HoloZoo

HOLOGRAM-BASED
SERIOUS GAME

A **hologram** is a three-dimensional representation of an object created using light projection onto a transparent surface or a specialized medium, allowing users to perceive depth and spatial details without the need for special glasses.

In the **HoloZoo** application, **holograms** are used to display **3D models** of various animals found across the globe, allowing students to **observe them from different angles in real space**, learn about them and interact with them.

MULTILINGUAL
SERIOUS GAME

The game is implemented as a multilingual game. All text within the game has been translated into five EU languages: **English**, **Croatian**, **Spanish**, **Hungarian** and **French**.

GREEN –THEMED
SERIOUS GAME
Wildlife conservation and endargered species

This serious game focuses on **wildlife conservation** and **biodiversity**. HoloZoo uses holographic technology to present 3D models of animals, allowing students to explore their habitats, diets, geographic distribution, and **conservation status**. The game provides an interactive approach to learning through quizzes and direct engagement with holographic representations.

By integrating educational content with technology, HoloZoo enhances students' understanding of **endangered species** and their **ecosystems**, promoting awareness of conservation issues in a structured and engaging manner.
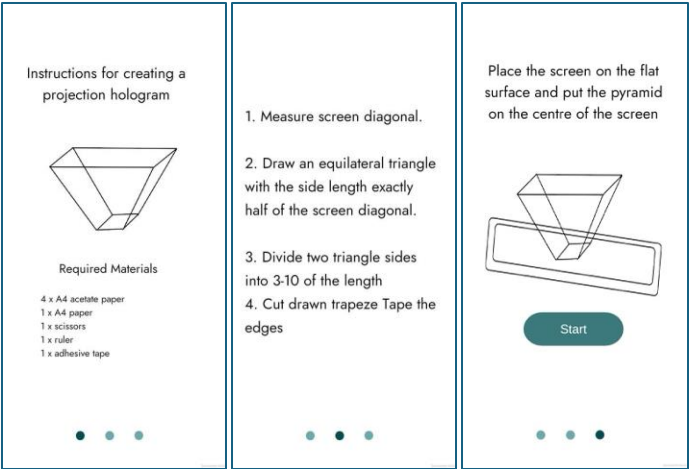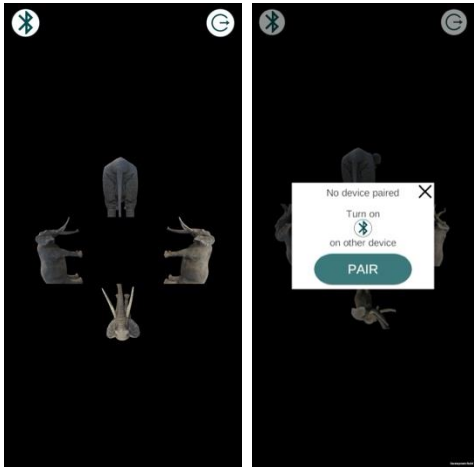
Gameplay information

Selecting the language.

Short instructions for creating projection hologram.
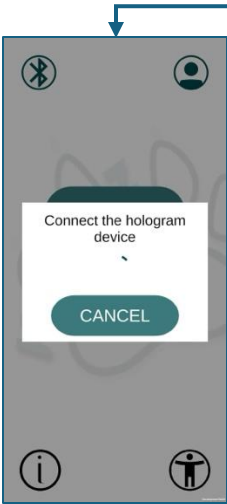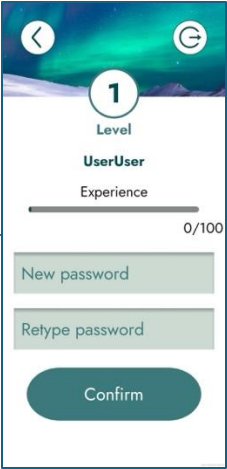
Selecting device purpose.

Hologram purpose – required Bluetooth connection to other game purpose device (in order to control the hologram).

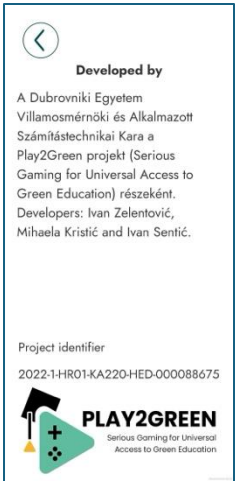**Game purpose** – required register/login in order to play the game.

User profile with progress details.

Connection with hologram purpose device.
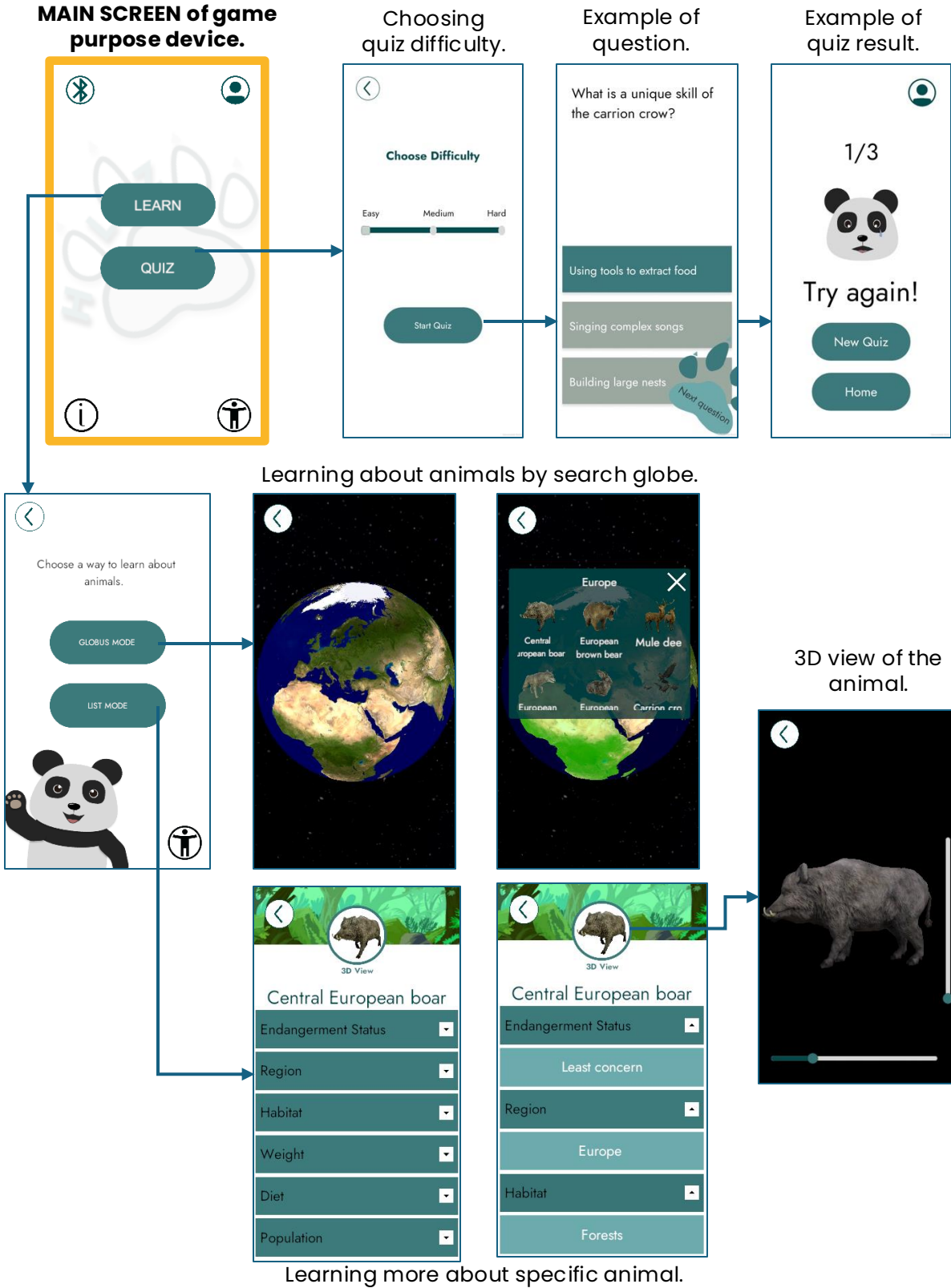
About application.

MAIN SCREEN of game purpose device.

Accessability settings.

PLAY2GREEN
Serious Gaming for Universal Access to Green Education

Co-funded by the European Union

Project reference: 2022-1-HR01-KA220-HED-000088675

Gameplay information

MAIN SCREEN of game purpose device.

Choosing quiz difficulty.

Example of question.

Example of quiz result.

Choose Difficulty

Easy   Medium   Hard

Start Quiz

What is a unique skill of the carrion crow?

Using tools to extract food

Singing complex songs

Building large nests

Next question

1/3

Try again!

New Quiz

Home

Learning about animals by search globe.

Choose a way to learn about animals.

GLOBUS MODE

LIST MODE

Europe

Central European boar   European brown bear   Mule deer

European   European   Carrion crow

3D view of the animal.

Central European boar

3D View

Endangerment Status

Region

Habitat

Weight

Diet

Population

Central European boar

3D View

Endangerment Status

Least concern

Region

Europe

Habitat

Forests

Learning more about specific animal.

DOWNLOAD GAME AND MORE INFO:
https://sociallab.fer.hr/play2green/holozoo/

UDL GUIDELINES

The **HoloZoo** serious game implements
26 Universal Design for Learning (UDL) guidelines.
According to these guidelines, they are divided into three pillars that offer multiple means design guidelines for: Engagement, Representation and Action & Expression.

Multiple means of ENGAGEMENT ●

1 Users can navigate freely between learning methods (list, globe, 3D models) and choose quiz difficulty levels.

2 The game ties learning to real-world conservation issues, reinforcing the importance of biodiversity through interactive exploration.

3 A simple, structured interface ensures a smooth learning experience without unnecessary distractions.

4 The application clearly communicates learning objectives, showing progress through levels and quiz scores.

5 Different quiz lengths (short, medium, long) allow users to select challenges that suit their engagement level.

6 Users receive immediate feedback on quiz answers, level progression, and unlocked content, reinforcing learning.

7 Players are encouraged to continue learning through structured progression, achievements, and positive reinforcement like getting new animals and new questions about them.

8 The game stores multiple user profiles, allowing different learners to maintain individual progress on the same device.

9 The application connects animal knowledge to real-world conservation efforts, reinforcing learning through an interactive experience.

Multiple means of REPRESENTATION ●

10 Users can adjust font size (small, medium, large) and enable high-contrast mode to improve readability.

11 In the introduction level the user is accustomed to the environment and hologram technology.

12 The application uses standard icons for logout, accessibility, information, and navigation (back button), ensuring consistency and recognizability for all users.

13 The dyslexia-friendly font option improves readability for users with specific learning needs.

14 A clean, minimalist interface follows universal design principles, reducing cognitive load and making navigation intuitive.

15 The application provides both textual information (animal lists and profiles) and interactive 3D models, ensuring multiple ways to access content.

16 Users can explore animals through text-based lists, a 3D interactive globe, and holographic visualizations, offering diverse methods of learning.

17 The animal profiles clearly define key information such as conservation status, habitat, and diet using structured text.

18 The game supports five languages (English, Croatian, French, Spanish and Hungarian).

19 All animals are represented with textual information, label and holographic projection that helps students visualize complex spatial information, improving their understanding of animal structures and environments.

20 Users construct their own learning path by choosing between list-based and 3D globe exploration, providing flexibility in accessing content, implementing a sequential way of learning.

Multiple means of ACTION & EXPRESSION ●

21 Users can interact with the application via touchscreens, 3D object manipulation, and Bluetooth-connected devices.

22 The game supports multi-device interaction via Bluetooth, enabling different ways to engage with content.

23 Players can learn through text, 3D visualization, and hands-on interaction with holographic elements.

24 The game provides increasing difficulty, opening new animals and questions when progressing through the game.

25 The level progression system encourages players to set goals and track their learning progress with the list of animals.

26 Users receive feedback on quiz results, including scores, unlocked animals, and progression notifications.