

Virtual and Augmented Reality 2023/2024

Made by:

Alberto Cunha (up201906325@edu.fe.up.pt)

Joana Mesquita (up201907878@edu.fe.up.pt)

Joaquim Monteiro (up201905257@edu.fe.up.pt)

How to execute

1. Put the Phauna.apk file in an Android phone
2. Execute the “apk” file to install the application.
3. Afterwards, simply press the App icon to play.

Project Description

About

The game “Phauna” is a small augmented reality game that, with the use of the designated cards, allows players to capture monsters in a variety of ways as well as use the monsters they have captured to fight other monsters.

Technologies used

The game was created for Android in Unity using Vuforia.

Markers

The application uses three different monster cards (Figures 1-3) and two smaller markers (Figures 4-5) to indicate which attack has been chosen by the player. When printed, the Monster cards should have the dimensions 12.59 cm x 8.18 cm, and the Attack markers should have the dimensions 3.98 cm x 4 cm.



Figure 1 - Pyroscarab card



Figure 2 - Pricklash card



Figure 3 - Aquarihn card



Figure 4 - Normal attack card



Figure 5 - Special attack card

Monsters are projected on top of the monster cards (Figure 6-8). We also calculate the card's positions relative to each other so that a battle can be started when they are close enough and facing each other.

Furthermore, they also have info on the monster, like their stats (health, speed, attack, and defense) and the attacks they can perform (the first one being the normal attack and the second one being their special attack)

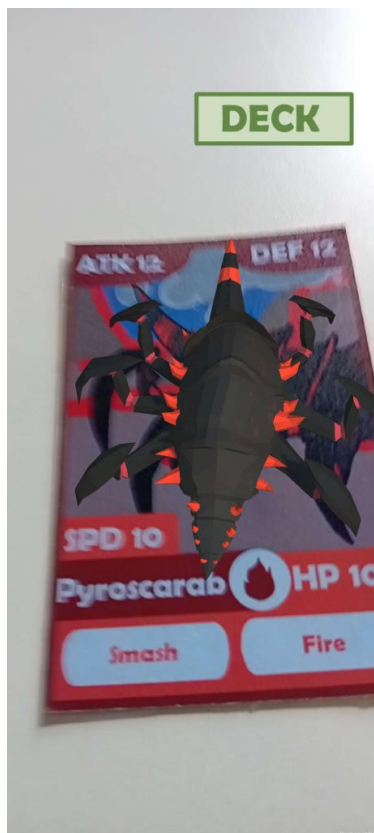


Figure 6 - Pyroscarab projection



Figure 7 - Pricklash projection



Figure 8 - Aquarhin projection

The Attack markers are used so the player can select the attack during a battle. When only one of them is on screen, and it is the player's turn, the player's monster

executes the specified attack. A cube is projected on these markets (Figure 9-10) so the player knows the marker is working.



Figure 9 - Normal Attack selected



Figure 10 - Special Attack selected

Features

When the user opens the app, they are greeted by the main menu (Figure 11), where they can start the game, see how to play the game (Figure 12) or see the game's credits (Figure 13).

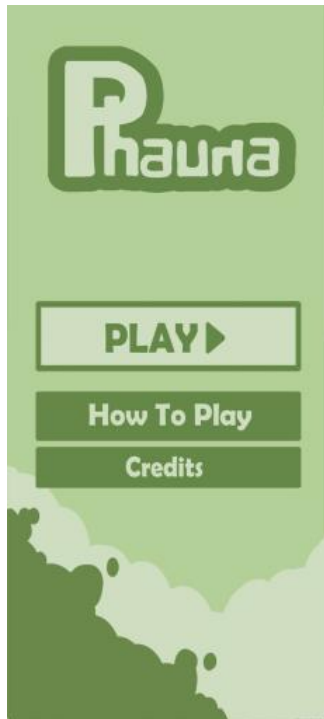


Figure 11 - Main Menu



Figure 12 - How to play



Figure 13 - Credits

Starting the game, the player is first in capture mode, where they can use different methods to capture the monsters.

To capture the Aquarihno (Figure 14), they must shoot it with arrows until its health is depleted.



Figure 14 - Aquarhin catching method

To capture the Pyroscarab (Figure 15), they must look at it from behind and make noise.

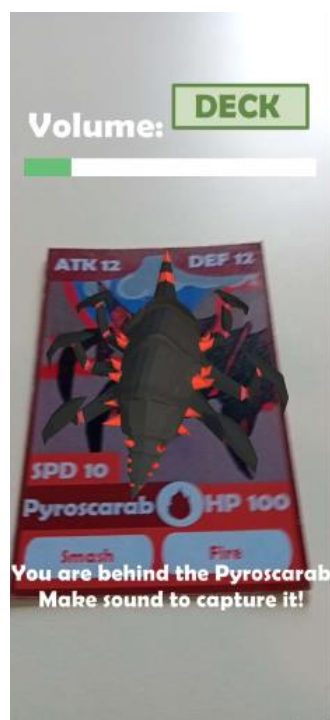


Figure 15 - Pyroscarab catching method

To capture the Pricklash (Figure 16), they must shake their phone until the gage is filled.



Figure 16 - Pricklash catching method

This screen also has a button with the words "Deck" allowing the player to see the monsters they have already captured (Figure 17-18).



Figure 17 - Empty Deck Screen

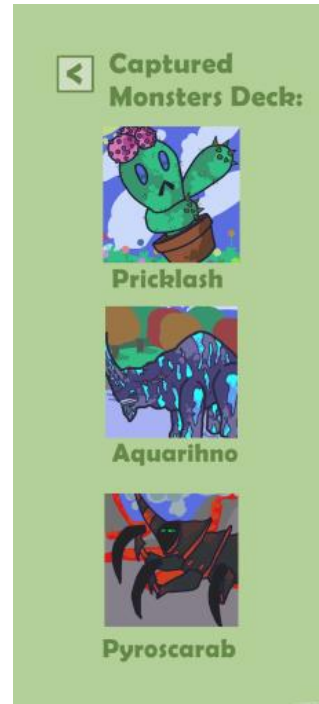


Figure 18 - Full Deck Screen

If two cards are put closely facing each other, and at least one of the cards has been captured by the player, a battle prompt will be brought up asking if the player wants to battle (Figure 18). If the player says “Yes” a battle will begin (Figure 19).

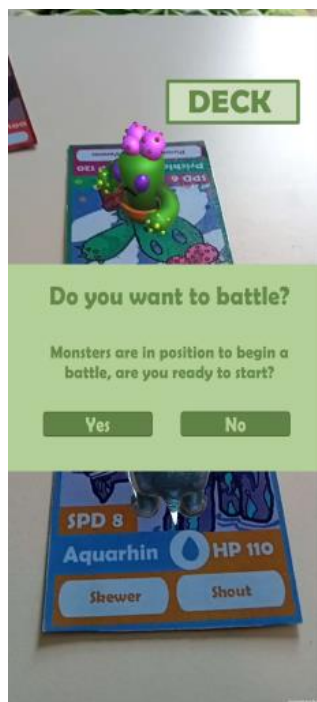


Figure 18 - Pre-battle prompt

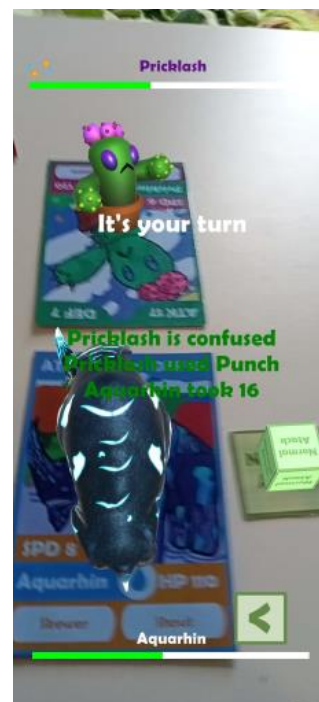


Figure 19 - Battle screen

The enemy monster will attack in its turn, and, for the player to attack in their turn, they must use one of the Attack Markers to choose their attack (Figure 20).

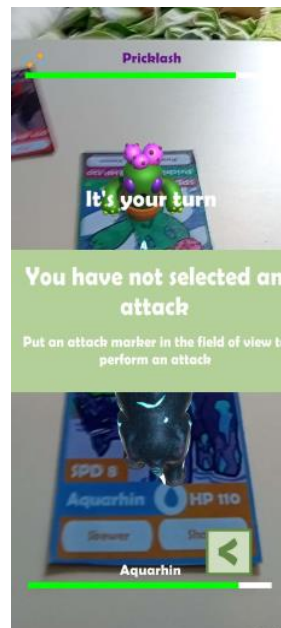


Figure 20 - Move Selection warning

If the player wins the fight and they are fighting a monster they haven't captured yet, then that monster will be captured.

If the player loses track of the monster cards involved in battle, they are given 5 seconds to find them again (Figure 21). Otherwise, it is considered that the player ran away, and the battle ended.

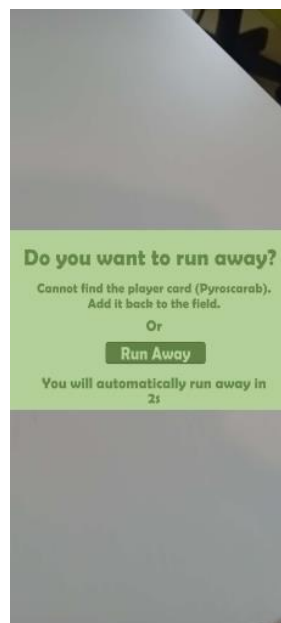


Figure 21 - Monsters are not visible during battle warning

Lastly, the player can undo the last move made in battle by pressing the undo button at the bottom of the screen.

Notes

- We tried to use augmented buttons to perform the attacks, but they were obsolete in the version of Vuforia we were using.
- We attempted to create a capture method where we used luminosity to capture the monster however, we were unable to display and analyze the AR camera's output without the application crashing.