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Preserving the future

MUSEO 2

CULTURAL HERITAGE MANAGEMENT SOFTWARE

CHARACTERISTICS AND TECHNICAL REQUIREMENTS

ABOUT THIS DOCUMENT

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EXECUTIVE SUMMARY

Museo is an information management software specifically designed for cataloguing, managing and communicating cultural heritage, regardless of it being material, intangible, documental or multimedia.

This document aims to describe the main features and characteristics of the software Museo and also to outline the technical requirements necessary for the correct deployment of the software in a production environment.

MUSEO

MAINTAINING AND PROVIDING ACCESS TO **INVENTORIES OF CULTURAL OBJECTS** REGARDLESS OF THEIR TYPOLOGY

Museo is an information management software specifically designed for cataloguing, managing and communicating cultural heritage, regardless of it being material, intangible, documental or multimedia.

This software has the ability to be configured to respond to the specific needs of each institution. Both the data model and the graphical interfaces can be adjusted to meet the requirements of any particular museum institution.

This means that information elements used to describe each inventoried item can be modified to meet the particular needs of the museum institution and that its visual appearance can be adapted to meet the customer's branding and identity.

Museo also allows institutions to easily perform one of their main missions - communicate with its public. It does so by simplifying the process of making public its inventory, organizing virtual exhibitions, promoting georeferenced itineraries, amongst other activities. The navigation is simple and allows users to search and visualise photos and videos of cultural assets, as well as other related multimedia elements.

This software constitutes a powerful communication tool that can be exploited by institutions to promote the richness of their cultural assets, promoting scientific research, education, tourism, region, heritage and to stimulate the curiosity of public to visit the physical museum.

Integrated management of various museum centres

An institution that oversees a set of museums or museum centres only needs to acquire one license of the product, being able to carry out a centralized management of the entire collection without ever losing the ability to segregate information from each of the museums that integrate the consortium.

No hidden costs

Museo has a simple licensing scheme that does not require the acquisition of additional licenses for any of its third-party dependencies (e.g., database system or operating system).

This results in a much cheaper option for the customer as the overall cost of acquisition is lower than other options available on the market.

A museum open to the public

We believe that heritage should be accessible to everyone. Therefore, in addition to enabling the internal management of inventoried heritage, Museo privileges communication with the institution's target audience through various forms, e.g., presentation of cured collections, virtual exhibitions or georeferenced itineraries, always appealing and compatible with mobile devices.

Communicate better, communicate more

Museo implements a set of communication protocols and APIs that make it compatible with systems developed by third parties, such as Europeana.

Public information managed by Museo can be internationally disseminated via OAI-PMH, greatly increasing the visibility of the institution, its heritage, and thus increasing the number of visitors.

Compatible with any platform

Museo is a 100% Web-based solution. To use the system, you only need a Web browser!

The software is centralized on a server and there is no need to install applications on the end-users' workstations. Access to the system can be done from anywhere and from any device, desktop, tablet or mobile.

ARCHITECTURE AND APPLICATION MODULES

Museo is composed of 4 application modules, which are represented in the figure below.

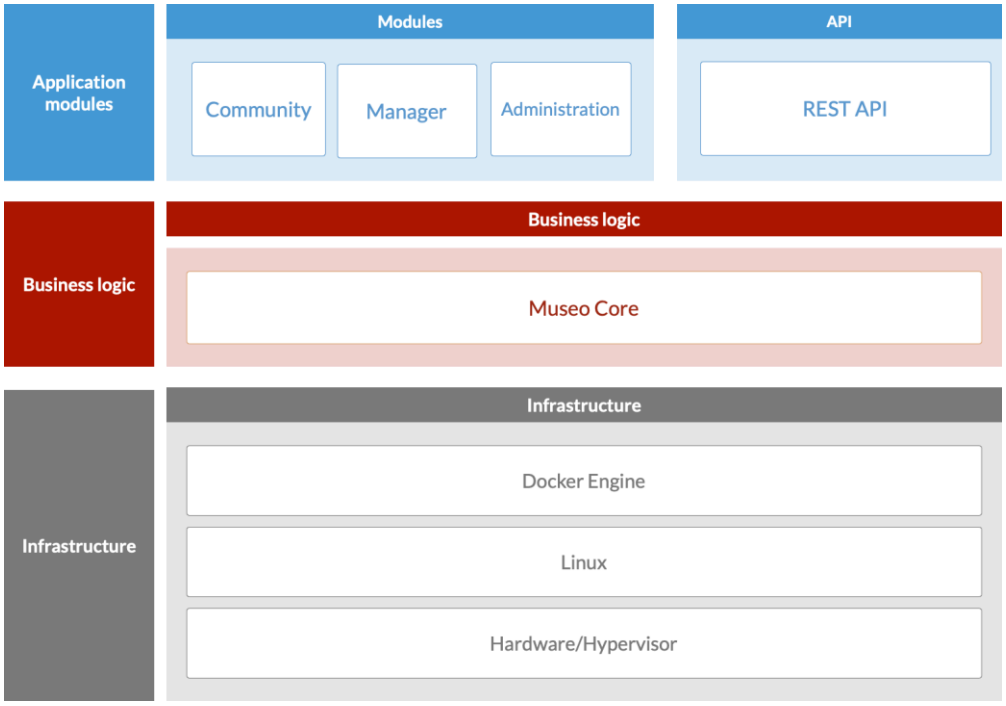

Figure 1 - Museo architecture.

MANAGER

The Manager is the module that is typically used by the museum staff members, providing features such as cataloguing, information discovery, reporting, collection management, management of exhibitions, charts, guides, conservation and restoration, etc.

The system provides a set of predefined filters that allows the users to quickly select the desired information. It also allows enables filtering by typology, controlled vocabulary terms, free text, etc.

Users are supported during creation and editing of information records. Alerts are shown when mandatory fields are not filled, or when compliance with the defined formats is not respected. Contextual help aids users in filling in the information required providing a greater overall conformity to the entire catalogue.

Reports and statistics are also available to Manager users, as well as the ability to print records, export information, and other features.

Museo supports the management of various types of cultural heritage and it is always possible to add new typologies during the product implementation.

Movable material

Movable material is connected to cultural heritage objects with material representation that can be moved.

Examples of movable material are a sculpture, a painting or an utensil.

Immovable material

The immovable material is cultural heritage implanted in the territory, therefore, it is not possible to move it.

A castle, ruins of an old building or a menhir are examples of this sort of heritage.

Intangible heritage

Intangible heritage includes cultural assets that do not have a physical or material representation.

This is the case of festivities, knowledge and traditional crafts, legends, among others.

Documental heritage

The documental heritage covers all sorts documentation that supports the remaining heritage, as well as documents kept by the institution for its cultural value.

For example, a scientific article or a written literary work about a particular object/site with intrinsic value.

Multimedia repository

Despite not being classical cultural heritage type, it is often necessary to register digital-native heritage. To this end, an additional typology has been added to Museo. It allows institutions to catalogue and preserve multimedia objects in digital formats, such as video, photography, documentary, 3D objects, and others.

COMMUNITY

The Community module works as the institution's public portal, allowing the visitor to search and navigate through the museum's inventory. This module can be configured with a custom theme to reflect the branding and identity of the institution.

This module was designed to facilitate the navigation and the discovery of information. It provides a basic search on all the attributes of a record and an advanced search for more refined queries.

During its development, there was a concern to serve well the users that come to the portal for the first time. Users can immediately identify the existing content and navigate directly to the relevant information. As you navigate through the records, hyperlinks to other related records are displayed.

In the context of heritage institutions, there has been an increasing tendency for digitisation what results in huge amounts of digital objects (photographs, videos, 3D models, or others). This trend is motivated by the need to increasingly promote the custodial heritage and ensure the preservation of collections limiting your physical exposure. The Museo software follows this trend and provides a set of integrated multimedia viewers that make it possible for visitors to experience digital representations of cultural assets.

This module was designed with ease of use and simplicity in mind, making browsing and discovering new information easy and fun. Users can find information about existing heritage in different ways.

Catalogue

The catalogue allows the user to search and browse over the inventoried objects.

It allows, among other operations, advanced search, quick filtering, detailed information of an object and its digital representations.

Collections

Collections are units that facilitate the organisation and management of cultural items.

They also facilitate access to special groups of assets enabling the museum to highlight special pieces and communicate better with its public.

Exhibitions

Exhibitions are divided into virtual and in-room exhibitions.

Virtual exhibitions are conceived and disseminated solely via the community module, while in-room exhibitions account for the promotion of existing exhibitions in the museum space.

Charts

Charts are aggregations of georeferenced material, applicable to immovable material such as archaeological findings, religious monuments, etc.

Immaterial heritage can also be georeferenced and organised as charts, e.g., parties and pilgrimages, popular parties, etc.

Tours

The software allows you to set up tours that help visitors navigate through the museum's various spaces and collections. Tours can be interior guides or outdoor routes. Guides are helpers that support the visitor during the visit to the museum, through subtitled plants, audio guides or other multimedia resources. Routes consist of itineraries composed of a georeferenced sequence of places that lead the user along a path through the public physical space.

ADMINISTRATION

The Administration module allows users to configure and customize the system as needed. Through this module, it is possible to change the visual appearance of the community portal, customize the data model, design data entry forms, update controlled vocabularies, manage users, groups and their access policies, as well as many other advanced system properties.

REST API

In addition to the modules already described, Museo offers a REST API. This is a programmatic interface that broadens horizons in terms of integrations with other systems, allowing full control of the software and its information through applications developed by third parties.

Based on standards and best practices, Museo's REST API has been documented using the OpenAPI standard that makes its documentation available online, in an easy to read and test environment.

Museo's REST API is fully secure as only authenticated users they can use it.

WEB CONTENT ACCESSIBILITY

The Web Content Accessibility Guidelines (WCAG) 2.0 are a set of recommendations issued by W3C that aim to make Web content more accessible. Compliance with these guidelines makes content published on the Web more accessible to people with disabilities, such as blindness and low vision, hearing loss and poor hearing, learning disabilities, cognitive limitations, movement limitations, speech impairment, photosensitivity, and others.

Following these guidelines also allows Web content to become more usable by users in general and by mobile devices such as smartphones, tablets, or wristwatches.

Given the importance of this issue, legislation was created to promote the adoption of these guidelines throughout public bodies of the European Union - *Directive (EU) 2016/2102 of the European Parliament and of the Council of 26 October 2016 on the accessibility of the websites and mobile applications of public sector bodies*.

KEEP SOLUTIONS supports this initiative and ensures that all of its products are in full compliance with the AA+ level of the Web Content Accessibility Guidelines (WCAG) 2.0.

Information **security**

Museo incorporates a set of features that make it a highly secure system. Among these, the following stand out:

1) Data exchanged between the client applications and the server are encrypted using the HTTPS protocol;
2) Accesses to features and records are conditioned through access permissions;
3) All operations done on the system by users and services are recorded in a detailed log.

TECHNICAL REQUIREMENTS

Museo requires a minimum of two computers to operate: a “server” and a “client”.

The server is responsible for hosting all the information produced by users, as well as supporting all the business logic. The “client" is used by end-users to access the software.

The following sections describe the minimum requirements necessary for the correct operation of the software on the various computers.

SERVER

RAM	8 GB 16 GB recommend
CPU	2.0 Ghz Dual-Core or superior
HDD	50 GB Depends on the number of records and their growth rate
Operating system	Ubuntu Server 20.04 LTS or compatible No licensing costs
Software	Docker engine No licensing costs
Network	100 Mbit/s or superior 1 Gbit/s recommended

CLIENT

RAM	4 GB
CPU	Intel Dual-Core or superior
Monitor	1280x768 pixels or superior
Operating system	Windows/Linux/MacOS/iOS/Android
Software	Web browser
Network	100 Mbit/s or superior 1 Gbit/s recommended

KEEP SOLUTIONS

KEEP SOLUTIONS is a company whose mission is to provide advanced solutions for information management and digital preservation.

Our approach consists in providing software and services to allow our customers to make a more efficient management of their information assets.

The company started its activity in 2008, having acquired the status of academic spin-off of the University of Minho, for being a business initiative with strong bonds with research centres and departments from this institution.

Our clients are mostly found in the public sector, more specifically in the areas related to archives, libraries and museums.

We invest in the continuous development of innovative solutions. To support that, we remain active in the production of scientific knowledge while engaging in large-scale R&D projects in cooperation with national and international institutions.

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