

Implementing digitized library heritage in an augmented reality serious game about the city of Plovdiv's history and culture

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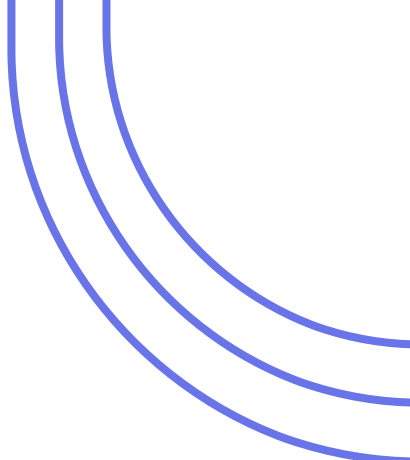
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1

Mobile AR serious games in the field of CH

Serious games for cultural heritage

Serious games: “games that do not have entertainment, enjoyment, or fun as their primary purpose”

(Michael & Chen, 2006)

“**Games for cultural heritage** contain an educational purpose but also aim to promote awareness and appreciation of the tangible and intangible cultural heritage and to support its preservation and reproduction.”

(Laamarti & Eid, 2014)



Augmented Reality

Augmented reality (AR) is defined as a system that “enables an enriched perspective of the real or physical world by superimposing virtual digital objects in real time”

(Casella & Coelho, 2013)



2 Art&Fact Plovdiv

AR serious game about the city of Plovdiv's history and culture

- Combines gamification with the goal of helping visitors learn new knowledge via the use of creative animation, AR and multilingual Bulgarian/English audio or text.
- Financed by EEA Grants project BGCULTURE-1.001-0016-C03 - The cultural heritage of Plovdiv, presented in revitalized, restored and renovated places.
- Playable on a mobile device, available for Android and iOS.
- Free to play, site entrance fee needed.



- Seven participating institutions: National Library "Ivan Vazov", City Art Gallery - Plovdiv, Municipal Institute "Ancient Plovdiv", Regional Natural History Museum, Regional History Museum, Regional Ethnographic Museum, and Regional Archaeological Museum. There are a total of twelve sites to visit.
- The software uses the mobile device's GPS to help guests unfamiliar with Plovdiv to reach the corresponding site.
- The game's storyline is nonlinear and players can visit the sites in any sequence.
- The game's mascot Philly, a syenite golem, advises and encourages players. The mascot is named after Philippopolis, one of Plovdiv's historical names, and is made of the same type of rock as the hills on which Plovdiv arose.

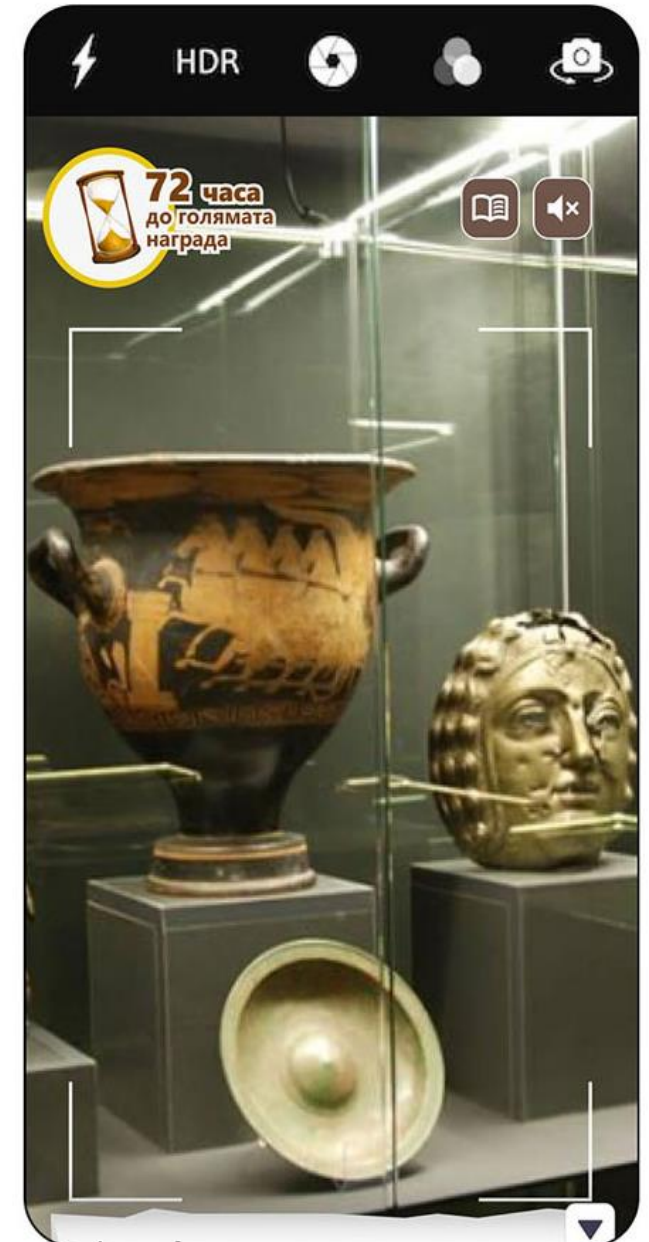


Three types of tasks in the game:

- **Treasure hut (discover & scan)** when a player aims his/her mobile device's camera at a gamified object, the application's automated identification system activates. The objects are enriched by AR. A voice message is played and written details are displayed about the history and significance of the item in question.
- **Puzzle solving.**
- **Answering test questions** related to the acquired knowledge.

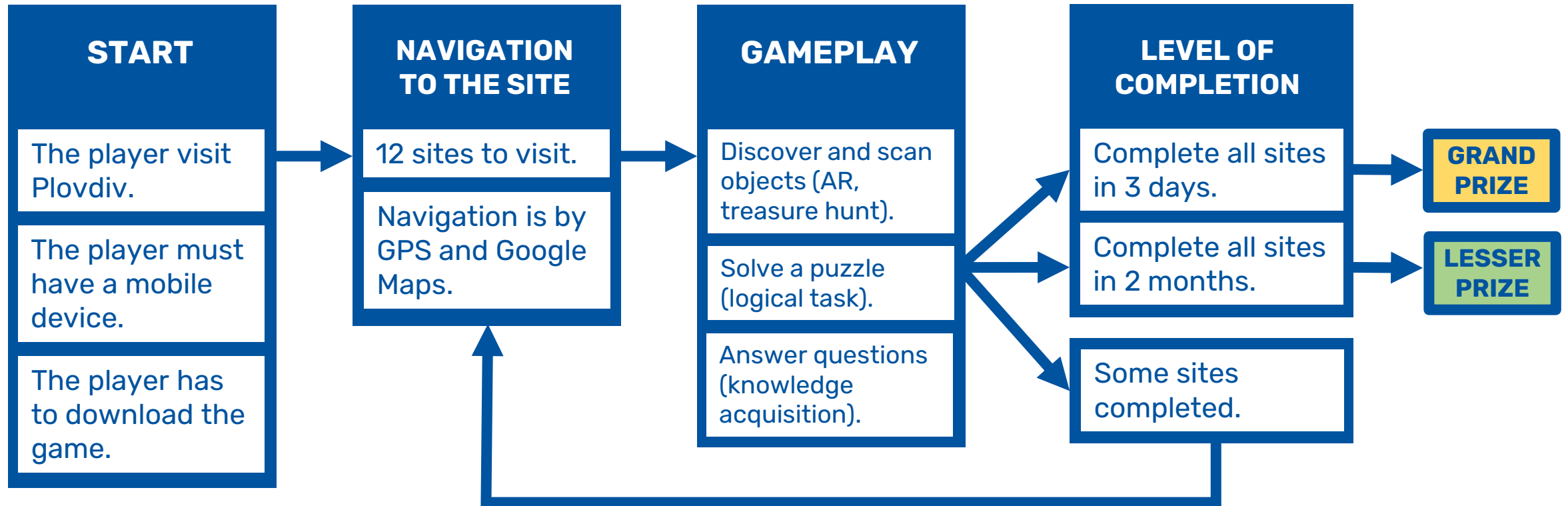
Successful completion of missions is recorded in the player's **"Backpack"**.

The player gets a **grand prize** if he/she completes all missions **in 3 days**, and a **small prize** if missions are completed **in 2 months**.



Art&Fact Plovdiv

AR serious game about the city of Plovdiv's history and culture



3 Implementation of digitized library heritage

■ Mural in the “Ivan Vazov” library



On the second floor of National Library “Ivan Vazov” in Plovdiv is located a large mural painted by three renowned artists: Yoan Leviev, Georgi “The Elephant” Bozhilov and Hristo Stefanov. The mural depicts the literary author Ivan Vazov, often called “the patriarch of Bulgarian literature”, together with characters from five of his works: “Uncles”, “Under the Yoke”, “Ivan Alexander”, “Careerists” and “The Epic of the Forgotten”.

Areas of knowledge

By using the mural as the basis of an Ivan Vazov-themed AR serious game, there is a potential to **engage players** and **impart knowledge** in several areas:

- Literary – Ivan Vazov's works and his biography.
- History of Bulgaria.
- Art – appreciation of mural art and its value.
- Intangible cultural heritage – spoken dialects, crafts and folklore traditions, music and dance.

Combination of **education** and **promotion**.



NLIV - gamified objects

The player must scan the following objects:

1) Four sections of the mural:



Uncles, 1885



Under the Yoke, 1894



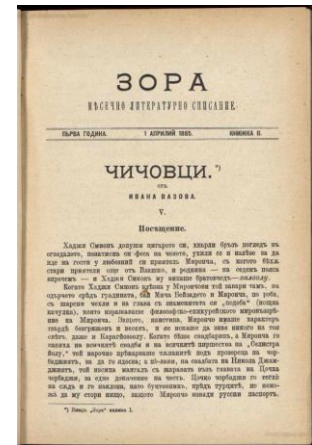
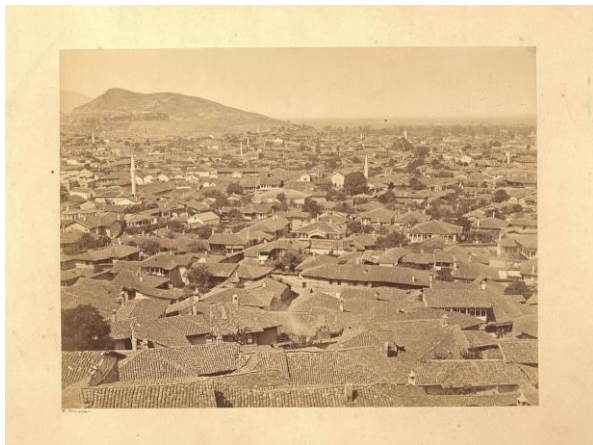
Careerists, 1900



The Epic of the Forgotten,
1881 - 1884

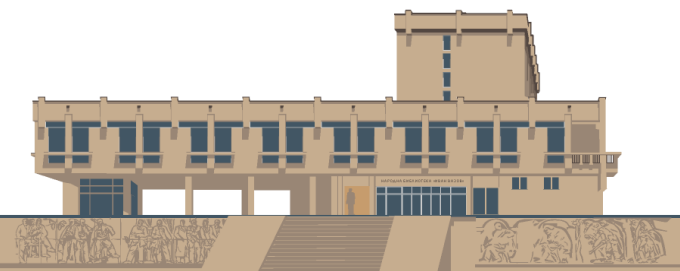
Each section presents literary, historical and cultural information, related to the corresponding work.

2) **Stickers** (6 pcs.), dispersed in the area surrounding the mural. Scanning the stickers displays items and reveals additional information about the cultural heritage, digitized and present in NLIV's online digital library. This is an opportunity to popularize the library's digitization efforts.



4 Conclusion

- Digital technology, VR and AR serious games give opportunities to enhance players' understanding of the content presented in serious games, while also promoting creativity, self-reflection, and active participation.
- The AR serious game Art&Fact provides a means of integrating the digitized collections of various cultural institutions through a multidisciplinary and user-centered approach.
- Integrates the cultural treasures of Plovdiv into a digital ecosystem with the goal to bring together various materials and digitized collections, artifacts, textual resources, and locations in order to improve their accessibility and promote their significance.



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THANK YOU! QUESTIONS?

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