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Augmented Reality Navigation System for Commercial Spaces

Report

by

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Abstract

The use of mobile augmented reality by consumers, and research in the field has become more prominent in the last decade. This has allowed for completely new approaches in solving current problems using this technology as there is a year-on-year increase on smartphone users across the world.

This proposal presents the use of augmented reality in museum navigation on mobile devices. After conducting stakeholder research, there were clear issues presented by current solutions on the market through the form of paper maps. Augmented reality library research was conducted on various platforms to find the appropriate toolkit for the proposed system, and UI/UX prototyping prioritised key design aspects of the system. Following this, the technical architecture and user stories are defined through the model-view controller architectural pattern, along with technologies to be used during implementation. Methods and approaches to implementation are outlined, namely through the agile methodology along with consulting various testing methods.

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Appendix A

User & Stakeholder Research

Appendix B

User Stories

B.1 Use Case Model

Two scenarios have been taken into account, where the user gets lost in the museum, and the user wants to explore the museum. When a user is lost, they need to enter their destination where the app will receive their current location, and find the quickest route from the user's current position. The user follows that navigation until they arrive at their destination. For the exploration, the app will show the details where user know what they going to see in the museum.

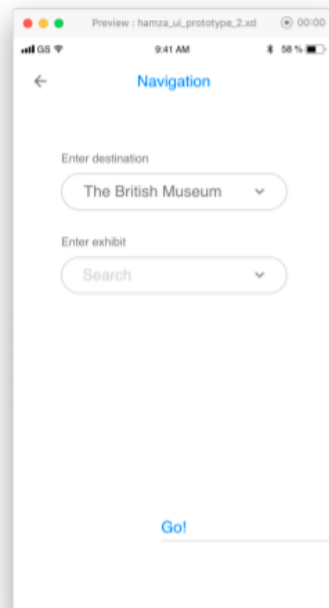
B.1.1 Activity Model

This is based on the back-end of the application for example when the user searches about the museum, this history saved in the server where if the user wants to go to the same place then they can use our function called past visit.

B.2 User & Acceptance Stories

This will describe what will be achieved once the application is ready to be used by the user. A diagram has been created based on different scenarios where it can be found if the application has achieved the user needs.

Exhibit A to Exhibit B



User want to go from Exhibit A to B

Enter your Destination

Select your Exhibit

Once adding all the information press on Go

The app will calculate the quickest route.

User will see a real-time camera navigation on their screen.

Figure B.1: Going from point A to point B

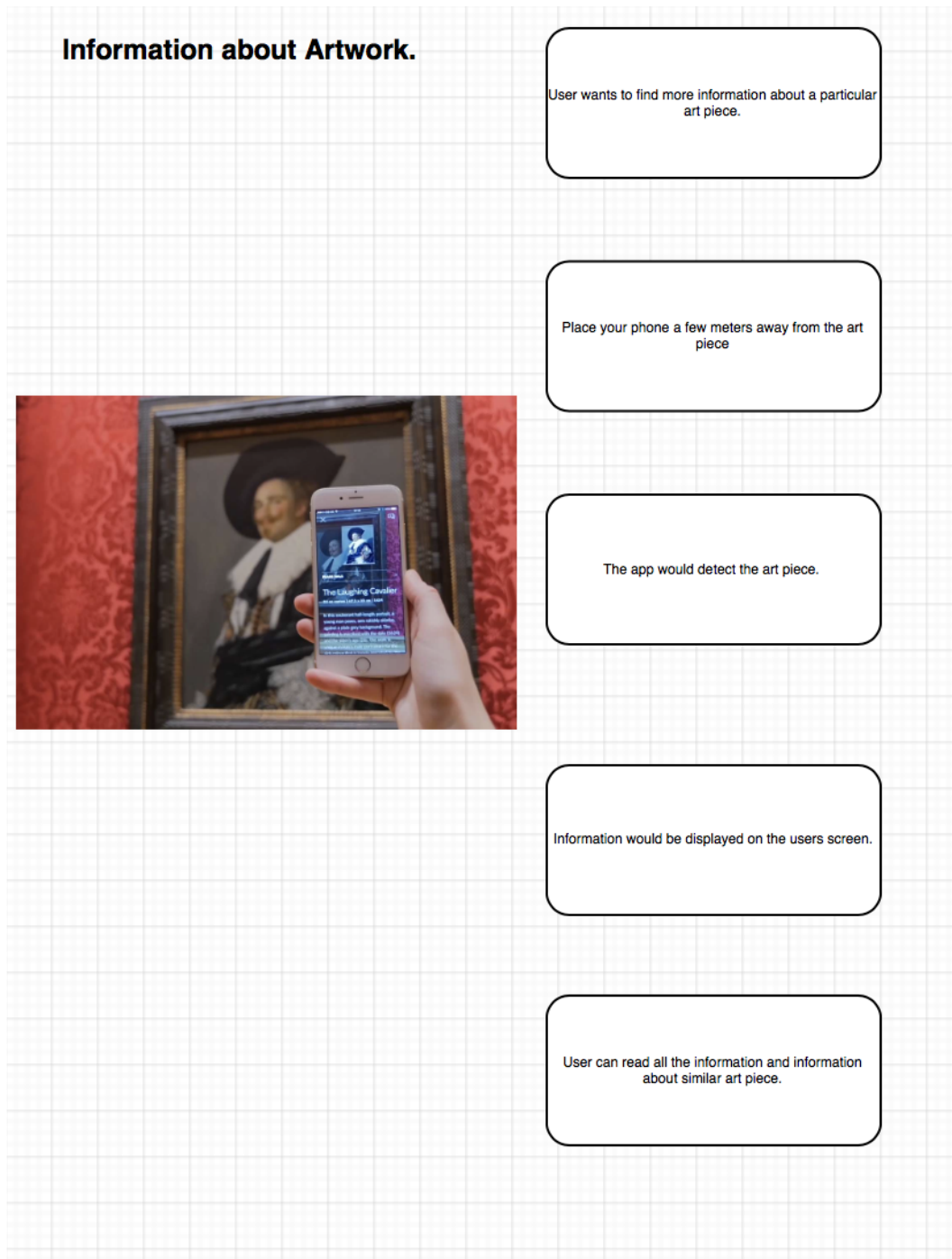


Figure B.2: Getting information from exhibition

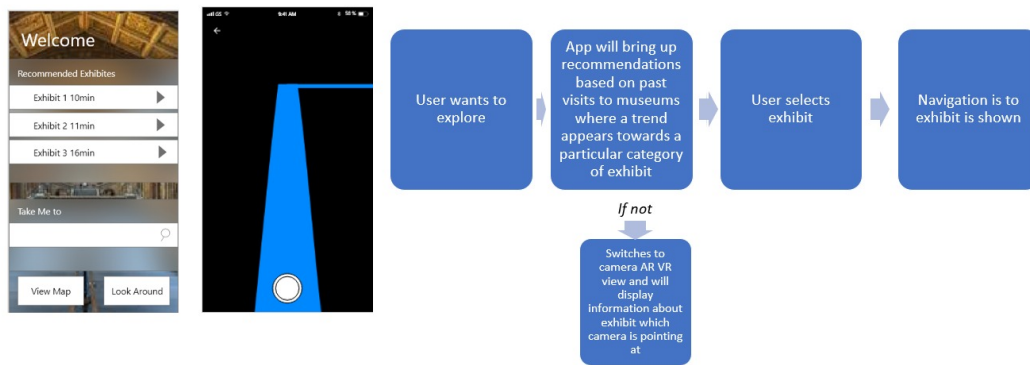


Figure B.3: Exploring the museum

Appendix C

Documentation Plan

C.1 Introduction

This documentation plan outlines the strategy for creating all documentation associated with the software release. This document is addressed to project team, and supervisors to inform them about the documentation efforts that is undertaken for the release.

C.2 Scope

The documentation plan includes the development of updates to all users and developers that are required for the software release. Specifically, it covers the creation and updating:

- User guides
- Product website
- Release notes

Scope of the development activity providing updates to the above documents. These activities requires the involvement of user testing.

C.3 Assumptions

It is assumed that readers of the document are familiar with the previous stages to the project and the associated strategies in place. It is also assumed that the required resources will be available to achieve the objectives of the plan, and that there are no risks other than those identified in the section on Risks.

C.4 Constraints

Constraints on this documentation project are the available time from the resources as outlined at the start of the project along with the product delivery schedule. Changes or delays in product delivery will affect the documentation plan.

C.5 Existing Documentation

This document should be read in conjunction with:

- Proposal
- Testing plan
- Gantt chart
- Application release notes

C.6 Documentation Specifications

C.6.1 Platforms

All documentation is accessible on all platforms via a PDF, and on all browser-compliant platforms.

Milestone	Delivery Date
Implementation Ends	4th March 2019
Updated files to reviewers	6th March 2019
Initial review complete	29th March 2019
Revisions complete	22nd April 2019
Review Complete	25th April 2019
Program and Report Release	29th April 2019

C.6.2 Distribution & Delivery

PDFs of all documentation will be available on the product's website.

C.6.3 Terminology

Terminology will be maintained throughout the documentation as of the proposal document.

C.7 Process & Schedule

C.7.1 Activities

The following activities will be undertaken to produce the documentation:

- Creating indexes for user guides.
- Merger of all application notes from previous releases into guides.
- Documenting source code and approaches.
- Creating testing documentation.
- Creating release notes.
- Creating read me files for each component.

C.7.2 Milestones

Given the diversity of activities, and information streams, estimated milestones are based on the current availability of required resources:

C.7.3 Change Control

Change control for documentation is similar to changes in the source code:

- During documentation development, changes and error corrections are communicated directly with the appropriate author.
- After the end of the implementation phase, changes or corrections are communicated in the same way as above, but the author is responsible for prioritizing the requested fixes to determine which ones should be made in the remaining time before release.
- Major documentation changes shall be treated the same as bug releases, and will be handled in conjunction with the next applicable major release.

C.8 Risks

The risks identified have a potential to affect the delivery schedule:

- Due to the volume of changes and enhancement to the product throughout the development process, so long as the scope has been correctly identified, this document can be time appropriate to all of the development activities.
- If there are changes to the scope, the depth of coverage of the documentation may be amended, or the target date extended.
- Delays in turnaround of reviews prevent on-time delivery. To reduce this risk, authors of the document will have as much advance notices as possible of the requirement for a review.

C.9 Issues

None found at the time of publication.

Appendix D

Testing Plan

Appendix E

Deployment Plan

Appendix F

Testing

Appendix G

User & Stakeholder Feedback

