Zenith Outdoor/Indoor Experience

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D4.4 System Mock-up

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Abstract	*The present deliverable provides an overview of the planned activities, methodologies, and expected outcomes associated with the implementation of the ZOE project. Specifically, this document details the development and deployment of the ZOE Project Mockup. It outlines the technical architecture established for the backend server, which is designed to scale for the final application. Particular emphasis is given to the tools and approaches that support inclusive access, including the creation of a fully responsive user interface (UI) featuring login authentication, a "Base Experience," and interactive data collection mechanisms.* *The mockup serves as a critical data-gathering tool, collecting user demographics (age, gender) and user preferences through image-based questioning to tailor the final Augmented Reality (AR) experience. Preliminary results, identified challenges, and next steps are also discussed.*

THE CONSORTIUM

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GLOSSARY

GDPR	General Data Protection Regulation
UI	User Interface
AR	Augmented Reality

1. INTRODUCTION

This deliverable is part of the implementation activities of the ZOE project – Zenith Outdoor/Indoor Experience for Cultural Tours with AR Technology and 3D Platform – funded under the Erasmus+ KA220-ADU programme. ZOE aims to enhance adult education and cultural engagement by leveraging cutting-edge technologies, such as Augmented Reality (AR), 3D simulation, and gamified digital learning paths.

The purpose of this deliverable is to present the context, rationale, and initial developments related to the specific tasks and objectives outlined in the respective Work Package. It serves to document the progress made by the consortium partners and to provide a structured account of the methodologies employed, tools developed, and coordination mechanisms applied.

Specifically, this document focuses on the technical realization of the ZOE Mockup. This prototype serves as the foundational testing ground for the project's digital ecosystem, bridging the gap between theoretical design and the final consumer application.

2. MOCKUP ARCHITECTURE AND TECHNICAL IMPLEMENTATION

To ensure a seamless transition from the prototype phase to the final product, the mockup was developed with a focus on scalability, data integrity, and responsive design. The following sections detail the core components of the developed solution.

2.1 Backend Infrastructure and Data Storage

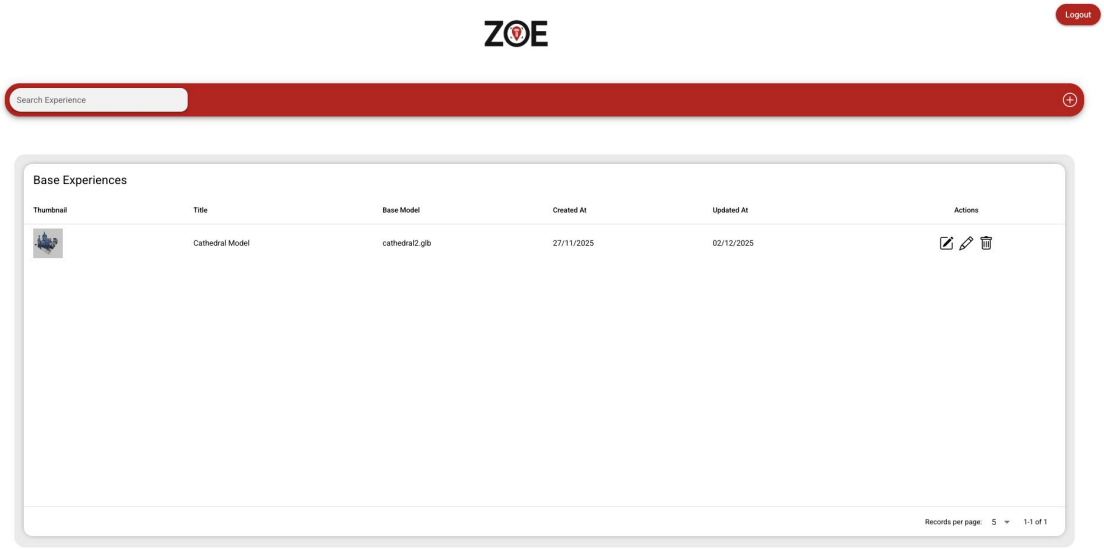
A robust backend server has been established to support both the current mockup and the future full-scale application. This infrastructure is responsible for the secure storage and management of all experience-related data. Key features include:

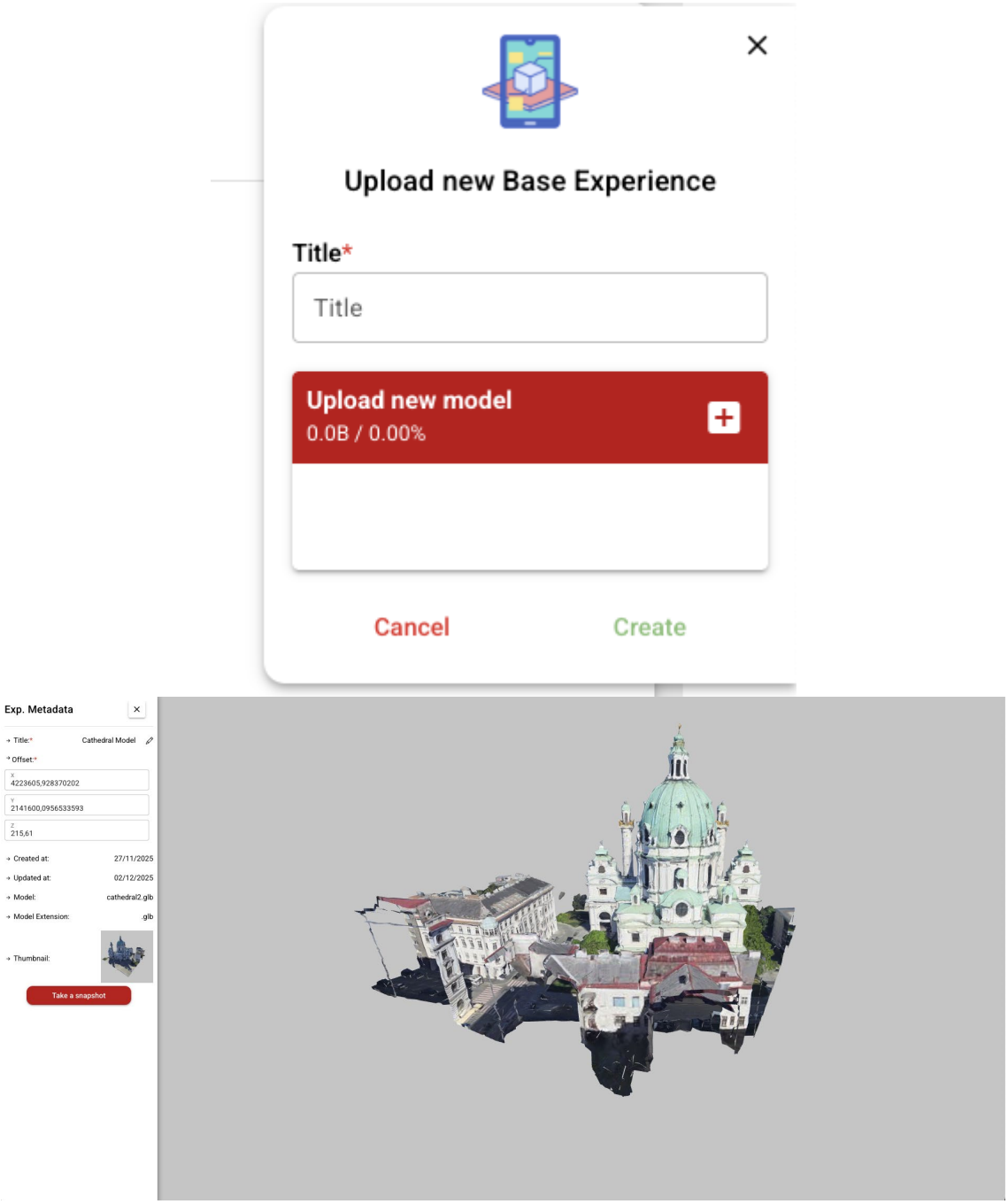
- Centralized Database: All user interactions, preference choices, and demographic data are stored centrally, ensuring that the "actual application" will have immediate access to historical data and user profiles.
- Scalability: The server architecture is designed to handle simultaneous requests, preparing the system for the eventual traffic expected during the pilot and public launch phases.

2.1.1 User Interface (UI) and Responsiveness

The visual component of the mockup—the "Experience UI"—has been designed to be intuitive and accessible.

- Fully Responsive Design: Recognizing the diverse range of devices used by adult learners, the mockup is fully responsive. It adapts seamlessly to various screen sizes, including mobile phones, tablets, and desktop computers, ensuring a consistent experience regardless of the hardware used.
- Login and Authentication: Secure login pages have been implemented to manage user access and link specific data sets to individual user accounts.
- Base Experience UI: A foundational user interface has been created to simulate the look and feel of the final cultural tour application. This includes navigation elements and the visual hierarchy required for the AR content.





3. User Interaction and Data Collection

A primary objective of this mockup is to validate user preferences and gather necessary demographic information to tailor the cultural content effectively.

4. Demographic Data Collection

Upon accessing the mockup, the system initiates a data collection sequence designed to categorize users for research and customization purposes. The system securely collects and stores:

- Age: To analyze generational engagement with digital heritage tools.
- Gender: To ensure inclusivity in the project's reach.
- Additional Metrics: Other relevant demographic data points required for the Erasmus+ reporting and impact assessment.

5. Preference-Based Decision Making

To understand how users wish to interact with the final application, the mockup features an interactive decision-making module:

- Image-Based Questioning: The user is presented with specific images related to the cultural content.
- Interactive Choices: Associated with each image are targeted questions regarding how the user would prefer to make choices within the final app.
- Feedback Loop: These responses are transmitted directly to the backend server. This data is critical for refining the User Experience (UX) design of the final AR tours, ensuring the navigation logic aligns with actual user intuition.

6. Summary and Conclusions

This deliverable has provided an overview of the key activities, methodologies, and intermediate results related to the implementation of the respective Work Package within the ZOE project.

The documented work reflects the commitment of the consortium to ensure the quality, relevance, and impact of the project's outputs. Through the development of this mockup, the project has achieved:

- Technical Readiness: A functioning backend server capable of storing experiences and user data for the final app.
- UI Verification: A fully responsive set of login and experience pages.

- User Insight: A mechanism to collect critical demographic data and preference choices via image-based questionnaires.

The results outlined in this deliverable will directly inform the upcoming phases and contribute to the broader objectives of ZOE. The data collected by this mockup will now be analyzed to finalize the interaction logic for the full Zenith Outdoor/Indoor Experience.

7. Annex 1: Technical Specifications and UI Mockups

A1.1 User Interface (UI)

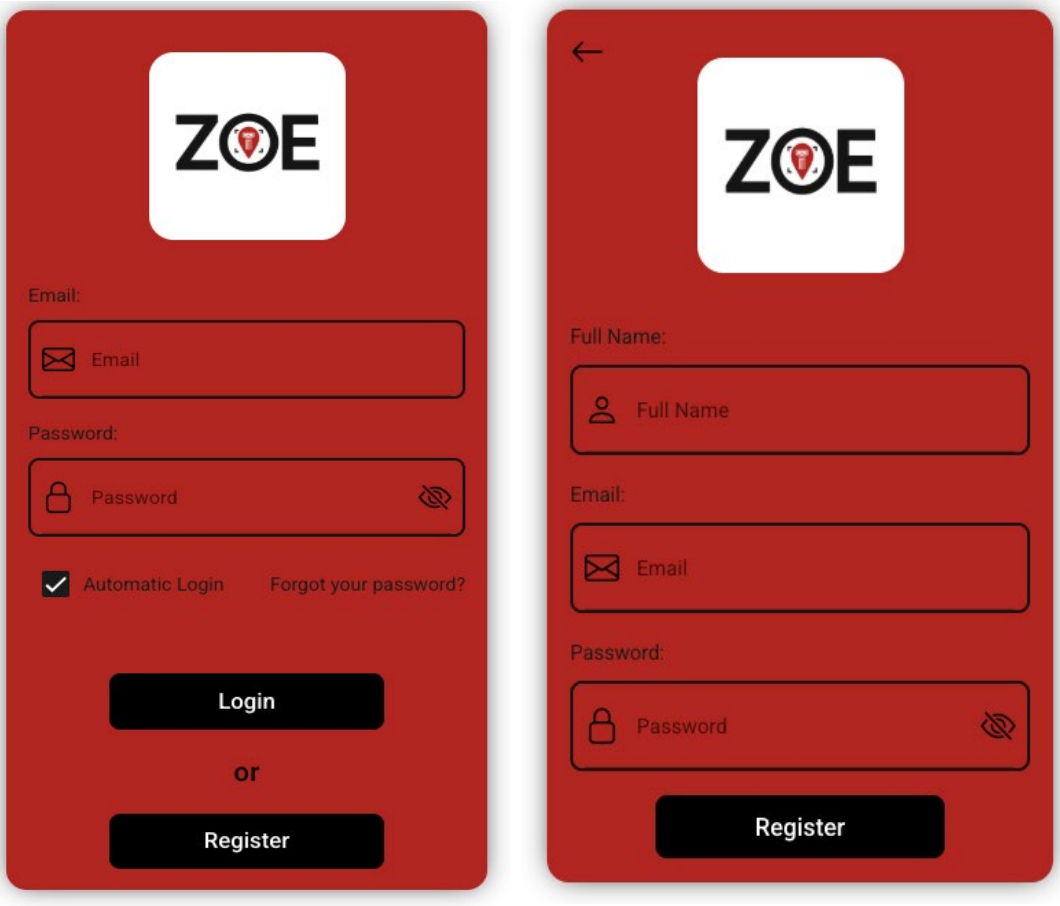


Figure 1: User Authentication Login and registration screens designed for secure user access.

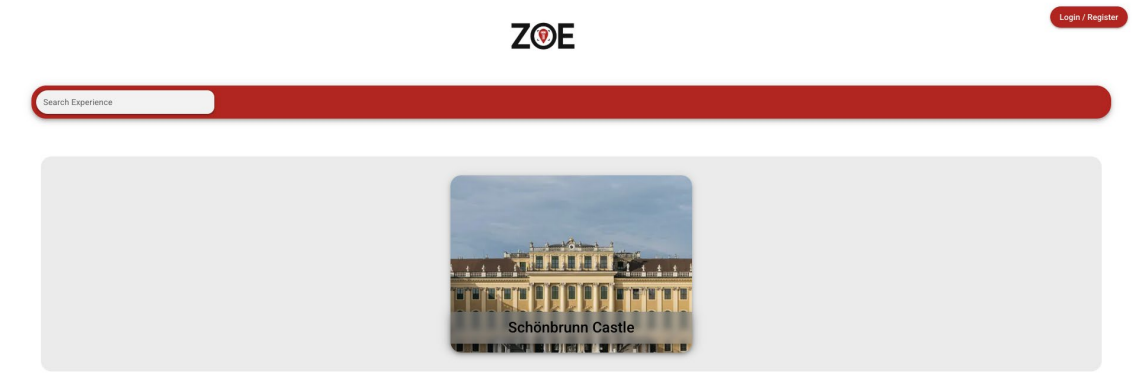


Figure 2: Base Experience Dashboard The central hub where users view available cultural tours.

A1.2 Data Collection and Interaction Modules

Figure 3: Demographic Data Entry Collection of key metrics (Age, Gender) for project reporting.

Figure 4: Image-Based Preference Testing The interactive module where users view an image and answer questions regarding their choice preferences.