

# A Digital Gateway to the Museo de San Juan



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# Abstract

The Museo de San Juan is the city's arts and history museum located in Old San Juan, Puerto Rico. This project team collaborated with the Museo to design digital systems to protect their physical archives from natural disasters and to broaden the reach of their educational programs by creating a website featuring exhibitions and workshops. We traveled to other archives, collaborated with museum staff, and used an iterative design process to improve the robustness of the museums previous archival systems. We obtained permission to publish the website from meetings with the Director of Communications, Vice Mayor, and Mayor of San Juan. This project resulted in a secure digital archive and a live website, along with manuals describing how to maintain these systems for the Museo de San Juan.



# Executive Summary

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Located in Old San Juan, Puerto Rico, the Museo de San Juan is the art and history museum of the capital city. In 2017, Hurricane Maria destroyed the physical hard drives and paper records of the Museo, leaving behind a loss of all digital data and only a few surviving records. The museum staff were left unaware of what information and documents remained about the museum's pieces. Due to the impending increase in natural disasters, the museum staff needed a secure digital archive with cloud capabilities. Additionally, the Museo has been established for more than 40 years and has never owned a website, as it requires a complicated process that involves acquiring permission from the Municipality. Thus, visitors have had a difficult time finding basic information about the museum, such as operating hours, events, tours, and exhibitions.

## Objectives and Methods

The mission of this project was to design and implement a digital archive and website for the Museo de San Juan. This would allow staff to easily access and secure information in their collections and enable visitors to find information about the Museo online. The project had the following objectives:



## Objectives

- **Research:** Assess Museo resources and research website/digital archive designs at other municipal and archival institutions.
- **Design:** Iteratively prototype digital archive and website designs while working closely with Museo de San Juan staff.
- **Implement:** Carry out design plans and construct the digital archive system and website.
- **Feedback:** Gather feedback from stakeholders and sponsors and adjust prototypes accordingly.
- **Support:** Develop user manuals/tutorial videos for the museum's staff to maintain the digital archive and website.

We worked closely with our sponsors from the Museo de San Juan to iteratively adjust the designs. Through weekly meetings, we displayed our most recent prototypes, received feedback, and implemented this feedback for the next meeting. We conducted key informant interviews with the Service and Education Coordinator of Cooperativa de Seguros Múltiples, the Interim Director of the Library of Puerto Rico, and the Curator of Arts and Armor of the Worcester Art Museum. In these meetings, we viewed their physical and digital archives to guide our research for developing the archive and organizing the physical space. Additionally, we met with the Director of Arts and Culture, Vice Mayor, Director of Communications, and Mayor of the San Juan Municipality to obtain permission to publish the website and acquire a custom domain.

## Findings

The Museo de San Juan is a small institution with limited resources, thus, we aimed to find an easily maintainable digital archive tool that required minimal funding. With Museo's institutional subscription to Microsoft 365 they can use Microsoft's database software, Microsoft Access, for free. In collaboration with the Museo staff, we chose Microsoft Access to develop the digital archive due to its cloud storage capabilities and compatibility with other Microsoft applications,

We used forms in Microsoft Access to improve the readability of artifacts' data and help museum staff better facilitate through pieces. Forms display artifacts as one page at a time with an easy-to-use interface.



To better organize the contents of the digital archive, we worked with our sponsor, Ms. Benitez, to identify different types of artifacts owned by the museum and organized their entire collection inventory into thirteen different tables and forms based on the types of artifacts.

The Museo de San Juan needed a user friendly and cost-effective option for their website. We created two unique prototype websites on different platforms. After presenting both prototypes to Ms. Benitez, it was agreed that we would use the website building software Weebly. It has a simple user interface, requires no coding knowledge, and has a diverse set of features included in its free tier. Weebly had key components that were requested from Ms. Benitez in its default editor, such as forms, galleries, contact functionalities, and page manipulation. We presented the website to the Museo staff to receive feedback and identify additional aspects to add to the design. We discussed adding additional pages to the website, such as history, careers, and about the team pages.

Importantly, we discovered that the Museo would need permission from the Municipality of San Juan to publish the website and obtain a custom domain. The custom domain would increase the credibility of the website and allow visitors to find the website when searching online. These meetings ultimately led to the decision that the website could be published, and the Museo de San Juan has permission to purchase a paid plan through Weebly to connect a domain.

The Museo de San Juan has two options for purchasing the domain. They can either buy it through Weebly, which



would automatically connect to their website, or they could purchase a custom domain through a domain register, such as GoDaddy. Both options have similar yearly payment plans, but obtaining a domain through GoDaddy would give the Museo the freedom to transport the domain to future websites not created through Weebly.

## Outcomes

We created a fully functional digital archive system and a website that has permission from the Municipality to be published, along with user manuals to support Museo staff in maintaining both systems.

The final digital archive was built using Microsoft Access, as a database that consisted of thirteen different tables and forms with custom functionalities desired by the museum staff.

The screenshot displays the 'Paintings Archive' website interface. At the top, there is a navigation bar with buttons for 'Previous Piece', 'Next Piece', 'Add Piece', and 'Delete Piece'. A search bar is also present, labeled 'Search by' with a dropdown menu currently showing 'Name of Piece'. Below the navigation bar, the main content area is divided into two sections. On the left, under the heading 'Picture', is a large image of a painting depicting a saint (likely St. Michael) standing on clouds, holding a staff, and surrounded by cherubs. Below the image, there is a section labeled 'Brief Piece Description'. On the right, there is a data entry form with various fields. A dropdown menu is open, showing options for 'Name of Piece', 'Serial Number', 'Artist', 'Year Created', 'Keywords', 'Brief Piece Description', 'Estimated Value', 'Location', and 'Specific Location'. The form fields are as follows:

Name of Piece	Luis Mur
Serial Number	1578
Artist	Miguel
Year Created	siglo 20
Date Entered	4/20/202
Location	Museo de San Juan
Specific Location	Deposito de pintura
Dimensions	36x72"
Keywords	angel hurricane staff
Estimated Value	
State of Piece	Good

At the bottom of the form, there are two buttons: 'Changes Not Saved' and 'Save Changes'.

The final website was built using Weebly featuring eight different pages. Its design includes all necessary elements specified by Ms. Benitez and supports both Spanish and English. The site is fully functional and ready to be indexed to search engines using a custom domain.



Departamento de Arte y Cultura de la Municipalidad  
**El Museo de San Juan**  
*Departamento de Educación*

### Nuestra Misión

El Museo de San Juan esta adscrito al Departamento de Cultura del Municipio de San Juan y es una institución dedicada a la exhibición, conservación, búsqueda e interpretación de los objetos que indentifican nuestra herencia histórica.

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### Prendas de Vestir y Desvestir | Atacama

El maestro Antonio Martorell, en su exhibición "Prendas de vestir y desvestir | Atacama", nos muestra olas de abstracciones a través de movimientos del cuerpo, y la utilización de piezas de ropa a modo de pincel, para crear murales en paños de fieltro y alfombras inmensas.

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We developed a user manual for the digital archive describing how to open the archive, modify the contents, and save changes. This manual will serve as a reference on how to use Microsoft Access for Museo staff. To assist Museo staff in maintaining and updating the website after our team leaves, we also wrote a website user manual. This manual explains how to create a website from scratch, manage pages, add elements, and utilize analytics to view visitation. For the physical archival space, we created an infographic that summarized the organizational recommendations from Ms. Gonzalez and Ms. Ayala-Gonzalez.

## Recommendations

To further develop the digital archive, we recommend using the import Excel spreadsheet feature in Microsoft Access to minimize the amount of data entry time. We also recommend using Microsoft's Visual Basics for Applications to add custom features to the archive. Lastly, as the collection grows over time, we recommend investigating larger digital archive software.

To bring the site to the public, we recommend that Museo purchase a custom domain name through GoDaddy. This will give them ownership of the domain even if they decide to move the site off Weebly. If the Museo continues with Weebly, we recommend buying a paid plan to link their domain to the website and gain access to Weebly's premium features. In addition, we recommend adding more pages to the website in the future, including past exhibitions, visitor feedback, and donations. Finally, we recommend that Museo hires a web designer to keep the site's content up-to-date and to manage form responses.

We recommend for the physical space that the Museo separates their documents by location, uses a cataloguing classification system, keep their organization consistent throughout their collections, place smaller documents into folders, and match their naming conventions in both the physical and digital archival systems.

### Customizing and Styling

This chapter demonstrates different features and design options to customize your website

#### How to Update a Logo

A logo is text or an image that appears on every page. To add a logo, hover over the title in the upper left corner to view the options.



If you do not see a site title, navigate to the "Settings" tab.



Next, enter a title for your website in the "Site Title" box and select the "Show title" checkbox underneath to display it. Save these changes and return to the home page.

## Conclusion

The Museo de San Juan is now more resilient to natural disasters, preventing data loss. The digital archive accomplished this by allowing the museum to remotely access information about their collections and always have a backup for their physical collections. Additionally, the Museo can increase its visitation and reach a wider audience through its website. The website addresses commonly asked questions about basic information and highlights the educational program. Both systems can work together to elevate the Museo de San Juan and create a more engaging environment for the staff members.





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# Museum Archive Terminology



## Archive

A place or collection of historical documents, reports, records, and other primary sources containing specific information.

## Museum Archive

A location to store, organize, and maintain diverse collections that typically consist of artwork or artifacts relevant to the theme of the museum.



## Digital Archive

An organized online storage system used by museum staff, scholars, and others to navigate through documents relating to the collection and the museum itself.

## Accessioned Objects

The formal act of legally accepting an object or objects that a museum holds in the public trust. A museum's permanent collection.



## Cataloging

The process of creating a systematic list or record of related items, usually including descriptive information or images. Cataloging is often used to classify and/or manage a collection of materials.

## Collection Management System

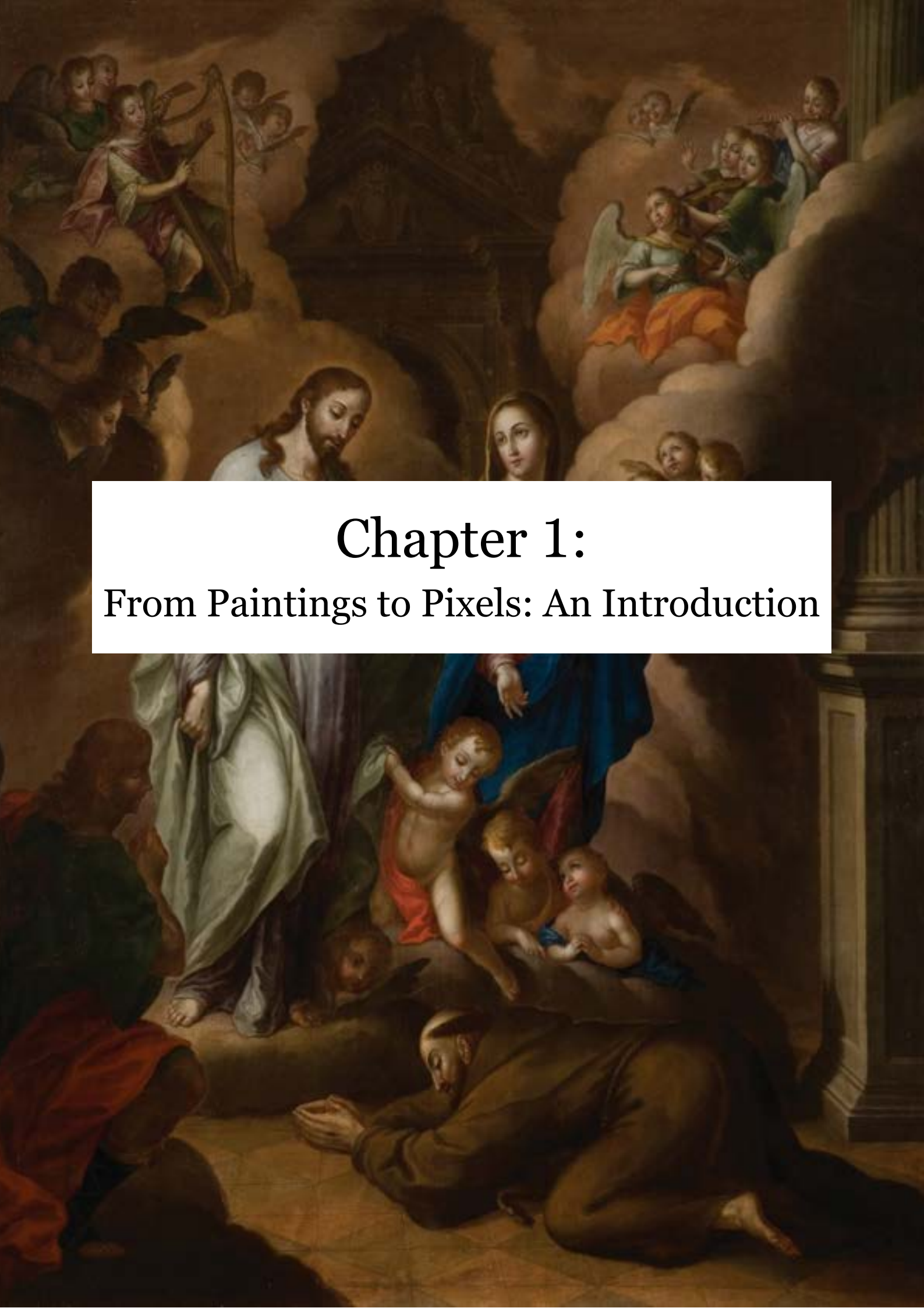
A CMS is an online system that is subject to a high standard of care in which both staff members and the public can access the museum's collection of accessioned objects.



## Finding Aid

A finding aid provides descriptive information about a collection but at different levels of detail and perspective. A finding aid describes the entirety of a collection, as well as the collection's component levels (series, subseries, folders, items).





# Chapter 1:

## From Paintings to Pixels: An Introduction



Figure 1. Artist Antonio Martorell showcasing his exhibit, "Prendas de vestir y desvestir | Atacama" (Museo de San Juan, 2022).

## Priming the Canvas

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Museums play a critical role in preserving local history and heritage. This is especially important in Puerto Rico due to its melting pot of different ancestries, experiences, and cultural backgrounds. By collecting artifacts of cultural significance, museums link the past to the present and the future.

The Museo de San Juan, formally known as the Museo de Arte e Historia del Municipio, is the primary museum for the capital city of San Juan. The Museo showcases historical Puerto Rican artifacts and art pieces. Free to the public, this cultural and educational institution is operated by the San Juan municipality. The Museo's permanent collection features Puerto Rican artifacts from the 16th to the 19th centuries as well as paintings from the famous Puerto Rican artist José Campeche (Museo de San Juan, n.d.). The Museo has temporary exhibitions, including *Garments and Undress/Atacama*, which, as of spring 2023, highlights multimedia print work from modern artist Antonio Martorell (Museo de San Juan, n.d.) (Figure 1).

The Museo de San Juan also hosts art-related events and educational programming. Its expansive courtyard is often booked for concerts, fashion shows, and other events (Museo de San Juan, n.d.). In addition, Museo staff host free craft and art-making workshops for visitors such as crocheting, printmaking, and calligraphy (Museo de San Juan, n.d.).

Despite its importance to San Juan, the Museo is vulnerable to many environmental hazards. In 2017, Hurricane Maria caused severe damage across the island, including the Museo de San Juan. According to the former Educational Department Coordinator, Mr. Kelvin J. Rodríguez Soto, the building was battered, and artifact records were lost or damaged (K.J.R. Soto, personal communication, February 3, 2023).



In addition, important hard drives that stored data on the museum's artifacts were also destroyed. At that time, the Museo stored artifact records on a single, unnetworked computer, so the destruction of the hardware resulted in a complete loss of all digital data, leaving the staff with only a few surviving paper records (K.J.R. Soto, personal communication, February 3, 2023). Presently, the museum still suffers from this loss, with sections of the building in need of repair, and many paper records in disarray.

The COVID-19 pandemic disrupted the entire museum community, including the Museo de San Juan. The lack of museum visitors destroyed connections with surrounding communities. As a result, “there was a sharp pivot towards digital technologies to facilitate the online presence of museums” (Noehrer, 2021, para. 6). The digitization of archives allowed communities to continue to visit museums. Museums that already had a digital presence and online catalogues reported to have a smoother transition into the COVID-19 pandemic than those museums without any online presence (Noehrer, 2021).

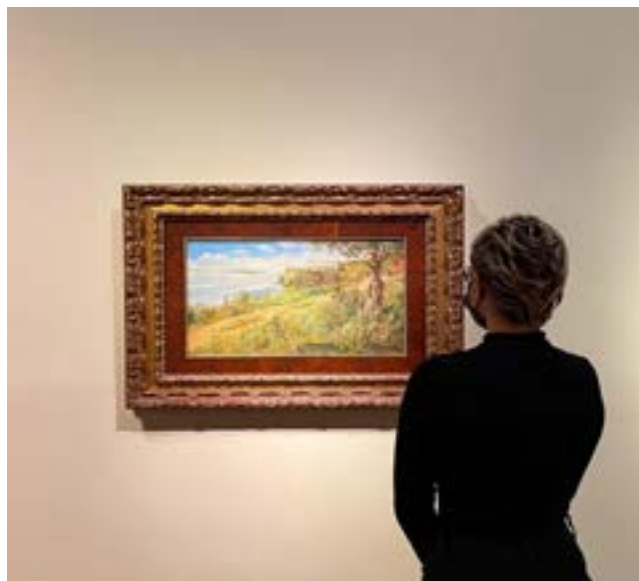


Figure 2. Visitor admiring a painting (Museo de San Juan, 2022).



Figure 3. Sponsor Adriana Narváez, the Museo Educational Department Coordinator, leading a tour (Museo de San Juan, 2022).

To help the Museo de San Juan recover from previous tragedies and endure in the face of current and future environmental risk, technology can be used to make a more resilient record-keeping system. Many museums around the world have digitized their collections along with supporting documentation (Workman, n.d.). Digital archives can serve as a backup in the case of weather risks, and store copies of artifacts before they deteriorate over time and enable artifact information to be shared across institutions and with stakeholders, such as researchers.





Figure 4. Silver art piece from the 16th century in the Museo de San Juan.

There are several factors to consider when creating digital archives, including types of artifacts such as documentation, paintings, sculptures, or media recordings like audio or video files. Additionally, a digital archive system must be scalable to accommodate the expansion of the museum's collection, and stable enough for staff to use with minimal upkeep (Dlib, 2023). Archive design choices are also influenced by, in this case, the Museo's limited resources, as certain options may be too costly or time-consuming.

A digital archive can be useful for more than just preservation. Ideally, museum staff will benefit from being able to easily access artifact information. This includes history, provenance, item description, and location in the museum or collection. Digital archives can also be useful to the public. Scholars may access these systems for research and to help the museum collect information on its own collection. Additionally, digital archives allow visitors to learn about a museum's collection remotely.

Museums typically use websites to attract, educate, and inform tourists and visitors. But, along with the lack of a secure digital archive, the Museo de San Juan lacks a website, making it difficult to find even basic information about the Museo's location, opening hours or exhibitions. "Museum websites are extremely important for museum professionals and museum visitors. The resulting feedback loop should lead to increased visitation and overall visitor satisfaction" (Martenstyn, 2007, p. 2). A website for the Museo de San Juan would allow them to display exhibitions, events, workshops, and other information. Given the Museo's limited financial resources, it could benefit from a cost-effective website building tool that is easy to maintain and update.

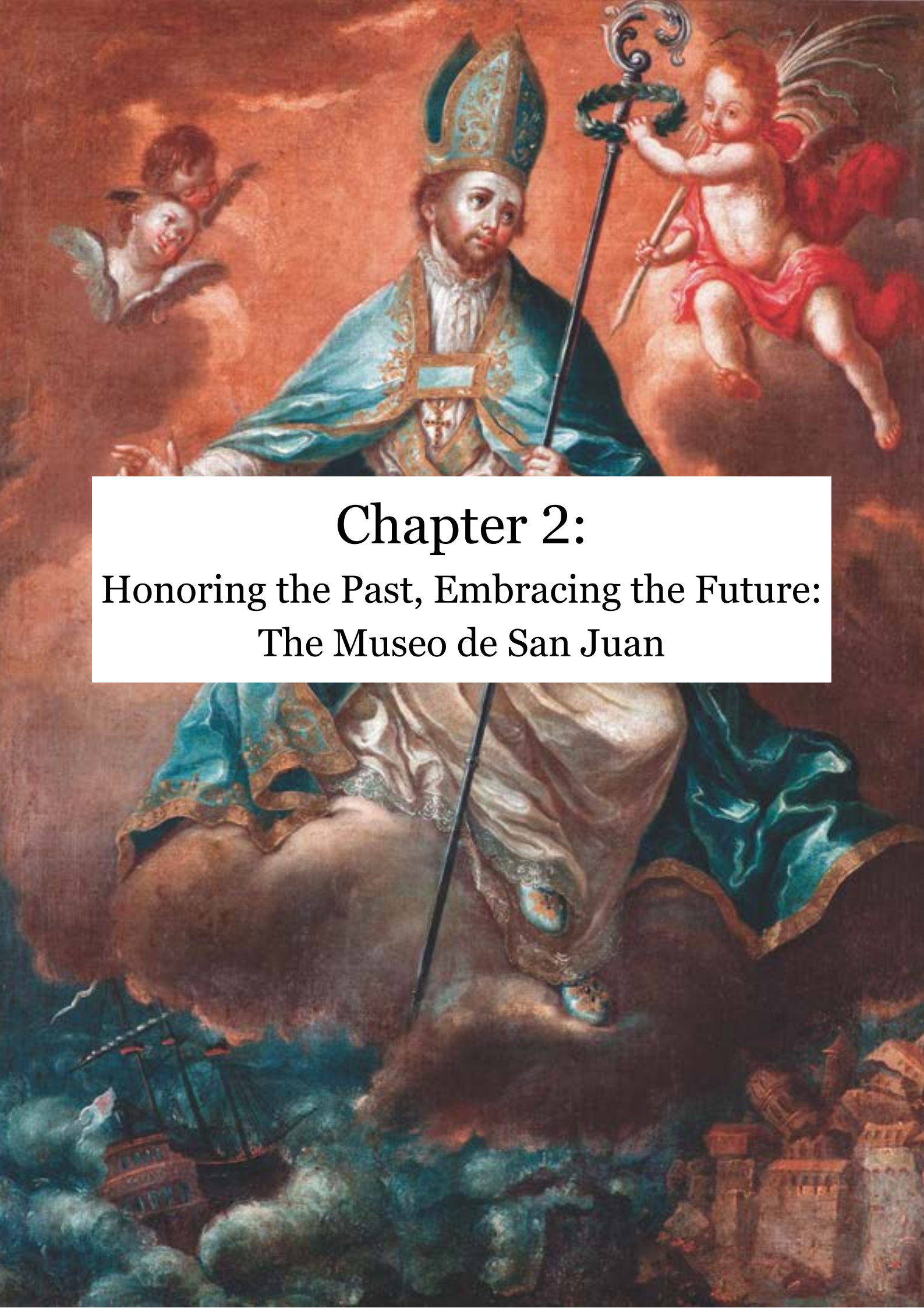
According to the Texas Historical Commission, “the primary mission of most history museums is to collect, preserve, exhibit and interpret objects of historical significance” (Texas Historical Commission, 2013, p.1). Thus, organizing the Museo’s current physical space is an important component of developing their archival system. “Knowing how to handle, display and store the artifacts in your museum’s collection can add a significant number of years to the life of the objects” (Texas Historical Commission, 2013, p.1). Additionally, maintaining the space makes it more accessible to scholars and allows for museum staff to easily locate the items in the collection.

This project addressed the Museo de San Juan’s needs for a secure and shareable organized record-keeping system alongside the design of a prototype website to inform visitors about educational programming and visitor information. This involved an assessment of the Museo’s current archival system and an identification of specific ways it may be improved. The design for a digital archive incorporated strategies, direction, and input from Museo staff. The design of a prototype website was informed by research on website building tools and design options. Furthermore, the project team helped organize and redesign the current physical archive space at the museum. Stakeholder feedback was incorporated into the design of systems and spaces to help transform how people interact with the Museo de San Juan and its collection.



Figure 5. Taller de Mascaras in the Museo de San Juan (Museo de San Juan, 2023).





## Chapter 2:

Honoring the Past, Embracing the Future:  
The Museo de San Juan





Figure 6. Old Farmers Market (Museo de San Juan, n.d.).

# Discovering the Museo

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This chapter presents an overview of the history of the Museo de San Juan. It also provides an explanation of digital archive systems as they pertain to a museum. This chapter also features essential digitization guidelines for small institutions, including the process of creating a digital archive and a comparison of software tools for managing digital files. Related sections highlight user behaviors and their impact on the design of a digital archive. Lastly, information on museum websites is provided along with consideration of website building platforms.

## History of the Museo de San Juan

The Museo de San Juan occupies what was formerly San Juan's open-air farmer's market, which was established in the late 1800's (Museo de San Juan, n.d.). From dawn until dusk, merchants sold artwork, hardware, produce, and other products from all corners of Puerto Rico and the market became a central social gathering spot for people of all classes (Museo de San Juan, n.d.) (Figure 6).

During World War II, the United States expanded its military presence in the Caribbean and needed more storage (United States Bureau of Yards and Docks, 1947). The open-air market was repurposed to fulfil this need by serving as a supply warehouse. After the war ended, the building hosted PRACO, a local grocery, fruit, and vegetable store (Museo de San Juan, n.d.), and eventually DIVEDCO, a program that created educational media on various social, economic, and environmental issues (Museo de San Juan, History, n.d.).

In 1979, the municipality of San Juan founded the Museo de San Juan, formerly known as the Museo de Arte e Historia, to collect and conserve historical artifacts as well as display art pieces from local artists (Museo de San Juan, n.d.). In addition to the main building in Old San Juan, the Museo also coordinates exhibitions in other municipal facilities, such as the San Juan Bautista Gallery, the Paoli room, and the Ashford House (Museo de San Juan, n.d.). Today, the municipality's role in the Museo extends to “hiring staff, approving exhibitions, and assisting the museum with maintenance and funding” (Museo de San Juan, n.d., p. 5). As of 2023, the Museo has 12 staff members consisting of curators, administrative employees, and educators.

The Museo de San Juan is still recovering from the effects of Hurricane Maria. The hurricane damaged the Museo's infrastructure along with its digital archives. Artifact and artwork data stored on the Museo's hard drives were lost, leaving only physical copies of documents (K.J.R. Soto, personal communication, February 3, 2023). According to the Auxiliary Registrar of the Museo, Maria-Laura Benitez, these records are the only remaining copy of their collection data (M. Benitez, personal communication, 2023). Organizing these records and devising a new digital archive system is a crucial step for the museum. Museo staff members have identified that an effective digital archive system could ensure that the Museo's records are preserved and protected even if threatened by other natural disasters (M. Benitez, personal communication, 2023) (Figure 7).

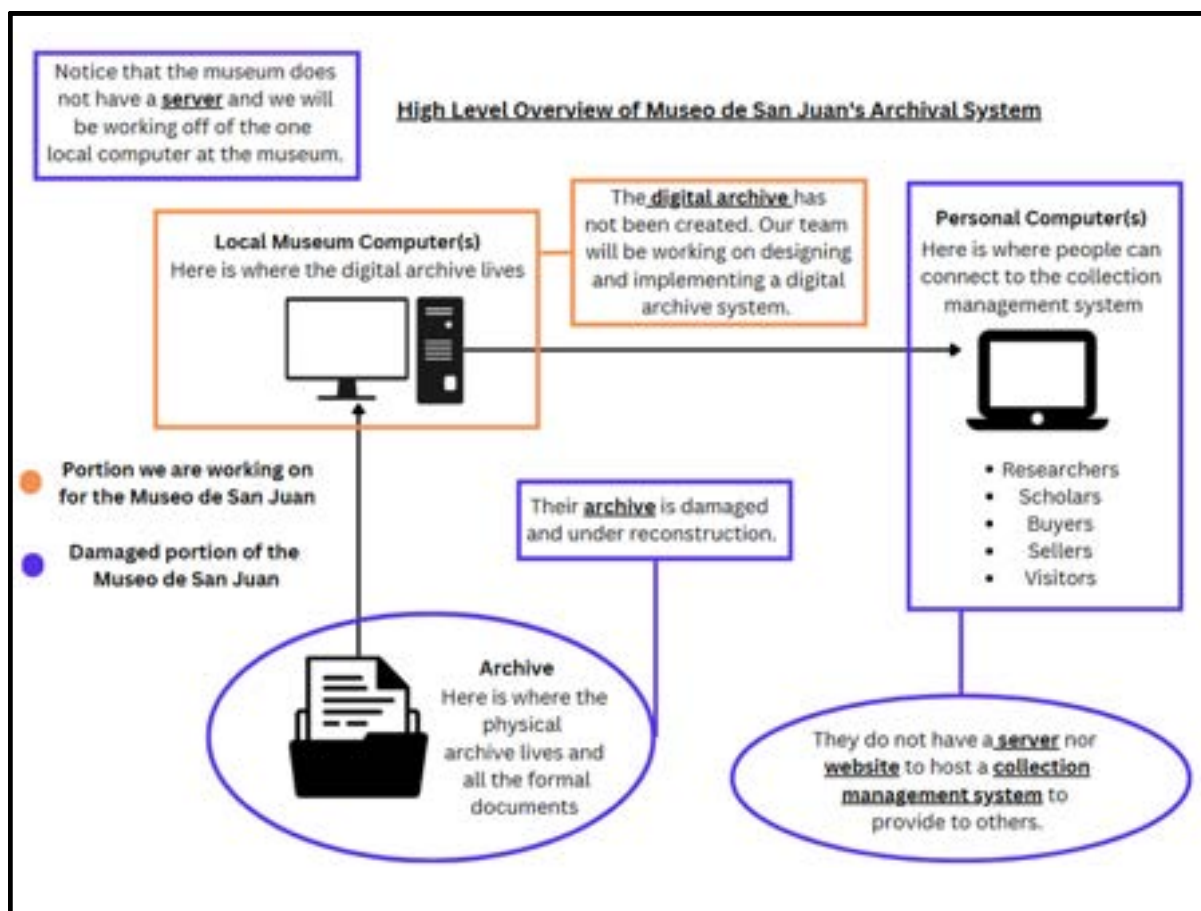


Figure 7. Museo de San Juan's current archival system.

# Archives

## Physical Archives

Archiving is the process of preserving and organizing records for current and future accessibility. In museums, archiving involves physically storing records of objects in a secure environment (Reppert, 2017). Preservation entails cleaning and keeping documents in acid-free boxes and folders, with controlled temperatures and humidity (Reppert, 2017). According to Aisha Gonzalez, the Education and Service Coordinator at Cooperativa Seguros Múltiples, the primary steps to organizing a physical archive include conducting 'inventory with condition' reports, followed by the creation of an appropriate ordering methodology (A. Gonzalez, personal communication, March 27, 2023). 'Inventory with condition' reports entails recording key information and noting the condition, such as cleanliness, state, etc., for each piece in the collection. The ordering methodology is dependent on a variety of factors, including importance of piece, type of piece, artist name, etc. (A. Gonzalez, personal communication, March 27, 2023). According to the Museo de San Juan registrar, Museo staff are interested in digitizing all the content in the physical archive, referring to the documents such as exhibition catalogs, historical documents, magazines, newspaper clippings, photos, etc. that are currently stored in shelves, boxes, and files in the Museo office space (M. Benitez, personal communication, 2023 ) (Figure 8).



Figure 8. Museo de San Juan's current physical archive organization.



## Digital Archives

According to the Curator of Arts and Armor at the Worcester Art Museum, Mr. Jeffery Forgeng, digital archives refer to an online storage system primarily used by museum staff members to organize and navigate through papers and documents relating to the collection and the museum itself (J. Forgeng, personal communication, 2023). This includes the use of specialized software and hardware to store and manage electronic documents such as images, audio, video files, and other types of digital content. In most cases, these systems will use cloud storage. The main benefits of digital archives include preservation, collaboration, and efficient information retrieval (Tallon, 2017).

Currently, the Museo de San Juan utilizes a Microsoft Excel spreadsheet to keep track of its inventory and a digital archive system that is local to a singular computer (M. Benitez, personal communication, 2023) (Figure 9). According to Ms. Benitez, a local system limits access to their digital archive to a user not on the local computer (M. Benitez, personal communication, 2023). Excel does not provide desired searchability, visual images, etc. (Figure 9)

INVENTARIO COLECCIÓN MUSEO DE SAN JUAN							
Fecha: Junio 2022 a Junio 2023				Persona Contacto: Inés Y. Reyes Pérez			
				E-mail: ineperez@sanjuan.pr			
Municipio: San Juan							
Dirección Postal: Museo de San Juan, P.O. Box 902488 San Juan, Puerto Rico 00902-4088							
Nombre de la Obra	Artista	Descripción de la Obra (Módulo y Material)	Año	Número Identificación (serie)	Localización	Ubicación	Valor
Colección Arqueológica (La Piedad y Maricao)	N/A	arqueología	1980	81-1701- 91-2086	Museo de San Juan	Museo de San Juan	0
Colección Departamento de Instrucción Pública	Jack Delano, Rosokam, Louis Rosokam, Santiago	Escultura		001-1444	Museo de San Juan	Deposito de papel	0
Plano del barrio de La Matina	Manuel Walle	plano	1845	1445	Museo de San Juan	Deposito de papel	0
Perfil y elevación de un edificio de pilones	Juan Francisco Morin	plano	1769	1446	Museo de San Juan	Deposito de papel	0
Plano de San Juan de P.R. y sus inmediaciones	Termin O'Dell	plano	1772	1447	Museo de San Juan	Deposito de papel	0
Plano de San Juan Plano de los Tumbos de la Matina	Miguel Rosell	plano	1881	1448	Museo de San Juan	Deposito de papel	0
Alameda de pilones	Juan Francisco Morin	plano	1787	1449	Museo de San Juan	Deposito de papel	0
Puerto de San Juan	Miguelados Cordero	plano	1881	1450	Museo de San Juan	Deposito de papel	0
Plano de San Juan de P.R. y sus alrededores	Campo de Ingenieros Militares	plano	1887	1451	Museo de San Juan	Deposito de papel	0
Ciudad de Puerto de los Angeles	México	plano	1888	1452	Museo de San Juan	Deposito de papel	0
Ciudad de México	México	plano	1781	1453	Museo de San Juan	Deposito de papel	0
Puerto Rico y su Bahía	Luis Veraghe Otero	plano	1678	1454	Museo de San Juan	Deposito de papel	0
Puerto Rico, en la isla de una reunión	José de Prada	plano	1782	1455	Museo de San Juan	Deposito de papel	0

Figure 9. Museo de San Juan's current Excel Spreadsheet showing their inventory of their collection (Museo de San Juan, 2023).

# Digitization Guidelines for Small Museums

According to the Digital Preservation Handbook by the Digital Preservation Coalition (2020), many museums and libraries are transitioning to digital archives, but some lack the necessary expertise to implement the technology. This is especially important for small institutions that are looking to begin this process and have limited resources. The Missouri Historical Records Advisory Board, the Digital Preservation Coalition, and the Minnesota Historical Society have created digitization guidelines to showcase the best practices for transitioning to a digital archive system.

## Planning

Digitization projects are widely regarded as being costly and time consuming regardless of the size of the institution (Missouri Historical Records Advisory Board, 2013). It is crucial to construct a plan and answer key questions prior to deployment of any digital archive (Tallon, 2017). These questions include identifying if the institution has sufficient funds and staff to complete the project, who will use the digital archive, and how will the archive be managed after its creation (Minnesota Historical Society, 2016). The planning phase is especially important in a small institution, due to limited funding and staff members who “will need to wear many hats” (Minnesota Historical Society, 2016, p. 5).

## Selecting Materials to Digitize

According to the Missouri Historical Records Advisory Board (2013) it is often not feasible for small institutions to digitize their whole collection due to budget constraints. The selection of materials for digitization is based on criteria such as value, use, condition, characteristics of the original piece, appropriateness of use, and access (Table 2).

Criteria	Brief Description
Value	Pieces of work with high value are highly desirable to digitize, to preserve and protect the work while ensuring security.
Condition	Pieces of work that are damaged or extremely fragile are essential to digitize along with items stored on unstable media.
Use	Pieces of high demand are to be digitized to allow many different users to interact with the piece at once.
Characteristics of originals	Original pieces that are presented in different physical formats are desired to digitize to portray the deviation of the work in different formats. (Paper, photographs, etc.)
Appropriateness of Digital Reproductions for Use	In the cases of some pieces of work, the technology/software of the digital archive may not exist or be too immature to produce the desired results for large scale production. It is important to ensure that the work can be appropriately captured and reproduced in the digital archive, with no flaws.
Access	All access aids, finding aids, and user guides of the digital and physical archives must be digitized and preserved in the system to ensure its upkeep over years to come.

Table 2. Criteria for Selecting Material to Digitize adapted from (Missouri Historical Records Advisory Board, 2013).

## Metadata

When creating a digital archive, metadata is what “documents the identification, management, nature, use and location of a resource” (Missouri Historical Records Advisory Board, 2013, p. 4). If an archive needs to be searchable, having the correct metadata is critical for storage and retrieval of digital information. According to the digitization guidelines from the Missouri Historical Records Advisory Board (2013), there are four distinct categories of metadata: descriptive, structural, administrative, and preservation. Descriptive data are the ‘who, what, where, and when’ of the item. Structural metadata are the number of pages, collection information or other information about the physical nature of the item. Administrative metadata is when the item was digitized, the rights and reproduction information location etc. Preservation metadata includes the technical support information, such as the entry date (Figure 10).

Photo		Metadata
	Piece	Mona Lisa
	Artist	Leonardo da Vinci
	Year	1503
	ID	IB73012
	Location	Louvre Museum

Figure 10. An example of metadata for a piece in a digital archive.

## Lossless and Lossy File Types

A file system is the essence of the working digital archive system. The Missouri Historical Records Advisory Board recommends ‘lossless’ formats for archival purposes and a ‘lossy’ file format for uploading to an public online platform. A lossless format preserves all the file’s original data, while a lossy format loses some data when it is converted to a certain file type (Hoffman, 2017). Examples of lossless files are RAW, BMP, and PNG, while examples of lossy format files are JPEG and WebP (Hoffman, 2017). Using a lossless format will compress the file while keeping the data secure (Missouri Historical Records Advisory Board, 2013). Although lossless files retain the

quality of the data, they require significant storage space. Lossy file formats also reduce the size of the file, but each time the file is saved, part of the file information is discarded. The Missouri Historical Records Advisory Board (2013) does not recommend lossy file formats for long-term preservation. (Table 3)

## Managing Digital Files

It is in the best interest of an institution to possess multiple copies of files stored on different computers or in the cloud. According to the Missouri Historical Records

Advisory Board, the most secure storage solution is online cloud storage. This option requires a remote server and needs to be regularly maintained, which may be too expensive for a small institution such as the Museo de San Juan. Instead, a

Media Type	Preservation	Access	Notes
Images/Photographs	TIFF/.tif	JPEG/.jpg	
Documents	TIFF/.tif; PDF/A	JPEG/.jpg; PDF/A	
Audio	Waveform Audio File/.wav; Audio Interchange File Format/.aiff	MP3	Uncompressed formats are too large for many users to access over the internet: a lossy format should be used.
Video	No official standard; Library of Congress has adopted JPEG2000 with an MXF wrapper	MPEG-2; MPEG-4; AVI; MOV	Preservation quality video is expensive to store; a single hour can take up to 72 GB.

Table 3. Recommended file types for different media types. (MHRAB, 2013).

more cost-effective solution could be to use hardware, such as DVD/CDs, Flash drives, portable hard drives, etc. CDs have a limited shelf life of less than 10 years, and thus need to be checked on a regular basis to ensure that the data remains intact (Council on Library and Information Resources, 2022).

## Placing Digital Files Online

For placing files online, the Missouri Historical Records Advisory Board (2013) recommends different software options depending on the needs of the museum. If most of the items in a museum's collection are photographs or maps, they recommend Flickr, a simple photo-sharing website that "allows each user one terabyte of cloud storage space and unlimited uploads" (p. 8). They also recommend Fotki, PBase, and SmugMug, although some of these websites have associated fees.

For institutions that do not have mostly images in their collections, the Missouri Historical Records Advisory Board recommends ContentDM, Omeka S, Omeka.net, and Collective Access. Mr. Forgeng recommended Microsoft Access, which is the software system that the Worcester Art Museum uses for their digital archive (J. Forgeng, personal communication, 2023). Microsoft access is a database management system that supports multiple users (Microsoft Support, n.d.). This software is included in Microsoft 365, allowing for full compatibility with Microsoft applications, such as Excel. Software resources have a variety of advantages and constraints (Table 4).



Software	Pros	Cons
ContentDM (ContentDM, 2023)	<ul style="list-style-type: none"> <li>- User features</li> <li>- Accessibility guidelines</li> <li>- Cloud based digital preservation</li> </ul>	<ul style="list-style-type: none"> <li>- Starting price is by quote only</li> <li>- No free tier</li> </ul>
Omeka S (Omeka, 2023)	<ul style="list-style-type: none"> <li>- Free, open-source software</li> <li>- Customizable templates</li> </ul>	<ul style="list-style-type: none"> <li>- Needs a server</li> </ul>
Omeka.net (Omeka, 2023)	<ul style="list-style-type: none"> <li>- Free trial</li> <li>- Enables easy upload of pieces with pictures and descriptions</li> <li>- Customer support options</li> </ul>	<ul style="list-style-type: none"> <li>- Requires a payment plan</li> </ul>
Collective Access (Collective Access, 2023)	<ul style="list-style-type: none"> <li>- Free, open-source software</li> <li>- Customizable catalogues</li> <li>- Customer support options</li> </ul>	<ul style="list-style-type: none"> <li>- Software is old</li> <li>- Confusing for users without coding knowledge</li> </ul>
Microsoft Access (Microsoft Access, 2023)	<ul style="list-style-type: none"> <li>- Free trial with Microsoft 365</li> <li>- Cloud-based storage</li> <li>- Compatible with other Microsoft applications</li> </ul>	<ul style="list-style-type: none"> <li>- Learning curve</li> <li>- Old software</li> <li>- No public access capabilities</li> </ul>

Table 4. Comparing software options for a digital archive.

## Digital Archive Users

Digital archive designs can change depending on the needs of users. For some institutions, it is reasonable to make their digital archive publicly accessible, meaning that the collection can be viewed by museum visitors, researchers, and scholars. In some cases, it is more useful for the institution to have an internal digital archive that is solely accessible to museum staff.

### Museum Staff

Digital archives enable museum staff to efficiently preserve the museum's collections and historical records (Tallon, 2017). Staff can easily store and access information about each item in the collection, including metadata.

## Scholars

Museum collections are intended for display, research, and reference (Smithsonian Institution, 2023). Scholars also benefit from the digitization of physical archives. According to experts at the Arna Bontemps Museum (2022), museum scholars may have a variety of duties – cataloguing new acquisitions, conducting historical research on the museum’s collections, or writing exhibit text.

Museums can benefit from having their digital archives accessible to scholars. Research done to help a museum usually refers to the process of a scholar discovering where a specific artifact originated from and information about its history (National Park Service, 2021). These transactional interactions credit scholars for information they find about an artifact, and the museum is rewarded with additional information about its collection (A. Gonzalez, personal communication, March 27, 2023).

## General Public and Visitors

Museums may allow visitors access to their collections digitally without having to physically visit the museum. Placing their collection online for public viewing can help the museum elevate its reputation and enhance the diffusion of knowledge between the museum and the public (Smithsonian Institution, 2016).

## Museum Websites

A useful museum website “should lure online visitors into the museum’s collections virtually and inspire them to visit the museum in person” (Martenstyn, 2013, p. 2). Additionally, visitors may want to search through the website to learn more about the museum’s history

and its pieces (Martenstyn, 2013). Together, the feedback loop between the physical museum and its website can improve visitation and guest satisfaction (Martenstyn, 2013). Museum websites benefit both visitors and staff. For example, the Metropolitan Museum of Art’s website handles ticket sales and connects guests to audio guides, virtual events,



Figure 11. The landing page for the Metropolitan Museum of Art (Metropolitan Museum of Art, n.d).

guided tours, and many other educational resources (MET, n.d.). Some museum websites also advertise open staff positions, offer spaces for private events, and post volunteer opportunities (Smithsonian, n.d.) (Figure 11). The Museo de San Juan does not currently have a website. Creating and hosting a website under the Municipality of San Juan is a complicated process that requires resources that are being utilized elsewhere in the museum.

## Website Building Software

According to Mayank Sharma of TechRadar, a website builder is an online or an offline application to help build a professional website (Sharma, 2022). Building a website often requires coding knowledge, but website builders enable individuals to create a website easily and quickly without coding (Sharma, 2022). There are many different website software options available with a variety of pricing options, templates, themes, and other features. Many website building systems include a free tier and allow the purchase of additional elements such as calendars, translation features, and more complex themes that can be applied to the page (Table 5).

Software Options	Pricing	Hosting	Design Options	QR Codes and Social Media Links	Customer Support
Linktree	Has a premium paid option, but is usually free	Hostings is free	Some free themes offered, layout of page restricted to buttons	Unlimited links to other pages (may include social media)	Support within 48 hours
WordPress	Has a limited free tier	Hosting is free	Themes and patterns offered	Unlimited pages and links Social media integration (30 shares per month)	Free email and basic live chat support
Yola	Has a very limited free tier	Hosting is free	Has limited free options, but is a multilingual website Includes contact forms for visitors	Has social integration with all social media and google features	Limited customer support
Weebly/Square	Has a robust free tier	Hosting is free	Simple to use, with limited but quality themes	Has an app center that allows for different options, such as social media in your website Supports transactions for free, takes a fraction of the profit (Square)	Free chatbot and additional email customer support options

Table 5. Comparison of website building software options.



# Domains

When implementing a professional website, it is crucial for a museum such as the Museo de San Juan to have a custom domain. Without this, it can be difficult to find a website when searching online and it can cause the institution to lose credibility (Bell, 2021). “A domain name is a unique string of text that’s used to identify a specific resource on the internet. This could be anything from a website to an email or FTP server” (Codecademy, 2021, para. 3).

By providing users with a name to remember instead of an IP address, domain names simplify the process of finding a website. As of 2023, all software listed in Table 5 includes a free domain name, but a custom domain requires a paid plan. A custom domain also allows institutions to create professional email

A screenshot of the GoDaddy domain search interface. It shows a list of domain options for the keyword 'museodesanjuan'. The domains listed are .org, .net, .store, .info, .co, .club, .biz, and .com. Each entry shows the domain name, a price for the first year, and a 'Buy' button. The .store domain is highlighted with a blue button.

Domain	Price	Action
museodesanjuan.org	\$9.99 for the first year	Buy
museodesanjuan.net	\$4.99 for the first year with a 2 year registration	Buy
PROTECTED museodesanjuan.store	\$0.99 for the first year	Buy
PROTECTED museodesanjuan.info	\$3.99 for the first year	Buy
PROTECTED museodesanjuan.co	\$2.01 for the first year with a 2 year registration	Buy
PROTECTED museodesanjuan.club	\$4.99 for the first year	Buy
PROTECTED museodesanjuan.biz	\$9.99 for the first year	Buy
museosanjuan.com	\$0.00 for the first year with a 2 year registration	Buy

Figure 12. Domain options available for purchase via GoDaddy (GoDaddy, 2023).

addresses for staff members. A custom domain can be acquired using a domain register. These are companies that supply and host domain names, such as GoDaddy (Figure 12). After acquiring a domain name, it is important to follow good safety practices such as keeping the domain name locked, using a reputable domain register to buy the name, and registering the domain name variations to allow for typos when searching (Codecademy, 2021).

## Supporting the Museo de San Juan

The Museo de San Juan has a rich history and collection of artifacts to preserve and to share. Using research on digital archive systems and digitization guidelines, this project team worked with Museo staff to design and implement software to build their digital archive. The design of a digital archive prioritized limiting information loss from natural disasters, increasing accessibility for museum staff, and searchability. The design of the website focused on bringing in new visitors as well as facilitating workshops and events.





# Chapter 3:

## Painting the Canvas: Methods







Figure 13. Nostalgia Nocturna (Museo de San Juan, 2021).

## Painting the Canvas

This project's mission was to design a digital archive and website for the Museo de San Juan to allow them to easily access and secure information on their collections and enable visitors to find information about the Museo online. This project had numerous objectives (Figure 14).



Figure 14. Diagram of objectives and the project sequence.







Figure 17. The team with the Ms. Ayala-Gonzalez.

## Designing the Digital Archive and Website

Based on stakeholder feedback and our research, we prototyped design options for the digital archive along with the website. The planning process included comparing software tools, deciding which features to implement, and using the correct metadata and file types in the digital archive. This metadata included the following fields:

- Image of piece
- Name of piece
- Serial number
- Artist
- Year created
- Date entered
- Location
- Specific location
- Dimensions
- Keywords
- Estimated value
- State of piece

Figure 18. Metadata for the Digital Archive

The Microsoft Access database we designed consists of tables and forms. Tables have a similar format to Excel spreadsheets. Each column header in a table represented the different metadata and each row represented a different record for the museum. The database was separated into thirteen different tables to organize the archive based on the type of artifacts. The types of artifacts were:

- Photography
- Sculptures
- Paintings
- Art on Paper
- Audio Visual
- Newspaper Cuts
- Carvings
- Graphics
- Decorative Objects
- Archeology
- Murals
- Drawings
- Architect Sketches

Figure 19. Types of Artifacts for the Digital Archive

For the design of the website, we included pages titled reserve, visit, and history along with an inviting landing page. We implemented an interactive map and different forms for workshops, reserving spaces in the museum for events, and for requesting guided tours. We also identified additional elements to include, such as an embedded Google Calendar to display the museum's upcoming events and a translation feature that allows the website to be in either Spanish or English.

## Implementing the Design Plans

Once the digital archive design was completed in Microsoft Access, we transferred over our database into the Museo de San Juan's computer system. This entailed first emailing the template database we made to the Registrar computers, as this department of the Museo would have access to interact and update the archive. We downloaded the digital archive from the email, where it was then uploaded to the Municipio de San Juan OneDrive. We tested it by making changes and interacting with our design.

We ensured that computers in the Cultura department could view the digital archive via Microsoft SharePoint. We also made sure that when changes were made, all computers would see the updates. This confirmed that the system implemented was cloud based and secure.

We implemented the website pages using built-in Weebly elements and an online guide created by Vladimir Kochkovski (n.d.) to incorporate a Spanish to English translation feature. Ms. Narváez and the graphic



Figure 20. Access database viewable on a Cultura Department computer.



designer of the Museo, Ms. Leslie Perez, provided photos of museum artifacts and a video of Antonio Martorell's exhibit to display on the exhibition page of the site. We filled the remaining pages with images from the Museo de San Juan's social media sites. For any questions on how to use specific features included in Weebly, we referred to the online Weebly support page. (Figure 21).

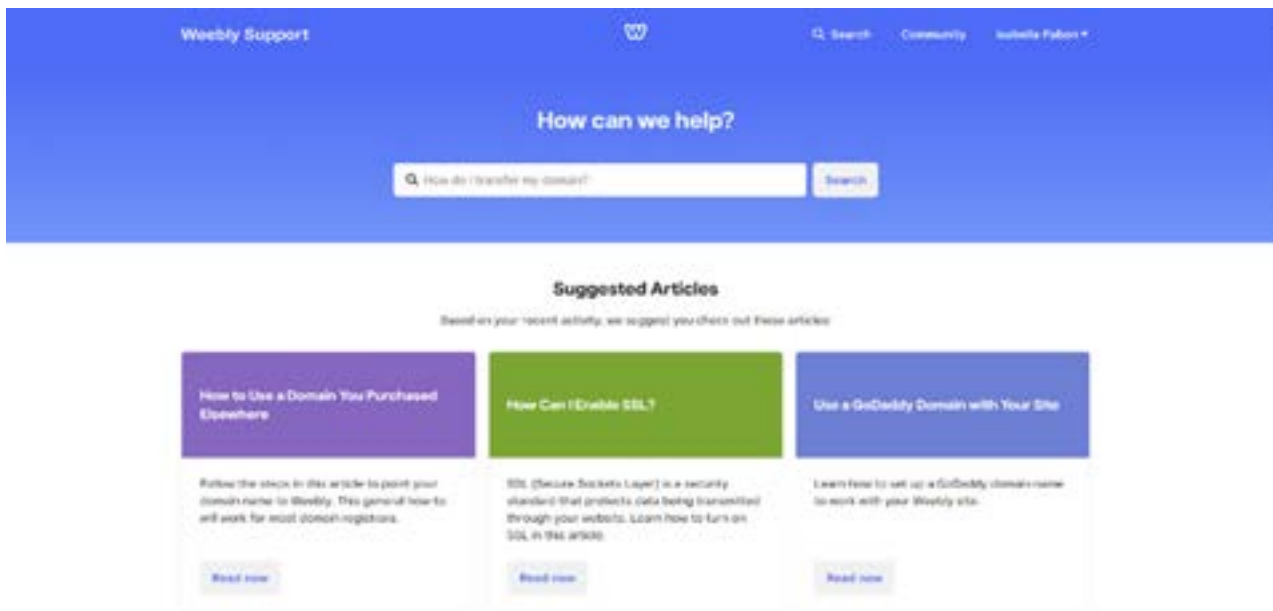


Figure 21. Weebly Support Page (Weebly, 2023).

## Gathering Feedback and Adjusting Prototypes

Once the prototype digital archive design and implementation was complete, we met with the Museo registrar, Irmari Reyes, and Ms. Benitez, who would be the primary users of the digital archive. We gathered their feedback on the digital archive and other features. Given their stakeholder feedback, we reorganized the layout of the archive, shifted the location of the metadata, and made the buttons larger in the top to make the archive easier to navigate.



Figure 22. The team showcasing the digital archive to Ms. Reyes and Ms. Benitez.

Over the course of several meetings with sponsors and advisors, we presented numerous versions of the website. The website evolved over time with this iterative design approach. We added new pages including about us, careers, and history tabs.

## **Developing User Manuals and Tutorial Videos for Maintenance**

To support the museum staff in utilizing the digital archive after the project ended, we created a comprehensive user manual for the digital archive to leave behind. Similarly, we developed a complete user manual, video guide and infographics for the website. We then met with Ms. Benitez to allow her to read through the manuals and inform us if she had any questions regarding the content within the manuals.



Figure 23. La Torrecilla in the Museo de San Juan (Museo de San Juan, 2022).



A surreal painting with a textured, painterly style. In the upper half, a large, bright yellow crescent moon dominates the sky. Below it, a small red Volkswagen Beetle is parked on a yellow, hilly landscape. In the lower half, a dark brown ship with multiple masts is visible on the left, amidst turbulent blue and white waves. To the right of the ship, several large, yellow, leaf-like shapes with dark veins are scattered across the foreground. The overall color palette is dominated by yellows, blues, and browns, with a white rectangular box containing the chapter title in the center.

## Chapter 4:

### Framing the Piece: Findings





Figure 24. Vista de la Bahía de San Juan (Museo de San Juan, 2021).

# Framing the Piece

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Our project focused on digitizing the physical collections and prototyping a website for the Museo de San Juan. Given the prominence of natural disasters in Puerto Rico, their physical collections were left unorganized and at risk of further damage following Hurricane Maria. Thus, it was important to address the need for a digital archive for the institution. In addition, tourists and visitors in Old San Juan commonly entered the building, asking similar questions regarding the hours, entry fee, and exhibitions of the Museo. Addressing this need for a website would allow visitors to find basic information about the Museo online.

## Digital Archive

### Microsoft Access

The Museo de San Juan needed a cost-effective system to quickly access information on their collection. We found that the Museo had an institutional subscription to Microsoft 365, as they are under the Municipality of San Juan. Therefore, we decided to use Microsoft Access to develop the digital archive, as it is a secure and dependable application that would be free to use with their subscription.

## Forms

Forms in Microsoft Access improve the visual appeal of a digital archive. Every table in the database is linked to a specific form. Forms display the same information from the corresponding table, on an entirely customizable page. Forms represent the data as one artifact per page with a customizable design interface, which is beneficial for readability (Figure 25).



Figure 25. Form Design Toolbar

## Organization

The Museo de San Juan's inventory Excel spreadsheet was not grouped by the types of artifacts, so managing the inventory was difficult for staff. We worked with Ms. Benitez to identify the thirteen different types of artifacts and separated them into different tables of the Access database to make it more organized.

## User Privileges

The Museo de San Juan's computer system had different accounts for each department. Ms. Benitez informed us that only the Registrar department should be able to work on the archive, and the Cultura department should be able to view the archive, but not make changes. We controlled the OneDrive and SharePoint privileges depending on the department to ensure these restrictions were set.

## Website

### Weebly

The Museo de San Juan needed an easy-to-use website building tool for long term maintenance. We researched various cost-effective software options (Table 5) and created sample prototypes in both Weebly and WordPress. Ms. Benitez told us that she preferred Weebly due to its intuitive design and user-friendly tool set.

## Additional Website Design Features

Throughout the website design, we frequently met with Ms. Benitez to show her the latest prototype. This iterative approach allowed us to receive feedback and find additional

features that could be linked to a

Weebly site such as a Google Calendar tool that could be automatically

updated through Google's interface and an interactive map for visitors of the museum. We also found multiple

pages to add to the website, such as a 'history' page to describe the history of the Museo, an 'about the team page' to highlight the staff, and a 'careers' page to centralize job postings.

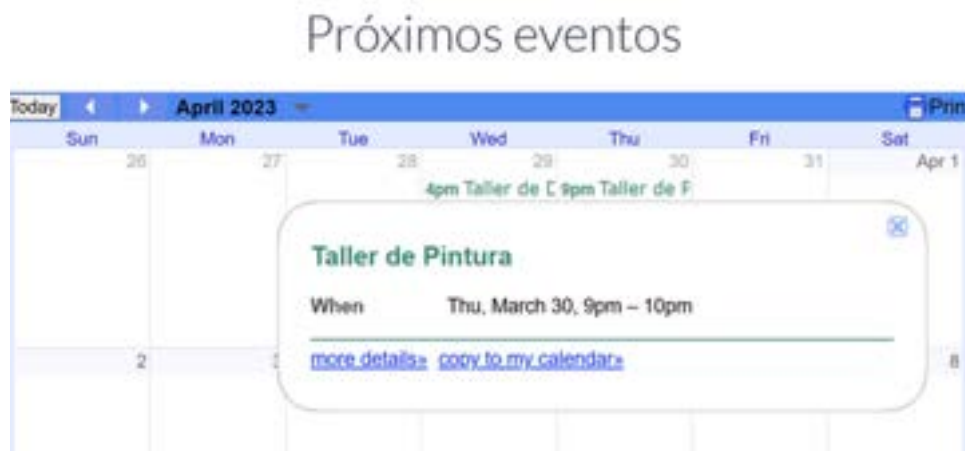


Figure 26. Calendar Feature on the Website Prototype

## Domain

### Meetings with the Municipality

As the Museo de San Juan is under the Municipality of San Juan, we discovered that it was necessary to obtain approval from the Municipality to publish the website. We met

with important figures in the Municipality to showcase our prototype to support Museo staff in securing permission to publish the website. The team received feedback from the Director of Arts and Culture of the Municipality, Mr. Antonio

Morales Cruz; the Vice Mayor of San Juan, Mr. Israel Alicea; the Director of Communications for the Municipality, Ms. Michelle Cobb; and the Mayor of San Juan, Mr. Miguel Romero. These meetings led to the decision to approve the launch of a website for



Figure 27. Vice Mayor Israel Alicea navigating through the website.

Morales Cruz; the Vice Mayor of San Juan, Mr. Israel Alicea; the Director of Communications for the Municipality, Ms. Michelle Cobb; and the Mayor of San Juan, Mr. Miguel Romero. These meetings led to the decision to approve the launch of a website for



the Museo de San Juan and that the Municipality would approve the purchase of a custom domain and a professional plan with Weebly.

## Domain Options

We found two options for purchasing the domain. The first was to purchase a domain through Weebly, and the second was to purchase it through an external domain register. We decided that the external domain was the better option as it gives the Museo more freedom with their domain name.

If purchased through Weebly, it would be permanently attached to the website we created.

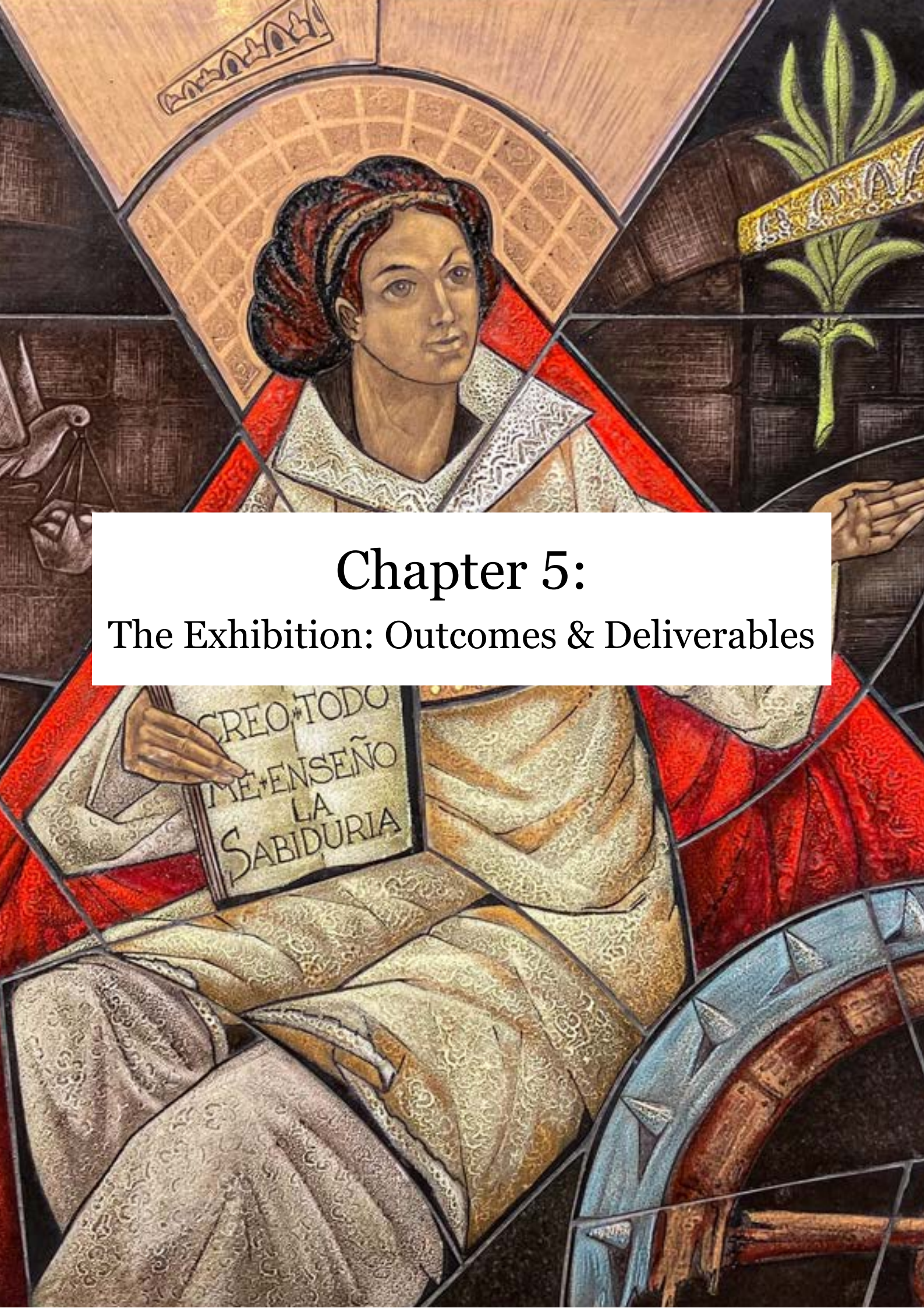


Figure 28. Team presenting the project to the Director of Communications, Michelle Cobb.



Figure 29. Team with the Mayor of San Juan, Miguel Romero.





## Chapter 5: The Exhibition: Outcomes & Deliverables





Figure 30. Marina (Museo de San Juan, 2022).

# The Exhibition

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This chapter displays the final outcomes of the project, including a secure and cloud-based digital archive, a publishable website, user manuals for archive and website maintenance, along with suggestions on how to organize the Museo's physical space.

## Microsoft Access Digital Archive


The complete digital archive is a Microsoft Access database that consists of tables and forms for every type of artifact.

The custom form design we designed includes metadata, an image, custom buttons we made for searchability, navigation control, and changes that can be saved automatically (Figure 31). Forms retrieve their information from the linked table, which expresses data similarly to an Excel spreadsheet (Figure 32).



**Paintings Archive**

Previous Piece   Next Piece   Add Piece   Delete Piece   Search by



Picture

Name of Piece: Luis Mul

Serial Number: 1578

Artist: Miguel F

Year Created: siglo 20

Date Entered: 4/20/202

Location: Museo de San Juan

Specific Location: Deposito de pintura

Dimensions: 16x72"

Keywords: angel hurricane staff

Estimated Value:

State of Piece: Good

Changes Not Saved   Save Changes

Brief Piece Description

Figure 31. Microsoft Access Digital Archive Form Design

Serial Number	Name of Piece	Artist	Year Created	Estimated Value	Location	Specific Location
2255	Pasado, present	Natalia Rodríguez	2009		Museo de San Juan	Deposito de pintura
2256	El reflejo de mis Lilliam	a A. Acosta	2009		Museo de San Juan	Deposito de pintura
2257	San Juan 500 años	Juan R. Jusino	2009		Museo de San Juan	Deposito de pintura
2258	San Juan 500 años	Gloria Morales	2009		Museo de San Juan	Deposito de pintura
2259	Reflejo de una g	Gilbert Serrano	2009		Museo de San Juan	Deposito de pintura
2260	Recuerdos de mi	Jacqueline Hernández	2009		Museo de San Juan	Deposito de pintura
2261	Un viaje en San	Alexander Mercaderes	2009		Museo de San Juan	Deposito de pintura
2275	Caminando por	Sharon Nieves	2010		Museo de San Juan	Deposito de pintura
2276	Caminando por	Giovanni Olmedo	2010		Museo de San Juan	Deposito de pintura
2277	Bello momento	Alejandro Camacho	2010		Museo de San Juan	Deposito de pintura
2279	San Juan ayer,	Solangel Rivera	2010		Casa Alcaldia	Oficina Quinto
2281	Caminando por	Jennifer D. Pérez	2010		Museo de San Juan	Deposito de pintura
2282	Raíces de mi	Pri Harold Quiles	2010		Museo de San Juan	Deposito de pintura
2318	San Juan marav	Nayel J. Rivera	2012		Museo de San Juan	Deposito de pintura
2319	San Juan, Ciudad	Sidney Oñate	2012		Museo de San Juan	Deposito de pintura
2320	San Juan, Ciudad	Thalia I. Encarnación	2012		Museo de San Juan	Deposito de pintura
2324	San Juan #1 en	Stephanie Anón	2012		Museo de San Juan	Deposito de pintura
2325	San Juan, Ciudad	Jonathan Díaz	2012		Museo de San Juan	Deposito de pintura
2326	San Juan, Ciudad	Rubí Quintana	2012		Museo de San Juan	Deposito de pintura

Figure 32. Microsoft Access Digital Archive Table View

# Weebly Website

The website design built in Weebly consists of eight different pages titled: 'Pagina Principal', 'Visitar', 'Eventos', 'Reserva', 'Historia', 'Nuestro Equipo', 'Exhibiciones', and 'Carreras'.

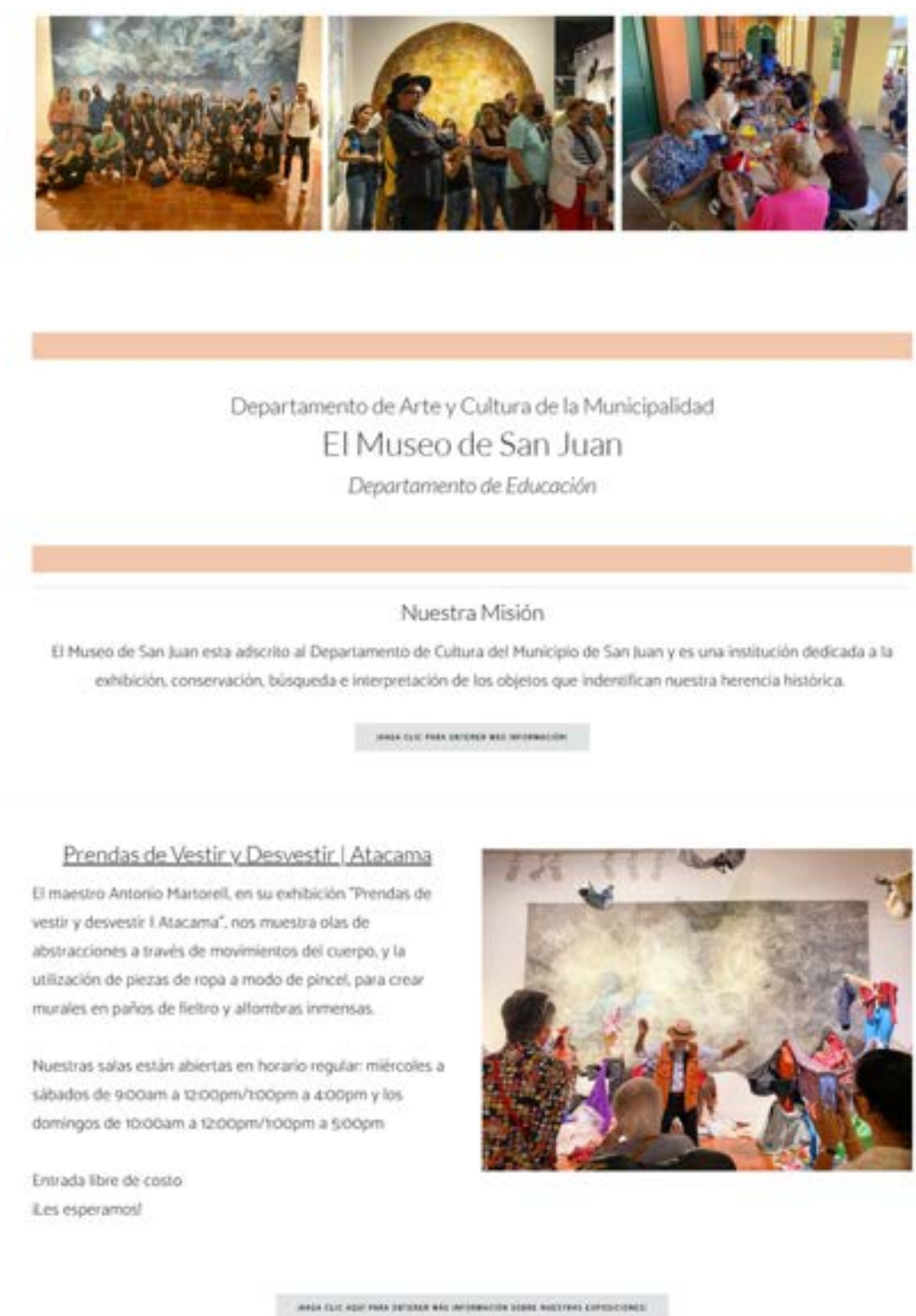


Figure 33. Landing Page of the Website

# Historia del Museo de San Juan



El Museo de San Juan fue una vez el antiguo Mercado de los Agricultores de la ciudad. Un lugar que era conocido por ser un punto de encuentro para los intelectuales de la ciudad en aquel tiempo. Sin embargo, el 8 de julio de 1822, el mercado de agricultores se trasladó a una nueva ubicación, dividiendo el mercado entre la Plaza de Santiago y la Plaza de Santa Domingo.

En 1853, Don Fernando De Norzagaray, el gobernador de la época, ordenó la construcción de una nueva Plaza de Mercado. A pesar de las complicaciones en el proceso de construcción, la Plaza del Mercado de San Juan fue abierta al público el 18 de enero de 1857. La estructura actual del museo se asemeja al estilo arquitectónico que era común en esta época. El edificio tiene un plano rectangular rodeado por cubiertas abiertas hacia la calle San Sebastián y el Boulevard del valle, permitiendo un fácil tránsito para los comerciantes. En el interior del edificio se encuentra un patio que mide 1,328 metros cuadrados y que en su momento estuvo rodeado por galerías que daban acceso a cuatro corredores.



Calle del Mercado, San Juan P.R. 1899



Durante el siglo XIX, el edificio tuvo una variedad de usos, como ser un depósito militar durante la Segunda Guerra Mundial para el Gobierno Federal. Después de la guerra, se convirtió en un establecimiento de PRACO y se transformó en una tienda local de frutas y verduras. Después de esto, el edificio se convirtió en la ubicación del Programa de Educación Comunitaria, mejor conocido como la DIVEDCO.

Figure 34. History Page of the Website



## ¡Conoce a nuestro equipo!

Según la misión y visión, el Museo de San Juan cumple con las siguientes funciones:

1. Educar a la comunidad sobre el valor científico, histórico, cultural y artístico de aquellas obras u objetos que constituyen una muestra del patrimonio histórico y natural de los ciudadanos y la ciudad de San Juan
2. Fomentar en la comunidad en general el cultivo y disfrute de los valores culturales y estéticos legados por la historia a nuestro pueblo
3. Promover la adquisición, conservación, investigación y estudio de obras u objetos de valor histórico, cultural y artístico, de acuerdo con los estándares conocidos para tales fines.

### Nuestro Personal



Luis Moisés Pérez Torres  
Director



Imarie Reyes  
Registradora



María-Laura Benítez  
Registradora Auxiliar



Adriana S. Muñoz  
Coordinadora Educativa



Julián Collazo  
Bibliotecario



Leslie Ann Pérez

Figure 35. Meet the Team Page of the Website

## Visitar



### Horas

Lunes y Martes: Cerrado  
Miércoles a Viernes: 9 AM-12 PM, 1-4 PM  
Sábados: 10 AM-12 PM, 1-4 PM  
Domingo: 10 AM-12 PM, 1-3 PM

### Dirección

Norzagaray 150 Viejo San Juan, San Juan, Puerto Rico, 00901  
+1 (87) 480-3553

La entrada al museo es gratuita para el público



### Aviso Importante:

Al buscar el museo, puede aparecer como el Museo de San Juan o el Museo de Arte e Historia de San Juan

### Tours Guiados

\* INDICATES REQUIRED FIELD

SELECCIONE LA PRÓXIMA FECHA \*

30T

NÚMERO DE INVITADOS \*

EMAIL \*

NOMBRE \*

First

Last

ENVIAR



Figure 36. Visitation Page of the Website

# Digital Archive User Manual

We created this user manual to be left as a guide for the Museo de San Juan staff to provide instructions that are required to effectively utilize the features of the Microsoft Access digital archive, such as opening the archive, modifying pieces, and saving changes.

## 1.0 How to Open the Digital Archive

This chapter provides an overview of how to open the digital archive, depending on the computer account in use. Opening the archive from a Registrar computer will allow you to make changes and save these changes to the OneDrive. Meanwhile, opening the archive from a Cultura computer will let you view the database, not make changes.

### 1.1 Opening the Digital Archive from the Registrar Computers



If you do not wish to make edits, either refer to Section 1.2, or be cautious of making accidental changes when navigating through the digital archive.

1. Start by logging into the computer:

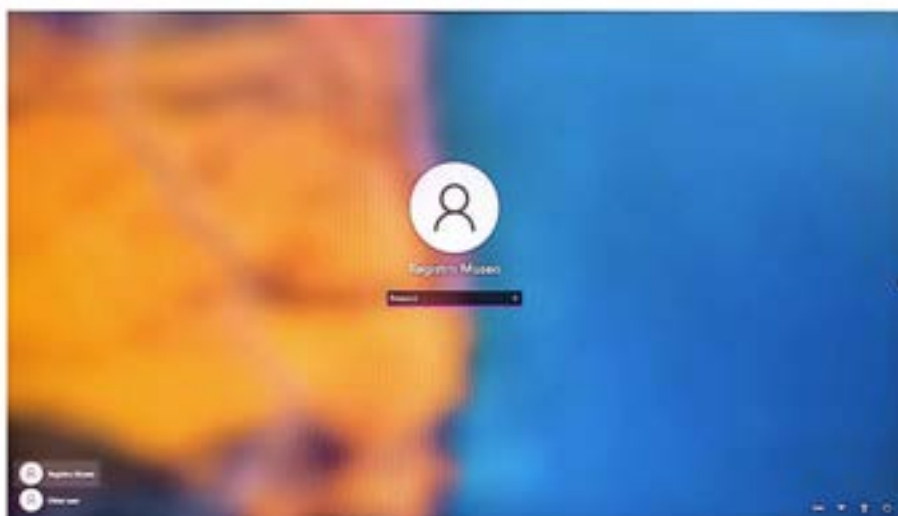


Figure 37. First Chapter of the Digital Archive User Manual



## 2.0

# How to use the Digital Archive

This chapter provides an overview of how to use all the features of the digital archive. This includes how to open tables and forms, navigate through pieces, add pieces, remove pieces, edit pieces, and search for pieces.

## 2.1 Opening Tables for Specific Piece Types

1. Once you have opened the digital archive following instructions from Chapter 1.0, your screen should see the following:

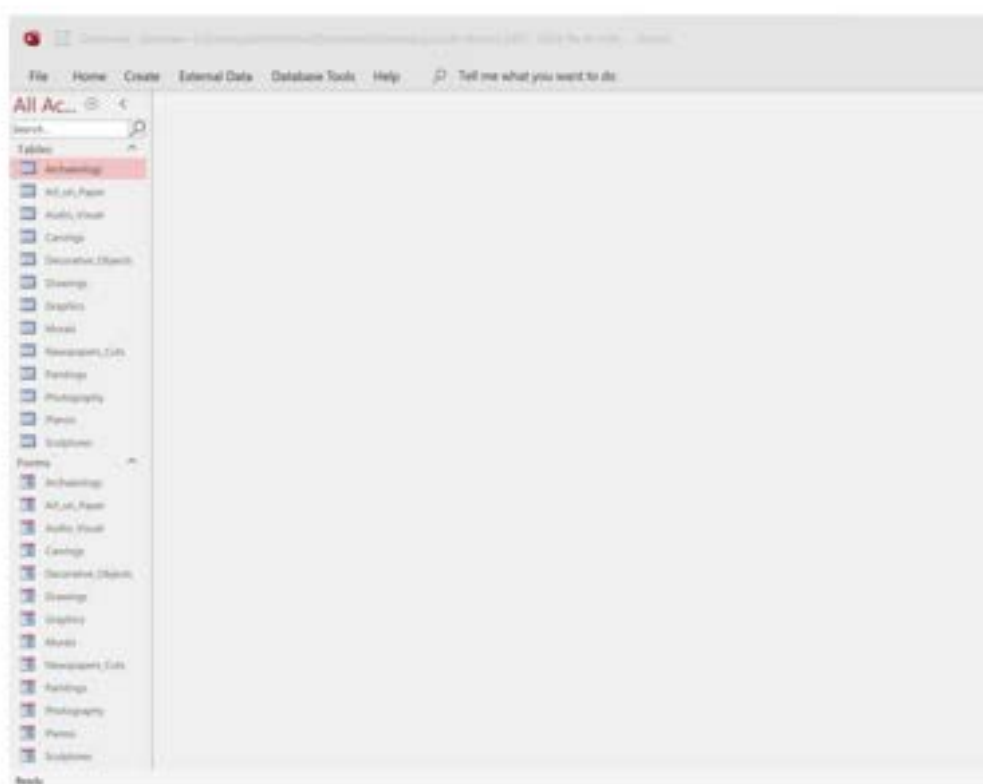


Figure 38. Second Chapter of the Digital Archive User Manual

## 3.0 How to Upload and Save Changes

This chapter provides an overview of how to save the work done on the digital archive to minimize information loss. It includes how to save changes to a piece, how to save the entire archive, and how to ensure the digital archive changes have been synced to the Municipio de San Juan OneDrive.

### 3.1 Making Sure Changes are Saved

**i** When editing a piece's content in Section 2.5 or adding a piece to the digital archive in Section 2.3, remember to save changes made to the piece.

1. Any time a change is made to a field or image of a piece, the following message will appear underneath all the metadata:

The screenshot shows a web form titled 'Art on Paper Archive'. At the top, there are tabs for 'Previous Piece', 'Add Piece', 'Edit Piece', and 'Delete Piece'. A search bar is also present. The main area is divided into two columns. The left column is for the image, with a large placeholder box and a small 'Add Piece Information' button at the bottom. The right column contains a metadata form with fields for 'Artist Name', 'Title', 'Year Created', 'Year Acquired', 'Location', 'Specific Location', 'Description', 'Keywords', 'Additional Notes', and 'Date of Piece'. Below the metadata fields, there are two buttons: 'Cancel Changes' (highlighted with a red circle) and 'Save Changes' (highlighted with a green circle). A red message box at the bottom of the form reads 'Changes Not Saved'.

2. The red "Changes Not Saved" message indicates that the changes have not been saved to the piece.

3. To save the changes, click on the "Save Changes" button to the right, and the red "Changes Not Saved" message will go away.

Figure 39. Third Chapter of the Digital Archive User Manual

The last chapter provides another Microsoft Access user manual for further reference and ideas for further developing the digital archive in the future.

# Website User Manual

We created this user manual to be left as a guide for the Museo de San Juan staff to provide instructions that are required to effectively utilize the features of the website. This includes the steps to create a website on the website-builder Weebly and how to maintain it.

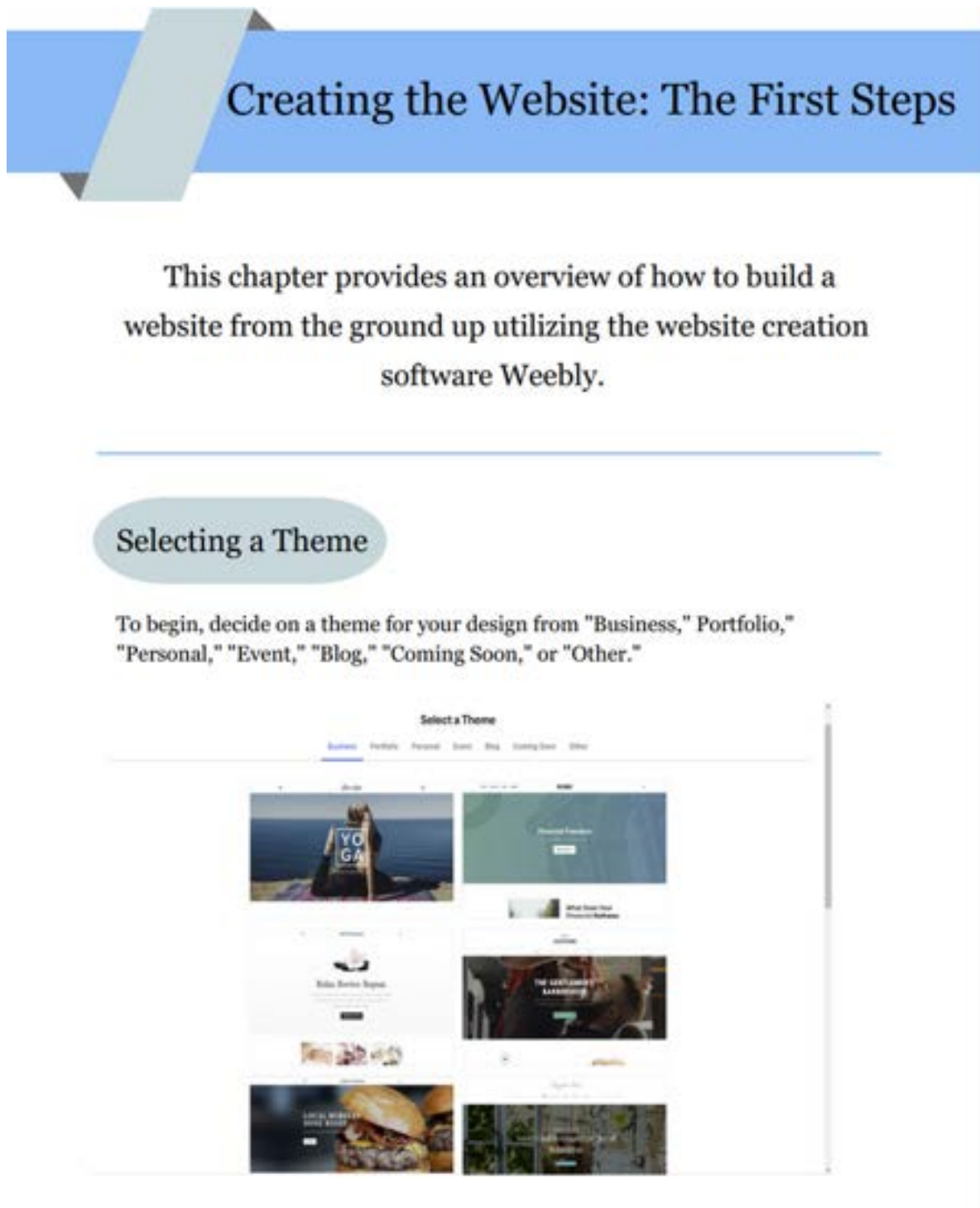


Figure 40. First Chapter of the Website User Manual



# Customizing and Styling

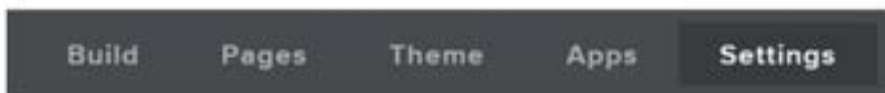
This chapter demonstrates different features and design options to customize your website

## How to Update a Logo

A logo is text or an image that appears on every page. To add a logo, hover over the title in the upper left corner to view the options.



If you do not see a site title, navigate to the "Settings" tab.



Next, enter a title for your website in the "Site Title" box and select the "Show title" checkbox underneath to display it. Save these changes and return to the home page.

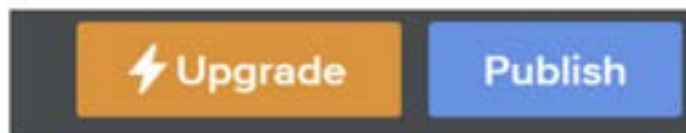
Figure 41. Second Chapter of the Website User Manual

# Ready to Launch

This chapter outlines the steps that can be taken after finishing customizing your website.

## Publishing the Website

After you're finished customizing your website, click on the "Publish" button in the top right corner of the screen.



After you click the button, you will get a pop-up message to confirm that the site is successfully published. This message will also contain the link to your website.

Website Published!

<https://museodesj-educacion.weebly.com>

Share:   

Figure 42. Third Chapter of the Digital Archive User Manual

The final chapter provides articles describing additional features that may be useful for the website.

## Physical Space Infographic

We created an infographic to provide suggestions of how to organize the physical archive of the Museo de San Juan. A well-organized physical archive will allow for better accessibility for researchers and an easier way to find documents between the physical and digital archives (Figure 43).

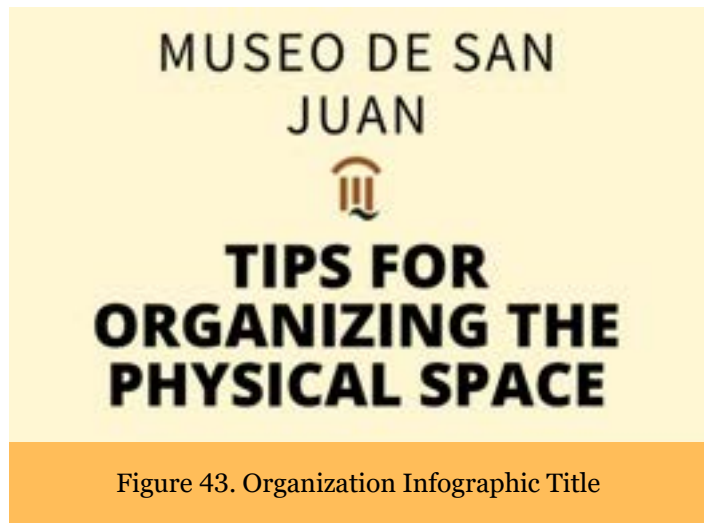
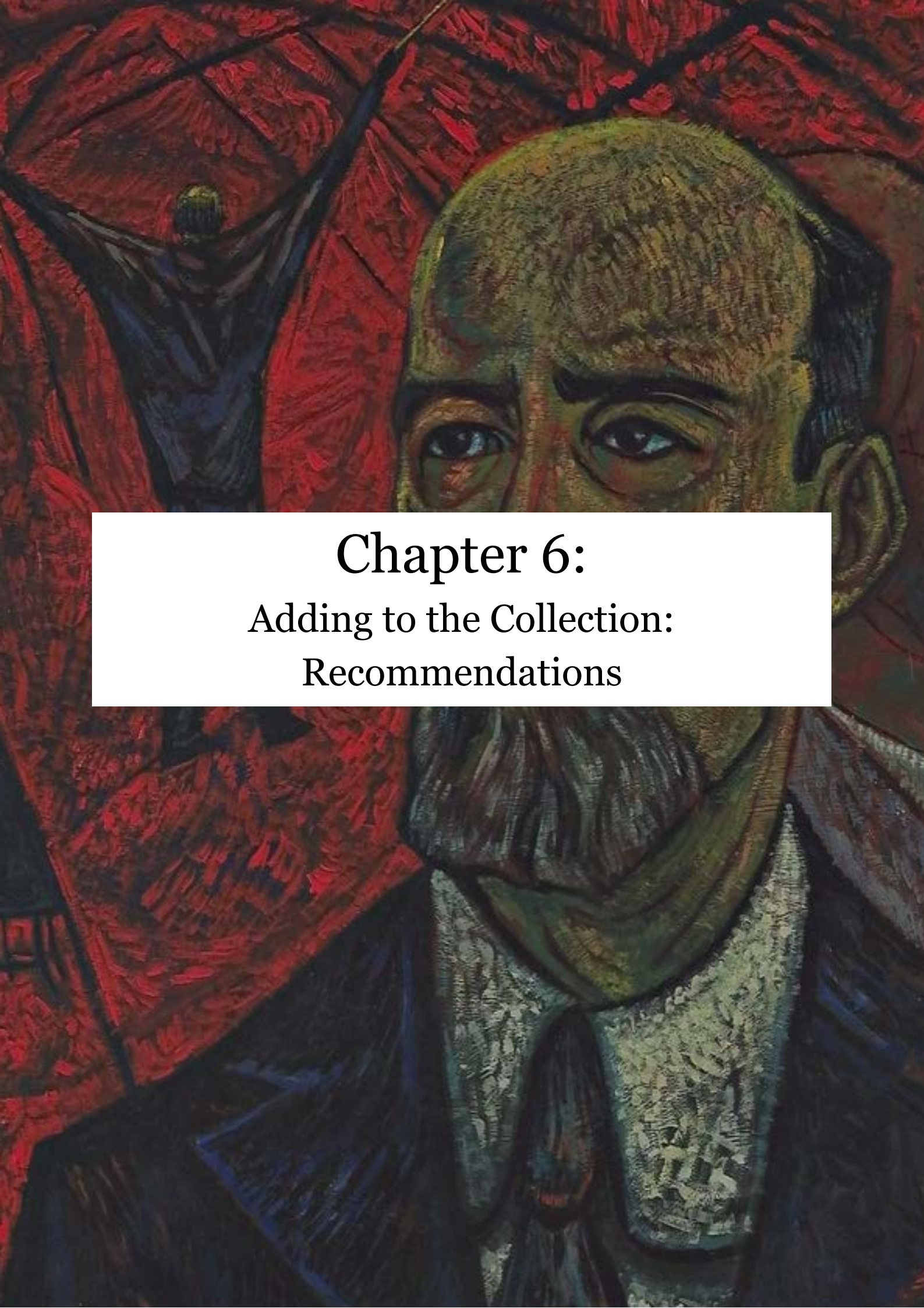


Figure 44. Current space for documents not on shelves.





## Chapter 6:

Adding to the Collection:  
Recommendations





Figure 45. Watercolor Workshop with children of the La Perla community (Museo de San Juan, 2019).

# Adding to the Collection

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As the Museo de San Juan's collection and visitation grows over time, we recommend the following to the Museo staff to continue to develop their digital archive and website. We also have suggestions of how to better organize the physical archive, making it easier for staff, scholars, and other institutions to access information about the Museo and its artifacts.

## Digital Archive Recommendations

1. Utilize the "Import Excel Spreadsheet" feature provided by Microsoft Access to minimize data entry time. You can import museum Excel spreadsheets or spreadsheets from an external institution and import them to the database via this feature. Ensure that the spreadsheets have field names for each metadata, so the import is smooth.
2. Consider learning Microsoft's Visual Basic for Applications (VBA) to add desired features to the digital archive system as the collection of the Museo de San Juan grows over time. VBA can be used to automate data entry, create custom reports on the collection, and integrate the Access database with other Office applications like Excel and Outlook for communication with other institutions. Since VBA requires some knowledge of programming, we recommend utilizing Microsoft's VBA manual and referring to online guides and videos for reference.

3. As the size of the collection grows over time, the Microsoft Access database will slow down, and become difficult to use. Thus, the Museo should investigate other paid software archive options available.

## **Website Recommendations**

1. Purchase a custom domain from an online domain register such as GoDaddy.com. Buying a domain from a third-party site allows for more freedom for the user and it will be less expensive. Having a custom domain would also increase the credibility of the website and allow the site to appear when searching for information about the Museo de San Juan online.

2. After receiving a custom domain name from GoDaddy you will need to purchase a payment plan to link it to the website. We recommend purchasing the Professional Payment plan through Weebly to receive more advanced features and design options suited for an institution. Having this plan will also take Weebly advertisements off the site and give useful analytics options and reports.

3. To continue to advance the contents of the website, consider adding more pages such as: 'Past Exhibitions', 'Visitor Feedback', and 'Donations'. Past exhibitions will allow visitors to view the past temporary exhibitions, visitor feedback will help the Museo learn how to improve, and donations can help the Museo with funding for purchasing resources.

4. Lastly, we recommend that the Museo hires a web designer to keep the galleries, posters for workshops, and calendar events regularly updated. They could also be tasked with collecting the form responses. This job should also require proficiency in both Spanish and English to be able to translate between the pages on the website, since there is no automatic translation feature in place.

## **Physical Space Recommendations**

1. The Museo de San Juan would benefit from organizing all their documentation by location. We recommend that they separate the pieces that are from the Museo and place those documents on the shelves. Most scholars and visitors will want to take out articles and books that relate to pieces in the museum and displaying them on the shelves will allow scholars to easily access these documents.

2. Organize the collection with a tried-and-true system such as the Library of Congress cataloguing system, or the Dewey Decimal System. These systems have been successfully used to organize many archives and libraries. Most scholars will be already familiar with these systems, so they will easily be able to navigate through the physical collection.



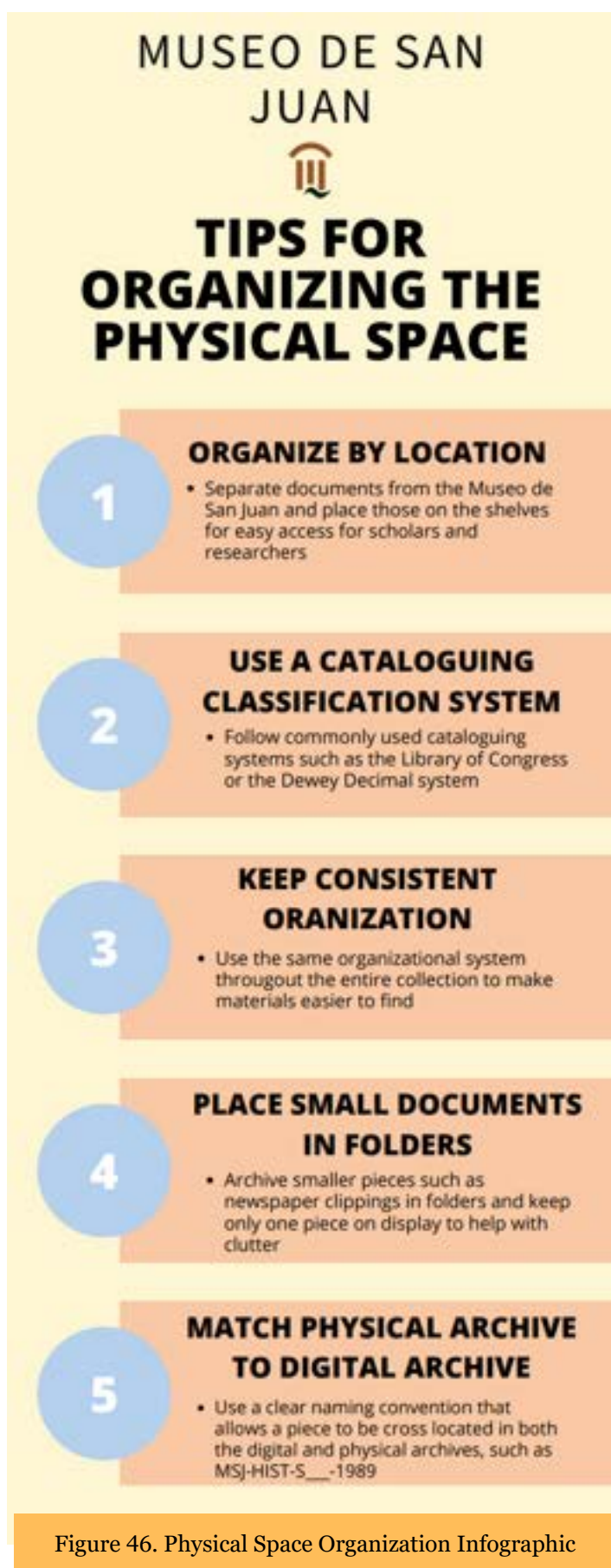


Figure 46. Physical Space Organization Infographic

3. The Museo would benefit from maintaining the same organizational system throughout all their documents. Currently, some pieces are organized alphabetically and others by category. We recommend choosing one system for the whole collection. This would eliminate confusion when trying to find specific pieces.

4. Place small documents, such as newspaper clippings, printed pictures, and photocopies in folders. This will keep them intact over time and ensure that they are not lost. If there are multiple copies of these documents, only display one copy to help with clutter. Place larger magazines and catalogues in bins for more compact storage. (Figure 47)

5. To use the physical archive effectively, we recommend that the digital archive is connected to the physical archive. This will help the user find a document in either digital or physical archive, common naming conventions will match the physical and digital archive together. For example, Ms. Gonzalez recommended a naming convention that included the institution, topic of the piece,

the first letter of the last name, and the year the piece was published. (Figure 48)



Figure 47. Bins used for storage at Cooperativa de Seguros Multiples.

#### MSJ-HIST-S\_\_-1989

- MSJ - the institution (Museo de San Juan)
  - HIST - topic of piece (History)
  - S - first letter of the last name (Sepulveda)
- followed by a few code numbers
- 1989 - the year the piece was published

Figure 48. Document Naming Convention

The Museo de San Juan is now more resilient to natural disasters, preventing data loss. The digital archive accomplished this by allowing the museum to remotely access information about their collections and always have a backup for their physical collections. Additionally, the Museo can increase its visitation and reach a wider audience through its website. The website addresses commonly asked questions about basic information and highlights the educational program. Both systems can work together to elevate the Museo de San Juan and create a more engaging environment for the staff members.

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# Appendix A: Interview Questions

## Interview Questions

(Intended for the Museo de San Juan, museum visitors, and other local museums)

### General digital archive questions:

- What current digital archival system/software are you using?
- What is your relationship with the digital archive system?
- How is the archive primarily used?
- Do you know how the archive was originally constructed and is there anyone who maintains it?
- Who uses/has access to the current system? Is it open to the public, or is it for staff use only?
- If it is open to the public, how do you shield them from confidential information?
- Are there user guides available for your staff to learn how to use the digital archive system?

### Pricing:

- What is the pricing of the system? Does the museum need to pay a yearly or monthly fee?

### Respondents' opinion on the archive:

- If you use the archive, what features do you enjoy?
- Are there any features that you think are unnecessary?

### Finishing questions:

- What advice would you give to a small museum?
- Is there someone else that you would recommend that we interview at another museum?
- Anything else you want us to know?