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**Monnig Meteorite Gallery**

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**Tour Assistance Application  
Use Cases**

**Version <1.0>**

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

## Revision History

Date	Version	Description	Author
<10/08/21>	<1.0>	<Defined Use Case 1, 2, 3 >	<Kendric D'Spain>
<10/17/21>	<1.1>	<Set Use Case Priorities and added Language Preference Case >	<Kendric D'Spain>

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

## Table of Contents

Use Case 1: Identifies User Language Preference	6
Use Case 2: Measures Visual Preferences Through Survey	7
Use Case 3: Text-to-speech Reads Contents of Each Display	9
Use Case 4: Text-To-Speech based on User's Location In The Museum	10
Use Case 5: Scan QR/Barcode to access a page on a specific display	11
Use Case 6: Display Information Regarding Sections of the Gallery	12
Use Case 7: Illustrate areas of importance in the gallery	13
Use Case 8: Display Information Regarding a Single Meteorite	14
Use Case 9: Organize Meteorite Catalog Based on Filters	15
Use Case 10: Displays Meteorites in Catalog	16

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

# Use Cases

## **Use Case ID and Name**

*Give each use case a unique integer sequence number identifier. State a concise name for the use case that indicates the value the use case would provide to some user. Begin with an action verb, followed by an object.*

## **Author and Date Created**

*Enter the name of the person who initially wrote this use case and the date it was written.*

## **Primary and Secondary Actors**

*An actor is a person or other entity external to the software system being specified who interacts with the system and performs use cases to accomplish tasks. Different actors often correspond to different user classes, or roles, identified from the customer community that will use the product. Name the primary actor that will be initiating this use case and any other secondary actors who will participate in completing execution of the use case.*

## **Trigger**

*Identify the business event, system event, or user action that initiates the use case. This trigger alerts the system that it should begin testing the preconditions for the use case so it can judge whether to proceed with execution.*

## **Description**

*Provide a brief description of the reason for and outcome of this use case, or a high-level description of the sequence of actions and the outcome of executing the use case.*

## **Preconditions**

*List any activities that must take place, or any conditions that must be true, before the use case can be started. The system must be able to test each precondition. Number each precondition. Example: PRE-1: User's identity has been authenticated.*

## **Postconditions**

*Describe the state of the system at the successful conclusion of the use case execution. Label each postcondition in the form POST-X, where X is a sequence number. Example: POST-1: Price of item in the database has been updated with the new value.*

## **Main Success Scenario/Normal Flow**

*Provide a description of the user actions and corresponding system responses that will take place during execution of the use case under normal, expected conditions. This dialog sequence will ultimately lead to accomplishing the goal stated in the use case name and description. Show a numbered list of actions performed by the actor, alternating with responses provided by the system. The normal flow is numbered "X.0", where "X" is the Use Case ID.*

## **Extensions:**

- **Alternative Flows**

*Document other successful usage scenarios that can take place within this use case. State the alternative flow, and describe any differences in the sequence of steps that take place. Number each alternative flow in the form "X.Y", where "X" is the Use Case ID and Y is a sequence number for the alternative flow. For example, "5.3" would indicate the third alternative flow for use case number 5. Indicate where each alternative flow would branch off from the normal flow, and if pertinent, where it would rejoin the normal flow.*

- **Exceptions**

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

*Describe any anticipated error conditions that could occur during execution of the use case and how the system is to respond to those conditions. Number each alternative flow in the form “X.YEZ”, where “X” is the Use Case ID, Y indicates the normal (0) or alternative (>0) flow during which this exception could take place, “E” indicates an exception, and “Z” is a sequence number for the exceptions. For example “5.0.E2” would indicate the second exception for the normal flow for use case number 5. Indicate where in the normal (or an alternative) flow each exception could occur.*

#### **Priority**

*Indicate the relative priority of implementing the functionality required to allow this use case to be executed. Use the same priority scheme as that used for the functional requirements.*

#### **Frequency of Use**

*Estimate the number of times this use case will be performed per some appropriate unit of time. This gives an early indicator of throughput, concurrent usage loads, and transaction capacity.*

#### **Business Rules**

*List any business rules that influence this use case. Don't include the business rule text here, just its identifier so the reader can find it in another repository when needed.*

#### **Other Information**

*Identify any additional requirements, such as quality attributes, for the use case that may need to be addressed during design or implementation. Also list any associated functional requirements that aren't a direct part of the use case flows but which a developer needs to know about. Describe what should happen if the use case execution fails for some unanticipated or systemic reason (e.g., loss of network connectivity, timeout). If the use case results in a durable state change in a database or the outside world, state whether the change is rolled back, completed correctly, partially completed with a known state, or left in an undetermined state as a result of the exception.*

#### **Assumptions**

*List any assumptions that were made regarding this use case or how it might execute.*

## **Use Case List**

Primary Actor	Use Cases
Monnig Gallery Visitor	UC1: Identifies User Language Preference UC6: Display Information Regarding Sections of the Gallery UC7: Illustrate Areas of Importance In the Gallery UC8: Display Information Regarding a Single Meteorite UC9: Organize Meteorite Catalog Based on Specific Filters UC10: Reset User Preferences in Settings UC11: Display Meteorites in Catalog UC12: Customize Visual Preferences During Application Usage
Visually Impaired User	UC2: Measures Visual Preferences Through Survey UC3: Text-To-Speech Reads Contents of Each Display UC4: Text-To-Speech Based on User's Location In The Museum UC5: Scans a QR/Barcode to Pull Up a Page of Display

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

## Use Case 1: Identifies User Language Preference

UC ID and Name:	UC-1: Identifies User Language Preference		
Created By:	Kendric D'Spain	Date Created:	October 16, 2021
Primary Actor:	Monnig Gallery Visitor	Secondary Actors:	Museum volunteers
Trigger:	A user starts an app for the first time the user tours the Monnig Meteorite Gallery.		
Description:	The user starts up the TCU MMG mobile app for the first time and prompts the user for their preferred language. The user is able to select their preferred language out of the four currently supported, English, Spanish, French and Vietnamese.		
Postconditions:	POST-1. The user's language preference is temporarily stored and the remaining session of the gallery should illustrate the displays in the preferred language.		
Main Success Scenario:	<ol style="list-style-type: none"> <li>1. The system requests the user to choose their preferred language.</li> <li>2. The user inputs their preferred language.</li> <li>3. The system applies the preference to the current session.</li> </ol>		
Extensions:	<b>1a. The User does not provide a language preference and tries to proceed</b> 1a1. The system defaults language to English.		
Priority:	High		
Frequency of Use:	Everytime the MMG application is opened, and the user is ready to tour the Gallery.		
Other Information:	1. The user is able to change their preferred language anytime throughout the gallery as well.		
Assumptions:	Assume that the user must complete the language Preference survey prior to starting his/her tour at TCU's Monnig Meteorite Gallery.		

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

## Use Case 2: Measures Visual Preferences Through Survey

UC ID and Name:	UC-2: Measures Visual Preferences Through Survey		
Created By:	Kendric D'Spain and Aparajita Biswas	Date Created:	October 8, 2021
Primary Actor:	Visually Impaired User	Secondary Actors:	Museum volunteers
Trigger:	A user starts an app for the first time to tour the Monnig Meteorite Gallery.		
Description:	<p>A user starts up the TCU MMG mobile app for the first time and is prompted by a survey. The survey identifies the user's preferences based on a multitude of different questions presented.</p> <ol style="list-style-type: none"> <li>1. Virtual Assistance Preference</li> <li>2. Font Size Preference</li> <li>3. Font Style Preference</li> <li>4. Color blind prompt/test</li> </ol>		
Postconditions:	POST-1. The user's Visual Preferences are temporarily stored and the remaining session should reflect the user's visual preferences to the current instance of the application running.		
Main Success Scenario:	<ol style="list-style-type: none"> <li>1. The system requests the user for enabling virtual assistance.</li> <li>2. The user responds to the system declining the feature by User Interface.</li> <li>3. The system requests the user to select his/her preferred font size.</li> <li>4. The user responds to the system choosing his/her preferred font size.</li> <li>5. The system requests the user to select his/her preferred font style</li> <li>6. The user responds to the system choosing his/her preferred font style.</li> <li>7. The system prompts the user for the color blind test.</li> <li>8. The user responds by inputting values for the test.</li> <li>9. The system then applies the changes from all preferences and the colorblind examination to the current session.</li> </ol>		
Extensions:	<p><b>1a. The User does not provide a response for enabling virtual assistance.</b>            1a. The system proceeds after 30 seconds of auto enabling the feature.</p> <p><b>2a. The user responds by accepting the virtual assistance feature via UI.</b>            2a. The system proceeds ignoring all remaining preferences fields and proceeds to 9 in Main Success Scenario.</p>		
Priority:	High		
Frequency of Use:	Every time the MMG application is opened, and the user is ready to tour the Gallery.		
Other Information:	2. The user is able to access the Visual Preference survey anytime throughout the Gallery.		
Assumptions:	Assume that the user needs are listed and that the user selects all the options they need assistance with. Volunteers will help in case the user can not navigate this stage of the application.		

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

### Use Case 3: Text-to-speech Reads Contents of Each Display

UC ID and Name:	UC-3: Text-to-speech reads contents of each display		
Created By:	Kendric D'Spain	Date Created:	October 8, 2021
Primary Actor:	Visually Impaired User	Secondary Actors:	Museum volunteers
Trigger:	User approaches a specific display.		
Description:	Upon completion of the preference survey, the user navigates to a display and would like to use the integrated Text-To-Speech feature throughout the exhibit.		
Main Success Scenario:	<ol style="list-style-type: none"> <li>The system confirms the user is at a specific display.</li> <li>The system vocally presents the specified material to the user.</li> <li>The system indicates to the user the display is over and to visit the next display.</li> <li>The system polls the user's location for the next display.</li> </ol>		
Extensions:	<p><b>3a. User Wants to Revisit Same Display</b>            3a1. The user indicates to the system verbally to continue at the same display.</p> <p><b>3b. User Wants to Exit the Gallery</b>            3b1. The user indicates to the system verbally to exit at the exhibit.</p>		
Priority:	High		
Frequency of Use:	Approximately 10 times per individual touring the Gallery.		
Other Information:	<ol style="list-style-type: none"> <li>The user is able to take a break from the Gallery by simply not interacting with the voice assistant at the end of a given display.</li> </ol>		
Assumptions:	Assume that the user preference text-to-speak functionality is enabled.		

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

### Use Case 4: Text-To-Speech based on User's Location In The Museum

UC ID and Name:	UC-4: Text-To-Speech based on User's Location In The Museum		
Created By:	Amanuel Tadesse	Date Created:	October 8, 2021
Primary Actor:	Visually Impaired User	Secondary Actors:	Museum volunteers
Trigger:	User approaches a specific display.		
Description:	Upon completion of the preference survey, the user approaches a display and system will know that the user is close to a specific display via bluetooth beacons		
Main Success Scenario:	<ol style="list-style-type: none"> <li>1. The system confirms the user is at a specific display.</li> <li>2. The system plays Text-To-Speech of Meteorites in a humanly sequence.</li> <li>3. The user is able to interrupt/pause the Text-To-Speech audio if needed</li> </ol>		
Extensions:	<p><b>4a. User Wants to Replay the Text-To-Speech Audio</b>          4a1. The user passes this command via a button or a voice command.</p> <p><b>4b. User Wants to Choose the Meteorite they want to learn more about</b>          4a1. Visually impaired user makes a choice via voice command to explore one of the meteorites available on the shelf they are close to</p>		
Priority:	Medium		
Frequency of Use:	At least as many as the number of displays in the museum		
Other Information:			
Assumptions:	The system will be getting a good approximate location of the user using the Bluetooth beacons		

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

### Use Case 5: Scan QR/Barcode to access a page on a specific display

UC ID and Name:	UC-5: User should scan a QR/Barcode in App to access a page to see information regarding display.		
Created By:	Asa Tuten	Date Created:	October 11, 2021
Primary Actor:	Visually Impaired User	Secondary Actors:	Gallery Visitors
Trigger:	The user walks up to the display and uses a camera within the App to scan a QR/Barcode.		
Description:	When a user scans the QR/barcode, the app will pull up a page regarding the display that was scanned and follow along the path the gallery takes.		
Main Success Scenario:	<ol style="list-style-type: none"> <li>1. The user presses a button to pull up the camera in the app</li> <li>2. The app pulls up the QR/Barcode scanner</li> <li>3. The user holds up the device's camera to the QR/barcode</li> <li>4. The app validates the QR/barcode</li> <li>5. The app opens up the page associated with that QR/barcode</li> </ol>		
Extensions:	1a. The user's device does not have a camera. 1a1. The user manually enters the display number on the camera screen.		
Priority:	Medium		
Frequency of Use:	Number of visitors within the gallery		
Other Information:			
Assumptions:	The user has a camera and can operate their phone to access their camera on the app.		

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

## Use Case 6: Display Information Regarding Sections of the Gallery

UC ID and Name:	UC 6: Display information regarding sections of the gallery
Created By:	Asa Tuten
Primary Actor:	Monnig Visitor
Trigger:	Selection of the section of the gallery on the app or tour assistant reaches that part of the tour in the app.
Description:	The app will populate the UI with the text of the specific section that is in the gallery on the wall. It will also have meteorites listed in the UI that are specific to the topic the section is covering.
Main Success Scenario:	<ol style="list-style-type: none"> <li>1. The user selects the start button for the tour of the gallery.</li> <li>2. The system will call the backend to gather section data.</li> <li>3. The backend returns information regarding the section selected.</li> <li>4. The system populates the UI with information regarding the section selected.</li> <li>5. The system displays the information of the section of the gallery.</li> <li>6. The user will then choose to continue the tour.</li> </ol>
Extensions:	<ol style="list-style-type: none"> <li>1a. The user selects a specific section they want to be displayed on the app.</li> <li>6a. The user decides to end the tour.</li> <li>6b. The user selects a specific section they want to be displayed on the app.</li> </ol>
Priority:	High
Frequency of Use:	Every tour of the gallery
Other Information:	The database will have this information populated in JSON format and will be called using REST API calls for the UI to then format the JSON text into usable data for the UI to display.
Assumptions:	The database has all text of the gallery and the flow of the app has been created.

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

### Use Case 7: Illustrate areas of importance in the gallery

UC ID and Name:	UC7: Illustrate areas of importance in the gallery	
Created By:	Asa Tuten	Date Created: 5/4/2022
Primary Actor:	Monnig Visitor	Secondary Actors:
Trigger:	Reaching the tour assistance screen after initial user flow. Can also occur was a user enters a different region of the gallery.	
Description:	The app will populate the UI with an image of the gallery with a highlighted area based on where the user is currently in the gallery. It will also change depending on where the user stands based on bluetooth beacon signals.	
Main Success Scenario:	<ol style="list-style-type: none"> <li>1. User enters the gallery and goes through the initial survey and lands on the Tour Assistance screen.</li> <li>2. Tour assistance screen updates relevant information about the area the visitor is currently in based on bluetooth beacons.</li> <li>3. As the visitor moves around the gallery, the map will update based on the user's new location and position in the gallery.</li> </ol>	
Extensions:	2a. The user accesses the app outside the gallery and the image will not update.	
Priority:	Medium	
Frequency of Use:	Everytime the app is used.	
Other Information:	Uses the iBeacon technology.	
Assumptions:	Assumes user is using one of the provided tablets in the gallery.	

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

### Use Case 8: Display Information Regarding a Single Meteorite

UC ID and Name:	UC-8: Display Information Regarding a Single Meteorite
Created By:	Kendric D'Spain
Primary Actor:	Monnig Gallery Visitor
Trigger:	The user selects a meteorite he/she wants to view in detail.
Description:	A user visiting the Gallery wants to be able to view a specific meteorite.
Main Success Scenario:	<ol style="list-style-type: none"> <li>1. The user selects a meteorite to view.</li> <li>2. The system will call the backend to collect the meteorites data.</li> <li>3. The system reflects the data to the user displaying the meteorites stored contents.</li> </ol>
Extensions:	2a. The system cannot retrieve any data on the selected meteorite. 3a. The system cannot display the data on the selected meteorite.
Priority:	High
Frequency of Use:	Every time the gallery is toured.
Other Information:	
Assumptions:	The meteorites are inputted into the database correctly in the appropriate format.

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

### Use Case 9: Organize Meteorite Catalog Based on Filters

UC ID and Name:	UC9: Organize Meteorite Catalog Based on Filters		
Created By:	Asa Tuten	Date Created:	5/4/2022
Primary Actor:	Monnig Visitor	Secondary Actors:	
Trigger:	User selects the Meteorite Catalog screen tab on the app once through the survey.		
Description:	The app is equipped with being able to query meteorites for visitors to look at, whether the meteorite is on display in the gallery or not. The user can also filter out meteorites based a variety of categories.		
Main Success Scenario:	<ol style="list-style-type: none"> <li>1. User accesses the Catalog screen by hitting the catalog screen button.</li> <li>2. Meteorites pop up based on users location in the gallery.</li> <li>3. User will click the search bar and type in letters based on what they want to query.</li> <li>4. Meteorites will update based on user's query</li> </ol>		
Extensions:	4a. Query can be based on selected filter, like country, size, weight, etc.		
Priority:	Low		
Frequency of Use:	Any time a user wants to view more meteorites.		
Other Information:			
Assumptions:	Assumes user has internet access.		

Monnig Meteorite Gallery Tour Assistance Application	Version: <1.0>
Use Cases	Date: <dd/mmm/yy>
<document identifier>	

## Use Case 10: Displays Meteorites in Catalog

UC ID and Name:	UC-11: Displays Meteorites in Catalog		
Created By:	Aparajita Biswas	Date Created:	November 03, 2021
Primary Actor:	Monnig Gallery Visitor	Secondary Actors:	Museum visitors
Trigger:	A user selects to view the meteorite from the catalog in the Monnig Meteorite Gallery.		
Description:	After the user selects the meteorite to view, it is displayed on the screen		
Postconditions:	POST-1. The meteorite information is stored in the database. POST-2. The system displays the catalog		
Main Success Scenario:	<ol style="list-style-type: none"> <li>1. The system waits for the input from user</li> <li>2. The user selects the meteorite from the catalog to view</li> <li>3. The system displays the selected meteorite with the stored information</li> </ol>		
Extensions:	<b>1a. The User does not select a meteorite from the catalog</b> 1a1. The system requests user input before proceeding.		
Priority:	High		
Frequency of Use:	Everytime the MMG application is opened, and the user is ready to tour the Gallery.		
Other Information:	3. The user is able to view the meteorite anytime throughout the gallery as well.		
Assumptions:	Assume that the user must select the meteorite before being able to view it.		