019** in Seoul, South Korea.

**ASK BUDAYAKB**

2019 | Universitas Indonesia and Wikimedia Indonesia

<https://budayakb.cs.ui.ac.id/>



# Tur Data X Budaya: BudayaKB



WIKIPEDIA

[https://id.wikipedia.org/wiki/Jawa Barat](https://id.wikipedia.org/wiki/Jawa_Barat)

Tourism

- Pantai Tanjung Baru, Tempuran
- Pantai Tirtamaya, Juntinyuat
- Linggarjati
- Candi Jiwa, di Percandian Batujaya
- Waduk Darma

Extraction

```
@prefix bkb: <https://budayakb.cs.ui.ac.id/ns#>.
@prefix bkbr: <https://budayakb.cs.ui.ac.id/resource/>.
bkbr:Candi_Jiwa a bkb:Candi.
bkbr:Candi_Jiwa bkb:locationInProvince bkbr:Jawa_Barat.
```



Integration

Q56208821



Language	Label
Indonesian	Candi Jiwa
instance of	Candi of Indonesia
location	West Java

# Tur Data X Budaya: BudayaKB



```
PREFIX bkbr: <https://budayakb.cs.ui.ac.id/resource/>
PREFIX bkb: <https://budayakb.cs.ui.ac.id/ns#>

SELECT ?prov (COUNT(?temple) AS ?numTemple) WHERE {
  ?temple a bkb:Candi .
  ?temple bkb:locationInProvince ?prov .
} GROUP BY ?prov ORDER BY DESC(?numTemple) LIMIT 3
```

prov	numTemple
<a href="#">bkbr:Yogyakarta</a>	"25"^^xsd:integer
<a href="#">bkbr:Jawa_Timur</a>	"23"^^xsd:integer
<a href="#">bkbr:Jawa_Tengah</a>	"15"^^xsd:integer

Top-3 Indonesian provinces with the most number of temples

# Tur Data X Budaya: BudayaKB



RESEARCH-ARTICLE

## BudayaKB: Extraction of Cultural Heritage Entities from Heterogeneous Formats

[Twitter](#) [LinkedIn](#) [Reddit](#) [Facebook](#) [Email](#)

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**Authors:**  [Hadi Syah Putra](#),  [Rahmad Mahendra](#),  [Fariz Darari](#) [Authors Info & Affiliations](#)

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**Publication:** WIMS2019: Proceedings of the 9th International Conference on Web Intelligence, Mining and Semantics • June 2019 • Article No.: 6 • Pages 1–9 • <https://doi.org/10.1145/3326467.3326487>

Versi pracetak dapat diunduh di: <https://budayakb.cs.ui.ac.id/budayakb-preprint.pdf>

# Tur Data X Budaya: BudayaKB



COMMUNICATIONS OF THE ACM | APRIL 2020 | VOL. 63 | NO. 4

east asia & oceania region hot topics

Heritage | DOI:10.1145/3378540

## Capturing Cultural Heritage in East Asia and Oceania

BY SALLY JO CUNNINGHAM, FARIZ DARARI, ADILA KRISNADHI, AND ANNIKA HINZE

**T**O CAPTURE CULTURAL heritage is to capture the experience of people who are directly involved in creating, witnessing, and maintaining cultural heritage objects. Ideally, the people accessing digital representations of cultural heritage objects are able to understand the significance underlying the objects. The question is how to capture the experience of cultural objects in digital form. Various modalities exist for representing cultural heritage: unstructured textual data, possibly including images or videos, as well as structured data.

about rendang and its history. According to Nurmufida et al., "rendang is a traditional cuisine originating from West Sumatra, with beef and coconut milk as its main ingredients. From image sources, we may see what rendang looks like. For example, Wikimedia Commons contains images of rendang that show that, despite being similar to curry, rendang is actually drier. Next, we may wonder how to cook rendang. A simple YouTube search provides a wide selection of videos showing how to cook rendang, with the chefs ranging from local Indonesians to international chefs. To fact, the word



Through BudayaKB, applications for cultural heritage can be developed easily, as the data is captured into a structured form ready to be queried.

```
1 • prefix bkb: <https://budayakb.cs.ui.ac.id/resource/>
2 prefix bkb: <https://budayakb.cs.ui.ac.id/ns#>
3
4 SELECT ?province ?cuisine
5 WHERE {
6   ?cuisine a bkb:MakananMinumanTradisional . # traditional food/drink
7   ?cuisine bkb:originFromProvince ?province .
8 }
```

QUERY RESULTS

Table Raw Response

Showing 1 to 13 of 13 entries (filtered from 1,633 total entries) Search: sumatera\_barat Show 50 entries

province	cuisine
bkbr:Sumatera_Barat	bkbr:Rendang
bkbr:Sumatera_Barat	bkbr:Terung_balado
bkbr:Sumatera_Barat	bkbr:Ayam_Pop

Figure 1. Cultural heritage in structured data enables querying.

Artikel di atas dapat diakses free di:

<https://cacm.acm.org/magazines/2020/4/243634-capturing-cultural-heritage-in-east-asia-and-oceania/fulltext>

somewhere by bicycle, train, airplane, car, motorcycle, or boat. It could be an exploration to somewhere new planned or unplanned to meet new people, new things and new places. There are different types of adventures waiting for you to explore.

There are lots of places to explore. Places could be urban or suburban. Some people loves to be with nature to free their minds and refresh their souls, but some like to be in the city. You will get lots of benefits such as exploring new culture.



**Sesi selanjutnya:**  
Mari kita terjun langsung untuk menerbitkan dan memanfaatkan data budaya terstruktur!