



## GAME DESIGN DOCUMENT

### CONTENTS

Specifications.....	2
Concept .....	2
<b>Concept brief</b> .....	2
<b>Intentions</b> .....	2
<b>Game loop</b> .....	2
<b>Setting</b> .....	2
Mechanics.....	3
<b>Victory and defeat conditions</b> .....	3
<b>Choosing &amp; starting a level</b> .....	3
<b>Taking pictures</b> .....	3
<b>Pictures Constraints (Player's mission list)</b> .....	3
<b>Calculation of the image's quality</b> .....	4
<b>Reward</b> .....	5
<b>Alternative modes</b> .....	5
User interface .....	6
<b>In-game interface</b> .....	6
<b>Controls</b> .....	7
<b>Menu navigation</b> .....	8
References .....	9
<b>Other documents</b> .....	9
<b>Benchmark</b> .....	9

***This document doesn't describe the game according to the delivered prototype's state. It explains our gameplay and user experience intentions for a more advanced version of the game. However, most of the features described are still present in the prototype.***

## SPECIFICATIONS

**Platform:** Android Smartphones

**Target Audience:** Indian women from 18 to 25 years old. However, the game should not be restricted to this specific group people; it should appeal to other demographics.

**Genre:** Photography game - casual

**Engine used:** Unity

## CONCEPT

### CONCEPT BRIEF

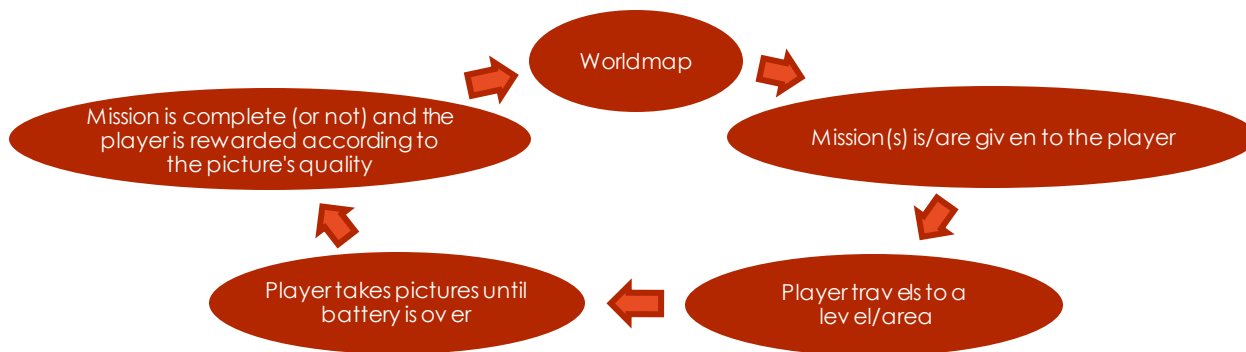
The main idea of this game is to put the player in the shoes of a professional photographer. The game's objective is to take the best pictures possible in a given scenery (level) while following subject constraints (For example, photographing camels). The challenge comes from choosing the right settings for the picture (Frame, composition, timing...) while managing other factors (camera's battery, time of the day...). See [mechanics](#) for more information.

### INTENTIONS

The player should feel empowered by the ability of making artistic and meaningful choices through the use of a camera. The rules followed by the game to determine the quality of a picture should feel natural to the player and match his or her artistic sense.

Since the game targets casual gamers, the play sessions should be kept short. The different levels of the game last from 30 seconds to 1 minute. Also, the game should feel rewarding and not punishing.

### GAME LOOP



### SETTING

The game is set in Rajasthan, and the player embodies a traveler photographer who works for different clients. The player is sent to this Indian region to take specific pictures which fit the client's needs.

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### VICTORY AND DEFEAT CONDITIONS

**Missions:** When starting a level, the player is given one mission or request. The player's goal is to fulfil this mission by taking the requested picture(s). Once a mission has been completed, other missions can be given to the player. (See the Mission list document)

**Battery:** Everytime the player starts a level in which he or she has to complete a mission (not in free mode – see [alternative modes](#)), the camera's battery is limited. After a specific amount of time (which can be different according to the missions), the battery is empty and if the player didn't accomplish the mission, he or she has to start the level again.

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### CHOOSING & STARTING A LEVEL

**World map:** This menu can be considered as the level selection for the player. A map of the Rajasthan is displayed, and several areas are accessible for the player. The player can access any of the available areas. *In the prototype delivered, 2 areas are available*

**Areas or levels:** They correspond to a specific scenery of Rajasthan. The player can take pictures only while being in one of those levels. Each area has specific features and elements so the player has to go from one level to another in order to accomplish his or her missions. All the different levels are described in the Level Design Document. The player can leave an area whenever he or she wants.

**Day & Night cycle:** Each levels are available at different time of the day (day and night). On the world map, the player can choose if the areas to which he or she travels will be set in day or night. The scenery and elements of each area will be different depending on the time of the day at which it is set.

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### TAKING PICTURES

**Movement:** When the player is inside an area, he or she cannot move but can rotate (look around) in order to see the whole scenery around him or her.

**Camera features:** The player can zoom in and out in order to change the picture's frame. This allows him or her to get a better composition or to increase the focus on some elements.

**Pictures limitation:** The player can take an unlimited amount of pictures, but he or she is constrained by the camera's battery.

See [controls](#) to see how all those actions can be performed by the player.

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### PICTURES CONSTRAINTS (PLAYER'S MISSION LIST)

All the missions will be presented to the player in a narrative way (textual mission brief and context explanation)

#### Mission types:

- **Mandatory mission**, which must be completed by the player in order for him or her to get new mandatory client requests. In these missions, the objective (requested picture) is clear, but the quality of the picture also needs to be good. (See [image quality](#)) A mission list document explains all the missions available.
- **Challenges (or optional missions)**, where the player can take certain photographs for extra rewards. These missions are more on the funny-side and they don't need to be completed in any specific order. Usually, challenges involve taking the picture of rare or time based elements. (See types of elements to be photographed)

## Scenery elements to photograph:

- **Monuments**, which consist in the major attractions of each place. They are big and are not hard to take picture of.
- **Buildings**, which correspond to any urban construction which is not a monument.
- **Animals**, which move around in the scenery. They have different animation and there are not always present in every level. It is up to the player to take a picture of them when he or she has the opportunity. Some of them can also move very quickly and be hard to catch.

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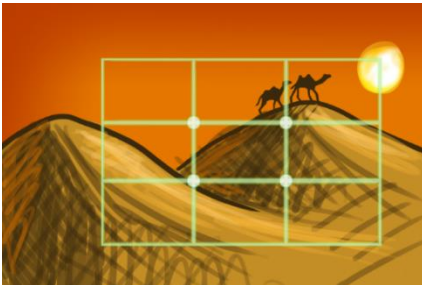
## CALCULATION OF THE IMAGE'S QUALITY

### Check if requested elements are present:

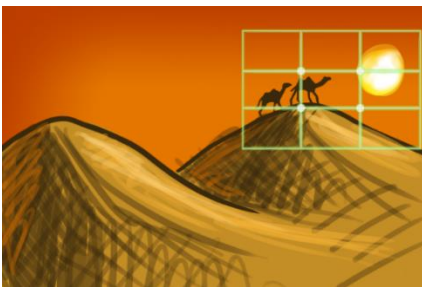
The image quality is calculated for every image which fit the request of a mission. For example, if the player must take the picture of a camel, the game will evaluate the quality of the picture (using the criterion described below) only if a camel is present within the photograph's frame.

### Composition:

The game will rate the picture's quality according to the composition of its element. The composition rule that will be used for this purpose, most of the time, is the rule of third. Basically, the engine recognizes the different elements within the picture's frame, and check if their position follows this rule.



*On this first example, the picture follows the mission constraint and is acceptable (two camels are present on the picture). However, the composition of the photograph is clumsy and it will not get a good rating.*

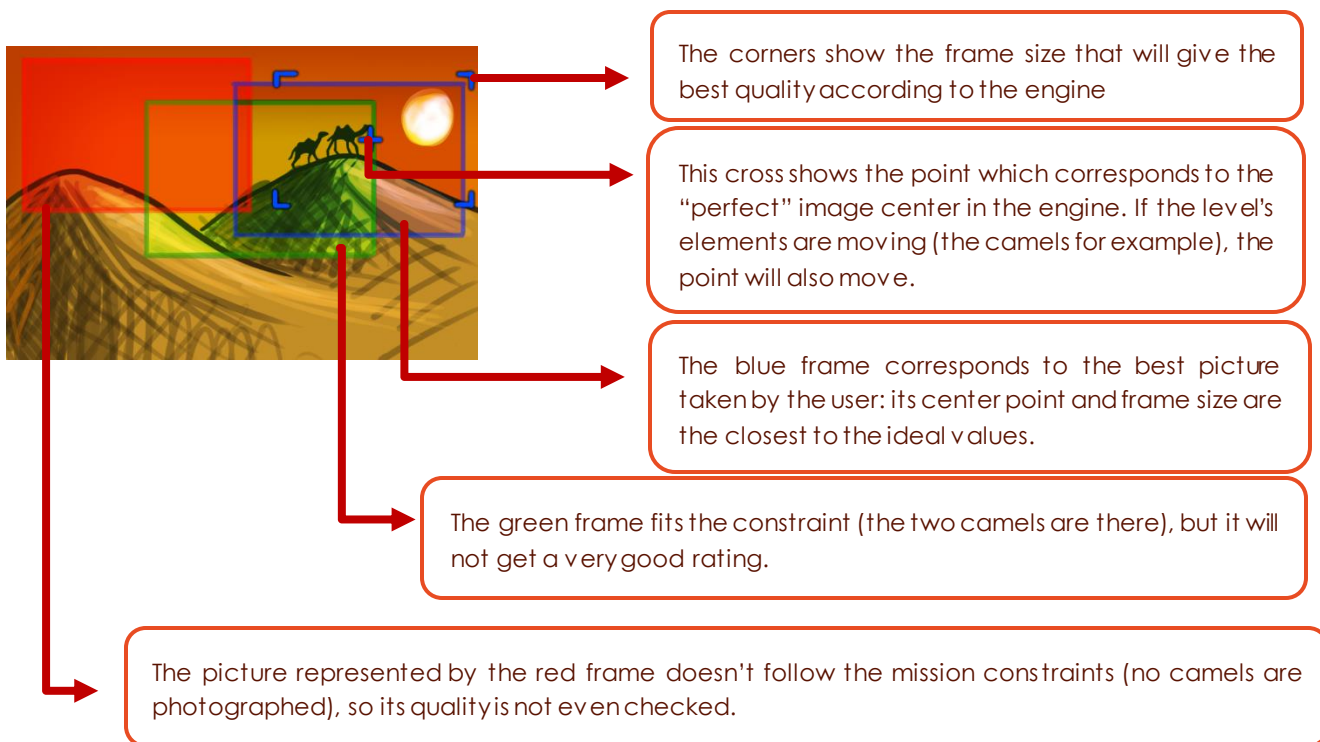


*In the second example, the player's picture still fits the constraints of the mission (two camels), and the composition is much better: the camels and the sun are located at the intersection of the lines used for the rule of third.*

### How does the engine check those parameters?

To avoid any image processing algorithm, the engine will check the conditions in which the pictures are taken in order to determine all the parameters described above (mood, composition, presence of different elements...)

The different factors checked by the engine are the elements present in the picture, center point of the picture's frame (according to the "perfect point"), the frame size (according to the "perfect zoom") and the time of the day at which the picture is taken.



### Technical description of the engine picture quality check:

- The engine processes the distance of the screen's center from a preset 'perfect' point placed in the game universe. As the distance gets greater, the value of the taken image reduces.
- An optimal zoom level may be implemented by attaching a zoom factor between 0 and 1 to a 'perfect' point in the game world. If the player manages to get close to that zoom value while taking a picture near a 'perfect' point, the player will get the maximum score possible.
- For quests where a number of certain items (camels or houses) need to be photographed, there can be a system of a grid ray trace when the player takes a photo to determine how many of those types of items are in that frame.
- Programming functions which should be used:
  - 4 CapsuleCast for the third rule (1 hit = value ++)
  - A boxCast to detect the objects in front of the camera
  - Level of zoom (coefficient)

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### REWARD

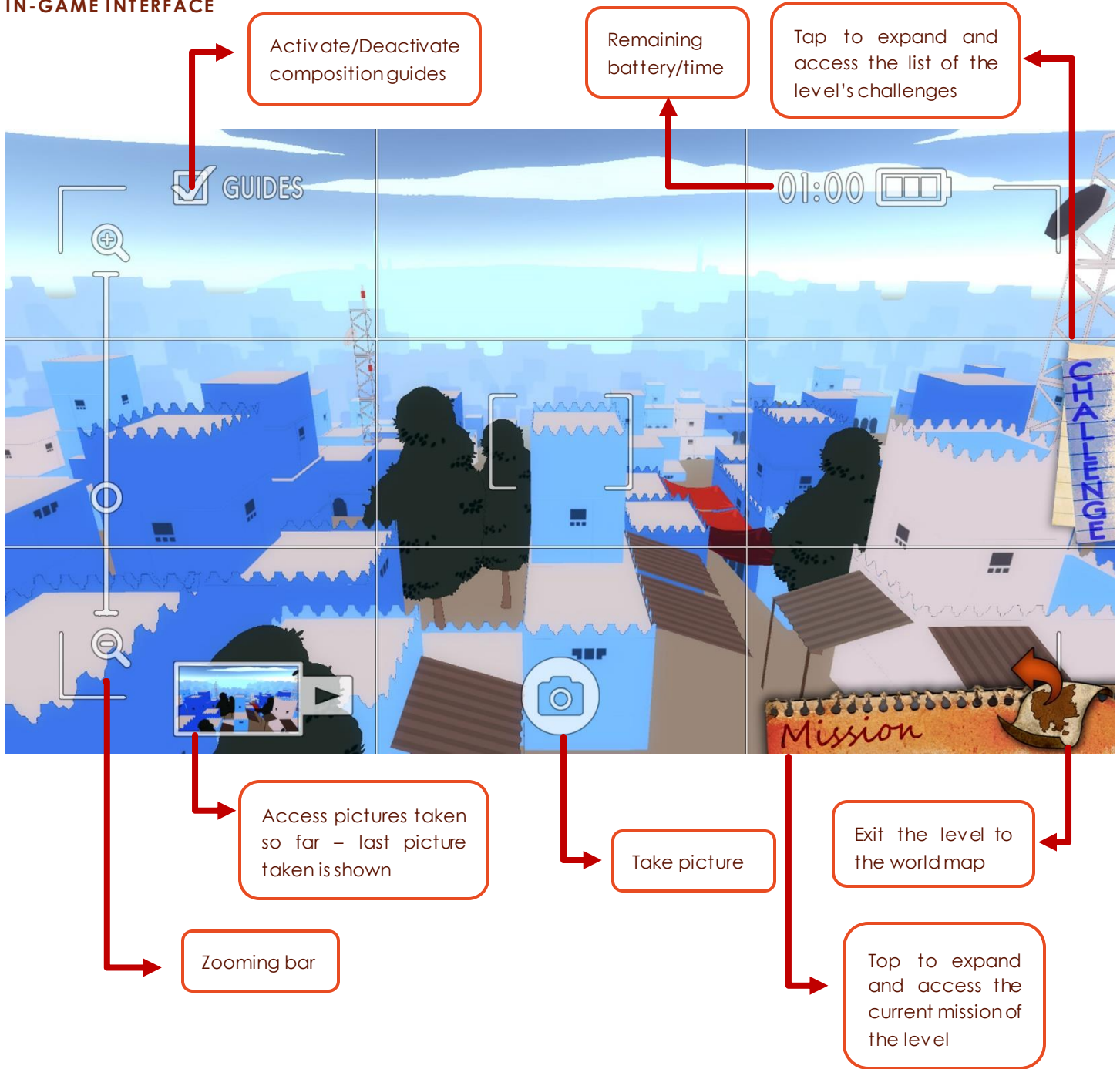
At the end of each completed levels, the player is awarded points according to the quality of the pictures he or she took. *In the prototype delivered, the player can currently get points for every picture taken (even if they are of the same subjects). In that way, spamming the photography button currently guarantees that the player will get a lot of points. However, this should obviously not be the case in the final game: only the best picture of the same subject should be counted.* The points represent the notoriety acquired by the player and his or her experience as a photographer. *If the project is developed further, the points could be used to access new missions as well as to access new areas and upgrade the player's camera (battery capacity, zoom ...).*

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### ALTERNATIVE MODES

**Free mode:** In this mode, the player doesn't have any mission and battery/storage limitation. He or she can take as many pictures as he or she wants, of whatever subject or scenery.

IN-GAME INTERFACE



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## CONTROLS

*The game has been designed to be played on mobile. However, the prototype can be played on PC only. The controls are thus not optimized with this prototype, since it is played with a mouse rather than with a touchscreen.*

### **Mobile control:**

The player can choose between two control schemes for moving the camera:

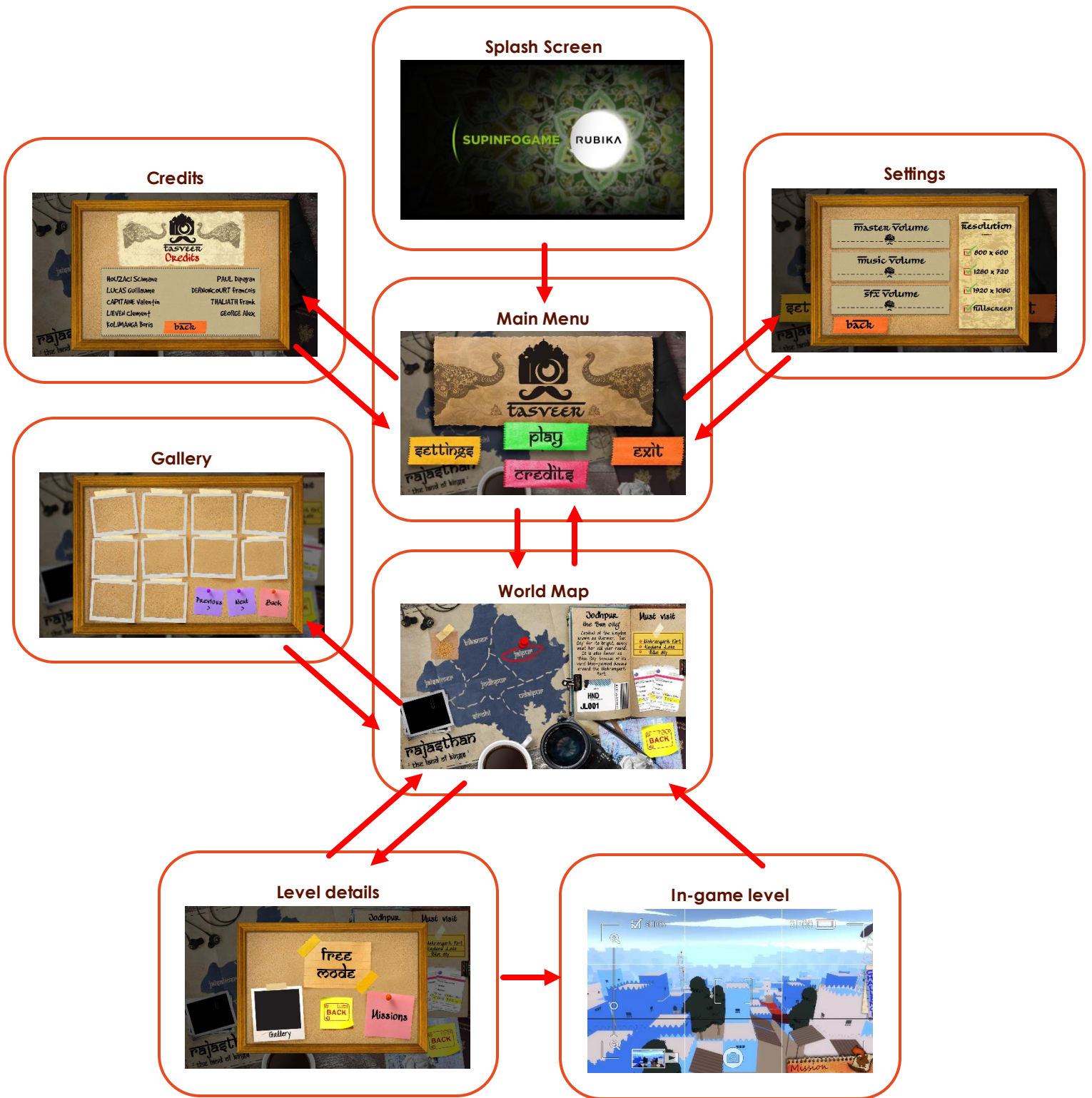
- In the first control scheme option, the player controls the motion of a camera by swiping the screen with his or her finger.
- In the second control scheme option, the phone of the player acts like a gyroscope. The player must move his or her device in different direction in order to pan across the scenery.

The player can zoom in and out using a pinching motion or by using the zoom bar on the side of the screen. Every other action is performed by tapping buttons on the screen (menu navigation and in-game actions).

### **PC control:**

The game is played with the mouse. The player can look around by moving the mouse, and zoom in and out using the scrolling wheel. Every other action as well as the navigation through the menus is performed by clicking on the different on-screen buttons.

# MENU NAVIGATION





### OTHER DOCUMENTS

**Art Design document:** Explanation of the artistic intention for the game (mood, art style) as well as the art researches (mood boards).

**Research document:** Sum-up of the information gathered on Rajasthan. This document lists the places that should be available in the game as well as their features.

**Level Design Document / Mission List:** Explanation of all the missions given to the player.

**Market study:** Justification of the gameplay choices and intentions according to the target audience needs and interests. Also, this document answer a few of frequently asked questions concerning the design choices.

**Organigram:** Explanation on how the team is organized and how the project is going along during this intensive week.

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### BENCHMARK

**Pokémon Snap** by Nintendo

*Pokémon Snap is also a photography-based game. The core mechanics are very similar to our mobile game: the player must take picture of specific objects (Pokémon in this case) and the different pictures are being reviewed by Professor Oak.*

**Beyond Good & Evil** by Ubisoft

*In Beyond Good & Evil, the player embodies a reporter who has the ability to take pictures. The player must use this capacity to progress through the game, but also to get access to optional content. As in our game, the player can zoom in and out and must take pictures of specific elements (animals, creatures, sceneries...).*