

Museum App

Overview.....	4
1 Intro.....	4
1.1 Objective.....	4
1.2 Gamification.....	4
1.2.1 Virtual Tour.....	4
1.2.2 Augmented Tour.....	4
1.2.3 Reward.....	4
2 Research (board).....	5
2.1 Target Audience.....	5
2.2 Competitor & Inspiration.....	5
2.3 Painting & History Art.....	5
3 Main Feature.....	5
4 Mood & Feel.....	6
4.1 User Interface.....	6
4.2 Virtual Exploration.....	6
UI.....	7
1 General info.....	7
1.1 Objective.....	7
1.2 Limitation.....	7
1.3 Accessibility.....	7
2 Wireframe (Flowchart).....	8
2.1 Screens.....	8
2.2 Button & Fields.....	8
2.3 List of every Screen.....	8
2.3.1 Log In Screen.....	9
2.3.2 Gallery Screen.....	10
2.3.3 Painting Screen.....	11
2.3.4 Map Screen.....	12
2.3.5 Account Screen.....	14
2.3.8 Customization.....	15
3 HUD.....	16
3.1 Dialogue.....	16
3.2 Character.....	17
Mechanics (Keyword).....	18
1 Game Progression.....	18
1.1 Game Loop.....	18
1.2 Win Condition.....	18
1.3 Rewards.....	18

2 Movement (Ref).....	18
2.1 Checkpoint.....	18
2.2 Camera.....	18
2.2.1 Camera Rotation State.....	18
2.2.2 Camera Zoom State.....	19
3 Interactables.....	19
3.1 Checkpoint.....	19
3.2 Painting.....	19
3.3 Collect Piece.....	19
3.4 Place Piece.....	19
4 Inventory.....	20
4.1 Piece Inventory.....	20
4.2 Gallery.....	20
4.2.1 Locked.....	20
4.2.2 Unlocked.....	20
4.2.3 Scanned.....	20
4.2 Account.....	20
4.2.1 Avatar.....	20
4.2.2 User's Data.....	21
5 Painting scan.....	21
Sound.....	22
1. Outline.....	22
1.1 Overview.....	22
1.2 Music.....	22
1.3 Sound.....	22
1.4 Dialogue.....	22
2. Implementation.....	22
3. Content List.....	22
3.1 Sound Design.....	22
3.2 Music.....	22
3.3 Dialogue.....	22

Overview

1 Intro

The Pinacoteca of Brera project focuses on giving a mix of a functional app and a game experience in which the Player is incentivized to explore both a virtual and the real Pinacoteca to collect and learn about the Paintings.

1.1 Objective

The Objective is to create an immersive virtual tour of the Pinacoteca in which the Player can interact with some of the Paintings from the real One and can read the story behind the Painting, the Painter or other curiosity about it, then the Player is incentivise to explore the real one for more information.

1.2 Gamification

The main elements of the Gamification are the **Virtual Tour**, the Augmented Tour at the Pinacoteca di Brera and rewards in different forms, this helps keep the Player engaged in both Tour.

1.2.1 Virtual Tour

The Player is able to explore a **virtual recreation** of the Pinacoteca (for now only the initial rooms), in which some of the paintings are on the walls and can be interacted with to see the details and play a game in which the Player is tasked to search and take from others paintings some items that they must position in the right spot in the correct painting.

This will unlock the painting in the Gallery, in which the Player is able to read and learn about it, this also gives a reward to personalize their account.

1.2.2 Augmented Tour

When going to the real Pinacoteca the Player can use this game to also interact with the real paintings. If they have already unlocked it during the Virtual Tour they can scan the real one and learn even more information and an extra reward for their account.

1.2.3 Reward

As mentioned above the the Player is rewarded by doing two actions:

- Complete the minigame in the Virtual Tour.

- Scan the real painting in the Gallery.

The first one will grant an accessory to decorate the account icon, the second will grant a background banner for the account.

2 Research ([board](#))

At the start of the project the team is divided into different groups, each one is tasked with a different subject to research:

- Target Audience.
- Competitor & Inspiration.
- Paintings & History Art.

2.1 Target Audience

Research about which group of young people goes to the Pinacoteca in their free time and in which archetype they fall into, this will show us what the habit and what kind of experience both of the game and the app can help the Player understand and have a positive experience using the app.

2.2 Competitor & Inspiration

Research about similar museum apps with Gallery, Painting, Map and Home page for UI study, some references on structure, functionality and aesthetics.

Research about a similar Virtual experience with an explorable museum and interactable Paintings and augmented experiences.

2.3 Painting & History Art

Research about some of the paintings in the Pinacoteca and the history behind it, with a focus on why they are significant in the History Art.

3 Main Feature

There are 3 main feature:

- **Virtual tour & minigame:** the Player is able to explore and interact with the Paintings and is tasked with fixing the missing details by searching and picking them up in other Paintings.
- **Augmented tour:** the Player is also able to augment the visit of the Art Gallery during their visit on site.
- **Extensive description:** every Painting is accompanied by a page with info about its story, painter and importance in history.

4 Mood & Feel

The Player should relax and explore the museum calmly, trying to learn as much as they can while searching for each missing object and should be engaged by an easy to understand and execute puzzle, giving more chance to enjoy the actual Paintings.

4.1 User Interface

The UI should also feel easy to navigate and keep the Brand Identity of Brera, so clean and tidy, with not much details and eye candy.

4.2 Virtual Exploration

The Virtual Exploration should also feel as immersive, like the Player is actually there.

UI

1 General info

1.1 Objective

- Keep the brand Identity of Brera
- Make it feel like a informative app
- Have a Interactive map and a Gallery to help keep track of progress
- Easy to learn and remember, as few screens as possible
- Hierarchy -> Game > Gallery and Interactive Map > Personalization

1.2 Limitation

- Brera Identity with some modern look
- Must contain info about Brera

1.3 Accessibility

- Left-Handed friendly
- Colorblind friendly

2 Wireframe ([Flowchart](#))

This flowchart represents the logic behind the App different screens, which buttons are present in every screen and other information.

2.1 Screens

Each Screen is unique and can be accessed by 1 or more ways.

The are Main Screens and Sub screens, when going back from Sub screens the Player ends up on the last Screen they visited.

While in Main Screens the Player can't go back, can only access other Main Screens or Sub Screens in that Main Screen.

2.2 Button & Fields

The Button can be Press & Lifted and each one connects to another Screen.

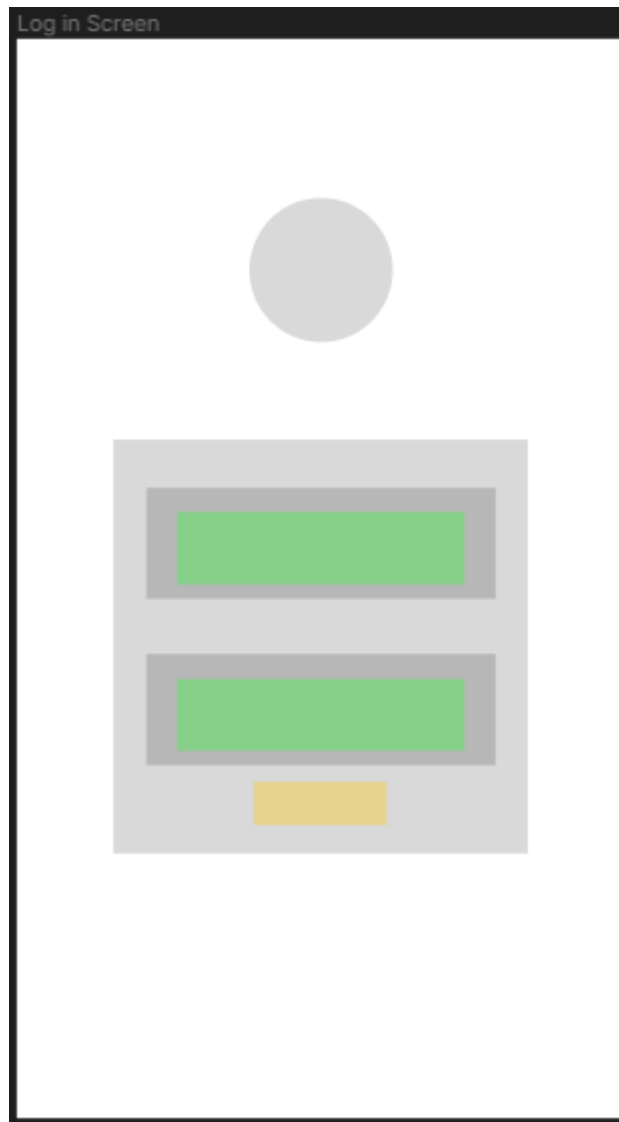
2.3 List of every Screen

Contain a list of every screen and what they contain.

2.3.1 Log In Screen

First screen of the game is used to connect to the account.

To enter on an account the Player must insert a Name and a Password.



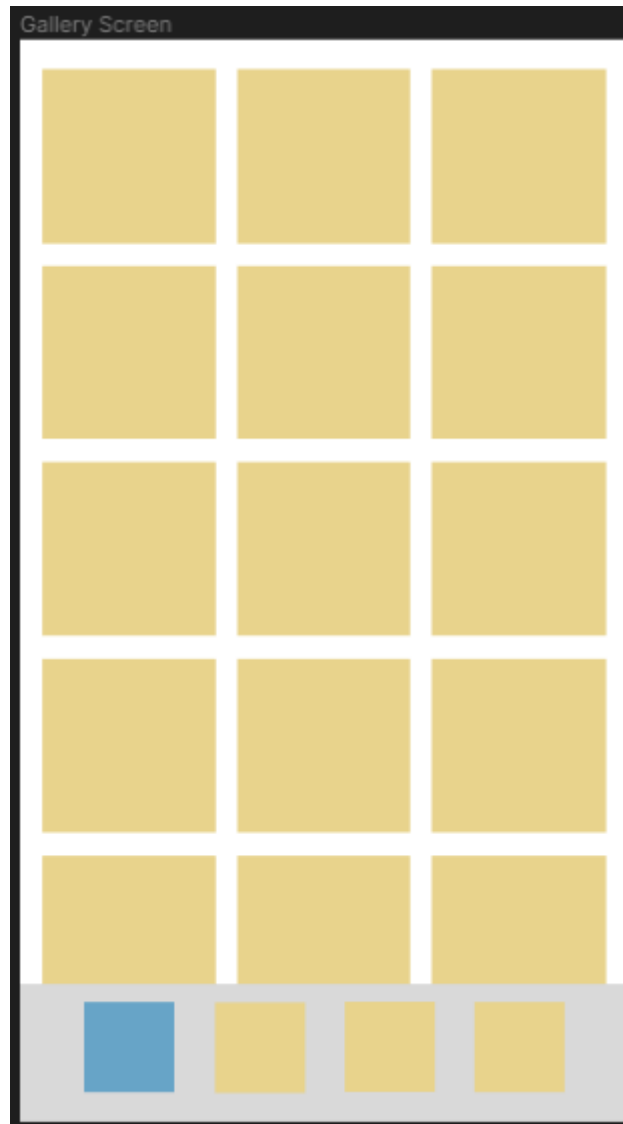
2.3.2 Gallery Screen

Contain a square grid $X*Y$ size, in each Tile of the Grid an square image represents a Painting in the game.

The Player can scroll by Swiping the finger up and down.

Swiping up ...

Swiping down ...



If the Painting is locked, it shows a black image with a question mark on it and the Player cannot interact with the image.

If the Painting is unlocked, it shows a black and white version of the Painting and the Player can Press & Lift on an image to open the corresponding Painting Screen.

If the Painting is scanned, it shows a colored version of the Painting and the Player can Press & Lift on an image to open the corresponding Painting Screen.

2.3.3 Painting Screen

Contain general information of the painting in different text boxes and some buttons:

- Back Button: if Press & Lift go to the previous screen.
- Scan Button: if Press & Lift access the camera and can scan any image.



2.3.4 Map Screen

Contain an Interactable Map, with circle Button on each Painting on the screen.

The Player can move around the map by Swiping on the screen.

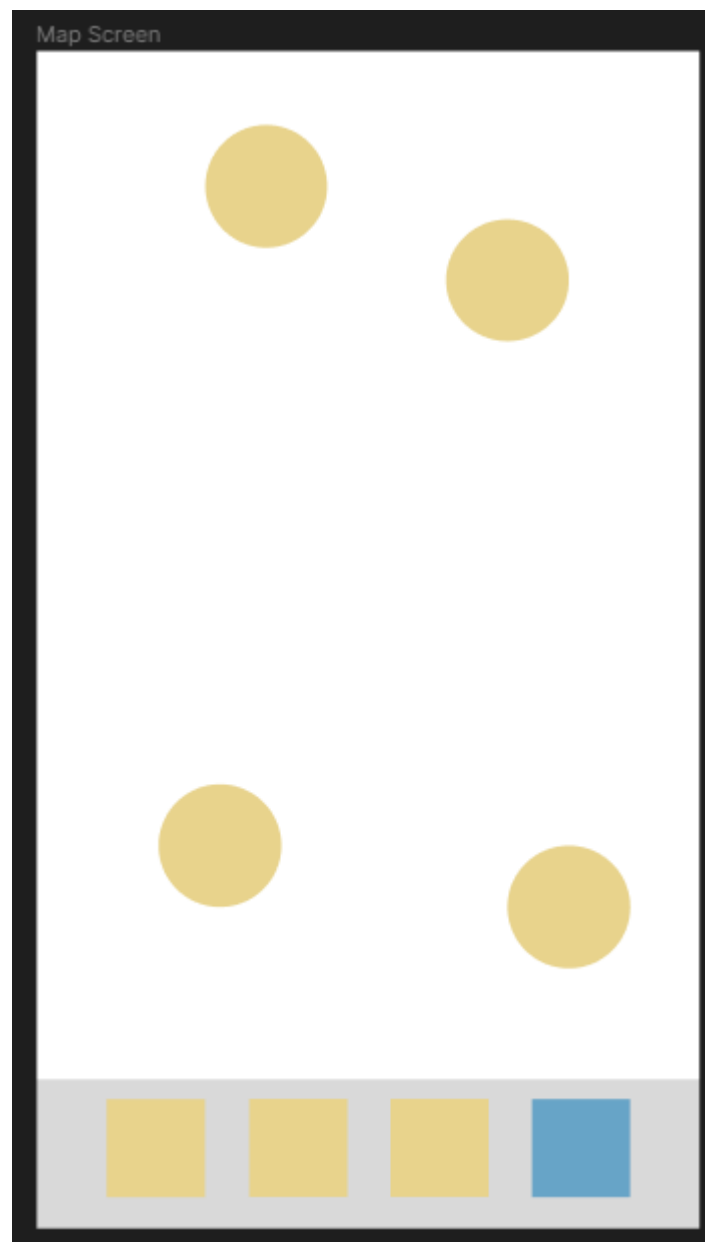
Swiping up ...

Swiping down ...

Swiping left ...

Swiping right...

The Player can also zoom by Spread 2 fingers on the screen, and unzoom by Pinch 2 fingers on the screen.

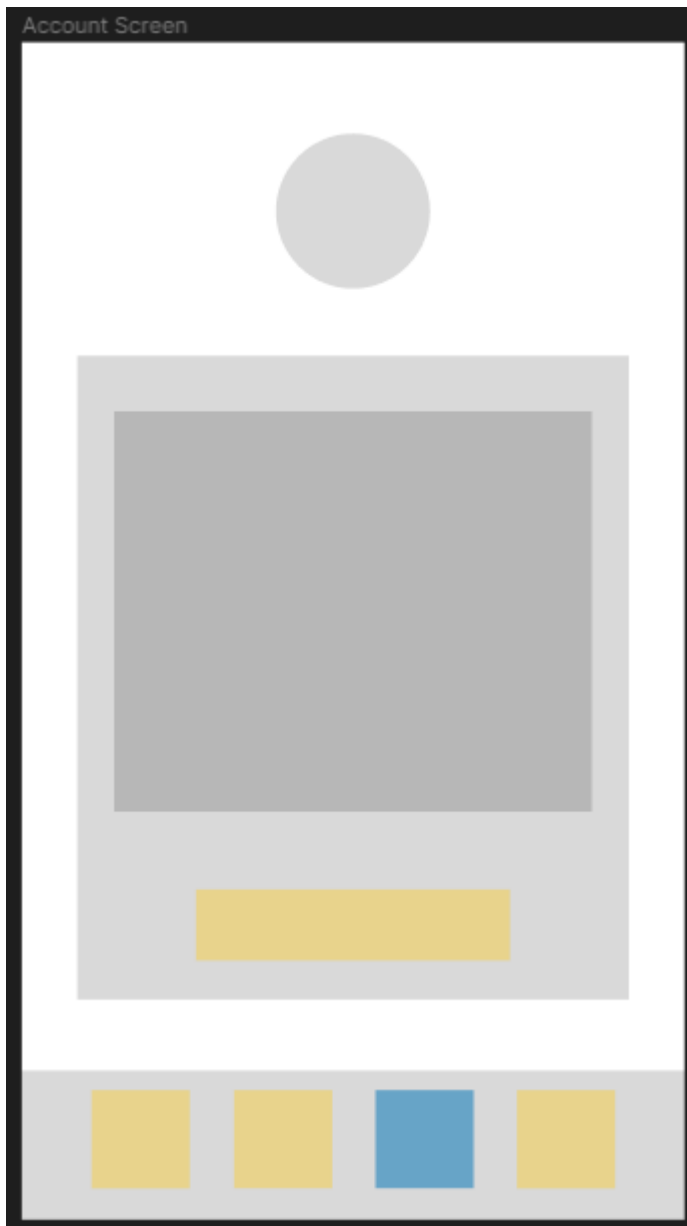


If a Painting is locked, it shows a black image with a question mark on it and the Player cannot interact with the image.

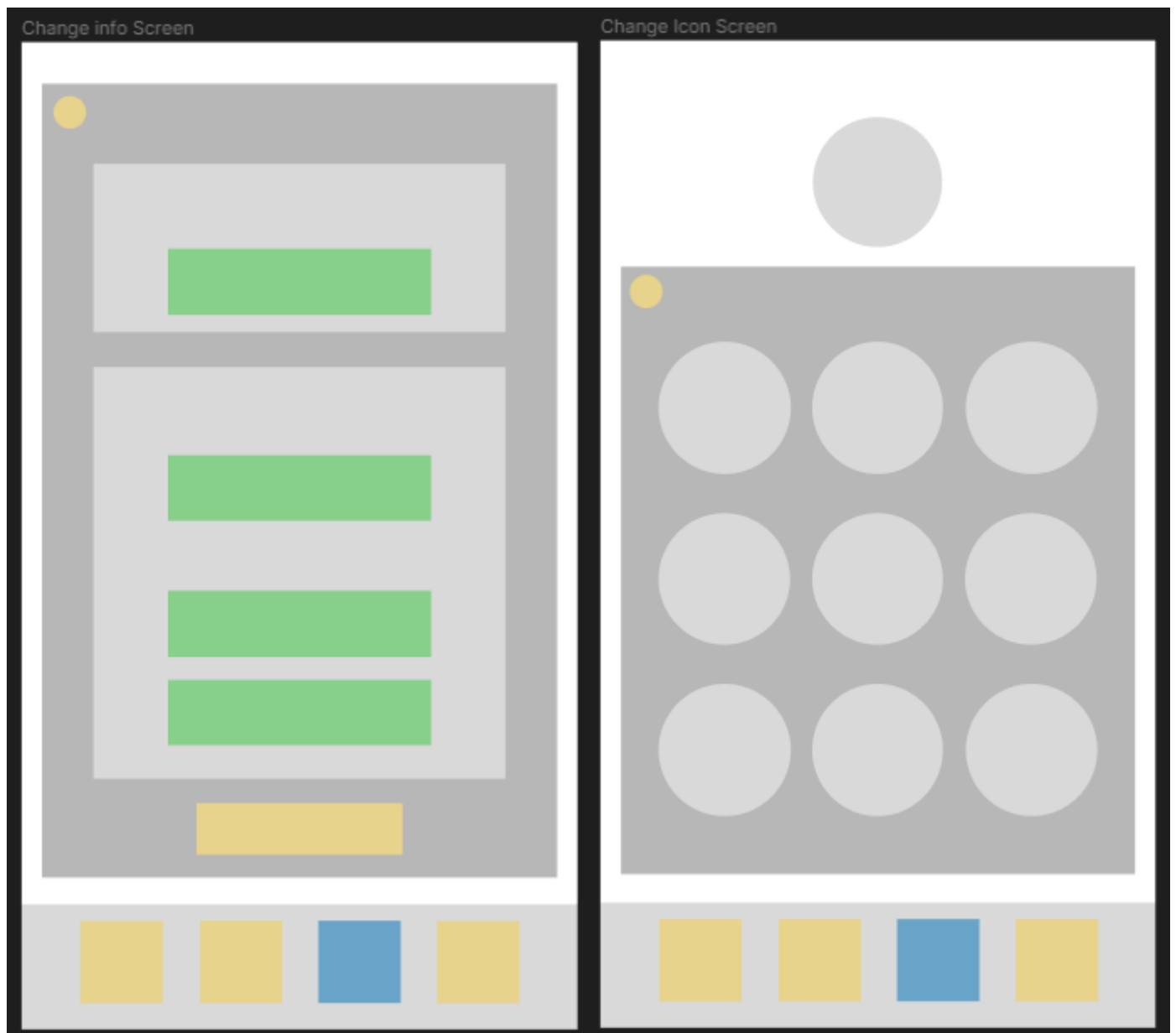
If the Painting is unlocked, it shows a black and white version of the Painting and the Player can Press & Lift on an image to open the corresponding Painting Screen.

If the Painting is scanned, it shows a colored version of the Painting and the Player can Press & Lift on an image to open the corresponding Painting Screen.

2.3.5 Account Screen

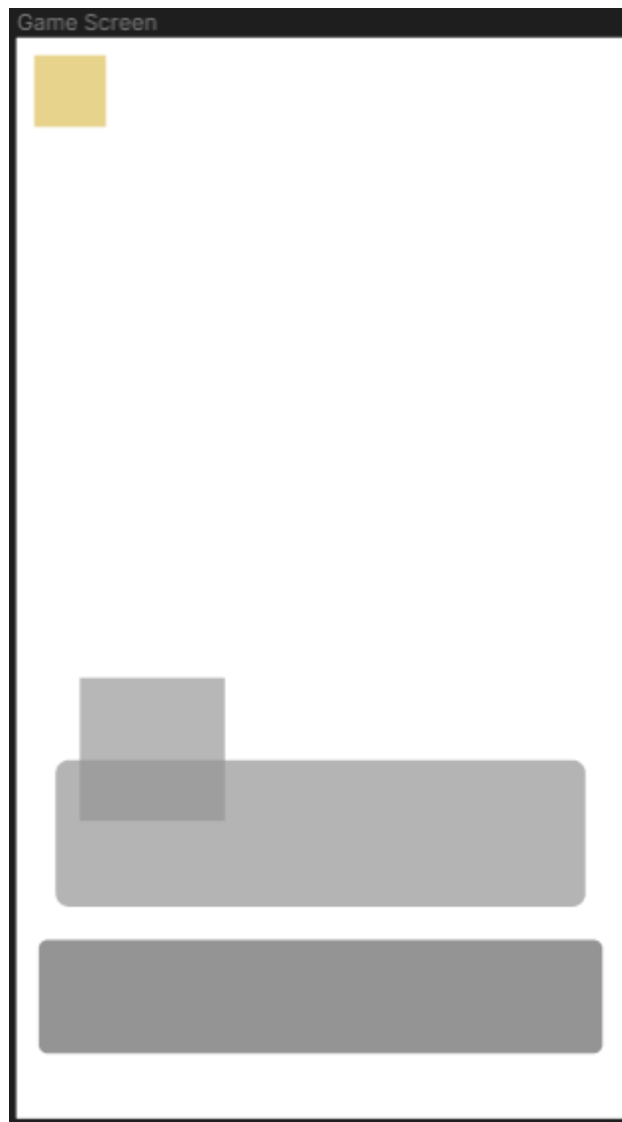


2.3.8 Customization



3 HUD

The HUD should be minimal and non invasive, only essential elements should be present.



3.1 Dialogue

When a Dialogue is started a Textbox is shown in the bottom side of the screen, this Textbox has a background image (that contains also the name of the Character) and below it a box in which word shows.

The letters start from top left and show 1 by 1.

If the Player Press & Lift on the Textbox:

- if the dialogue is not complete, it autocompletes the entire phrase.
- if the dialogue is complete, it goes to the next one.

3.2 Character

During a Dialogue a Sprite of a Character shows above the Textbox with an animation of an open mouth going up and down.

Mechanics ([Keyword](#))

1 Game Progression

1.1 Game Loop

The Player can explore a Virtual Tour of the Museum, during which they can Interact with the Painting and find and complete the missing part of them.

1.2 Win Condition

The objective of the Player is to finish every puzzle in the room and collect every reward.

1.3 Rewards

The Player is given a reward each time they manage to finish a puzzle or scan a Painting in the museum.

2 Movement ([Ref](#))

The *Player* is confined to move only from a *Checkpoint* to another.

2.1 Checkpoint

Every *Checkpoint* can be reached from any other *Checkpoint* that is *In Sight* with a quick *Press & Lift* on the corresponding **+Icon**.

The Player is teleported to the new location, facing the same direction they were facing before.

2.2 Camera

The Player can move around the Camera along 2 axis, as the drawing below:

The Player can Press to initialize the Camera Rotation state.

2.2.1 Camera Rotation State

Horizontal Swipe of the Finger results in rotation around the Y Axis, following the inverse direction of the Swipe:

Left Swipe = Rotate to the Right (Clockwise).

Right Swipe = Rotate to the Left (Anti-Clockwise).

Vertical Swipe of the Finger results in rotation around the X Axis, following the same direction of the Swipe:

Swipe Up = Rotate to the Top (Clockwise).

Swipe Down = Rotate to the Bottom (Anti-Clockwise).

The Player can Press with another Finger to initialize the Camera Zoom state.

If Finger is Lifted return to Neutral state.

2.2.2 Camera Zoom State

3 Interactables

The Player is able to interact with some object on the map by Press & Lift on it, and depending on the type of object a different thing happens.

3.1 Checkpoint

The Player is able to travel by Press & Lift on a Checkpoint and then can look around there.

3.2 Painting

The Player is able to observe a Painting on the UI.

By pressing outside the Painting they will stop observing it and return to the navigation of the gallery.

3.3 Collect Piece

The Player is able to collect Piece (Sprite) by Press & Lift on it when observing a Painting, this moves the Piece in the Player's Inventory and removes it from the painting.

3.4 Place Piece

The Player is able to select and place a Piece by Press & Lift the Piece in the inventory and then by Press on one spot on the painting.

If the second Press is invalid the Piece is deselected.

If the second Press is on the wrong spot is invalid (Anim, Sound).

If the second Press is on the correct spot is valid (Anim, Sound) and the Piece is removed from the Inventory and is placed on the Painting.

4 Inventory

The Player has 2 Inventories, one to carry Pieces and one to keep track of every Painting unlocked in the Gallery.

4.1 Piece Inventory

Pieces are placed on a visible inventory in game and they can be selected while observing a painting.

They are located on the bottom of the screen along the whole length of the screen and occupy the space equally, so if another Item is added they all move in new positions accordingly, new items are added on the right most position.

4.2 Gallery

See [Gallery Screen](#).

4.2.1 Locked

A Painting (*Sp_Locked_01a*) is Locked until its puzzle is completed, and the Player cannot access the corresponding Painting page.

4.2.2 Unlocked

A Painting (*Sp_PaintingNameUnlocked_01a*) is Unlocked when its puzzle is completed, and the Player can now access the Painting page containing different information.

In the Painting screen the Player is able to [Scan](#) the Painting.

4.2.3 Scanned

A Painting (*Sp_PaintingNameScanned_01a*) is Scanned when it gets scanned in the real museum, and the Player is given additional information.

4.2 Account

4.2.1 Avatar

4.2.2 User's Data

5 Painting scan

During the visit in the museum the Player can experience it in AR, the Player is given the chance to scan the real version of the Paintings Unlocked in the Gallery.

A button gives access to the camera and the Player can take a photo of it. After taking a photo the camera screen closes and the Player is back in the Painting screen.

If the Player manages to take a photo of the corresponding Painting the Painting changes to the scanned state.

If the Photo doesn't contain the Painting a message in front shows, and the Player can click anywhere but on the message to remove it.

Sound

1. Outline

The purpose of the audio is to make the app more immersive.

1.1 Overview

Nothing specific to avoid distraction from the application but enough to not let the user getting bored because of absence of feedback

1.2 Music

The background music will be soft to give the impression of being in a museum

1.3 Sound

All the sounds will be necessary to give a feedback for different actions

1.4 Dialogue

When the puppet talks there will be a more playful music

2. Implementation

3. Content List

3.1 Sound Design

1. Buttons: a simple click as audio feedback of an action
2. Piece Collected: when the user pick up a piece
3. Success: when the user places a piece on the right spot
- 4.

3.2 Music

1. In-game music: some classical music to create atmosphere like in a museum

3.3 Dialogue

1. Character music: 2 or 3 different musics on the carousel style

