Augmented Reality Guide for Children in Museums
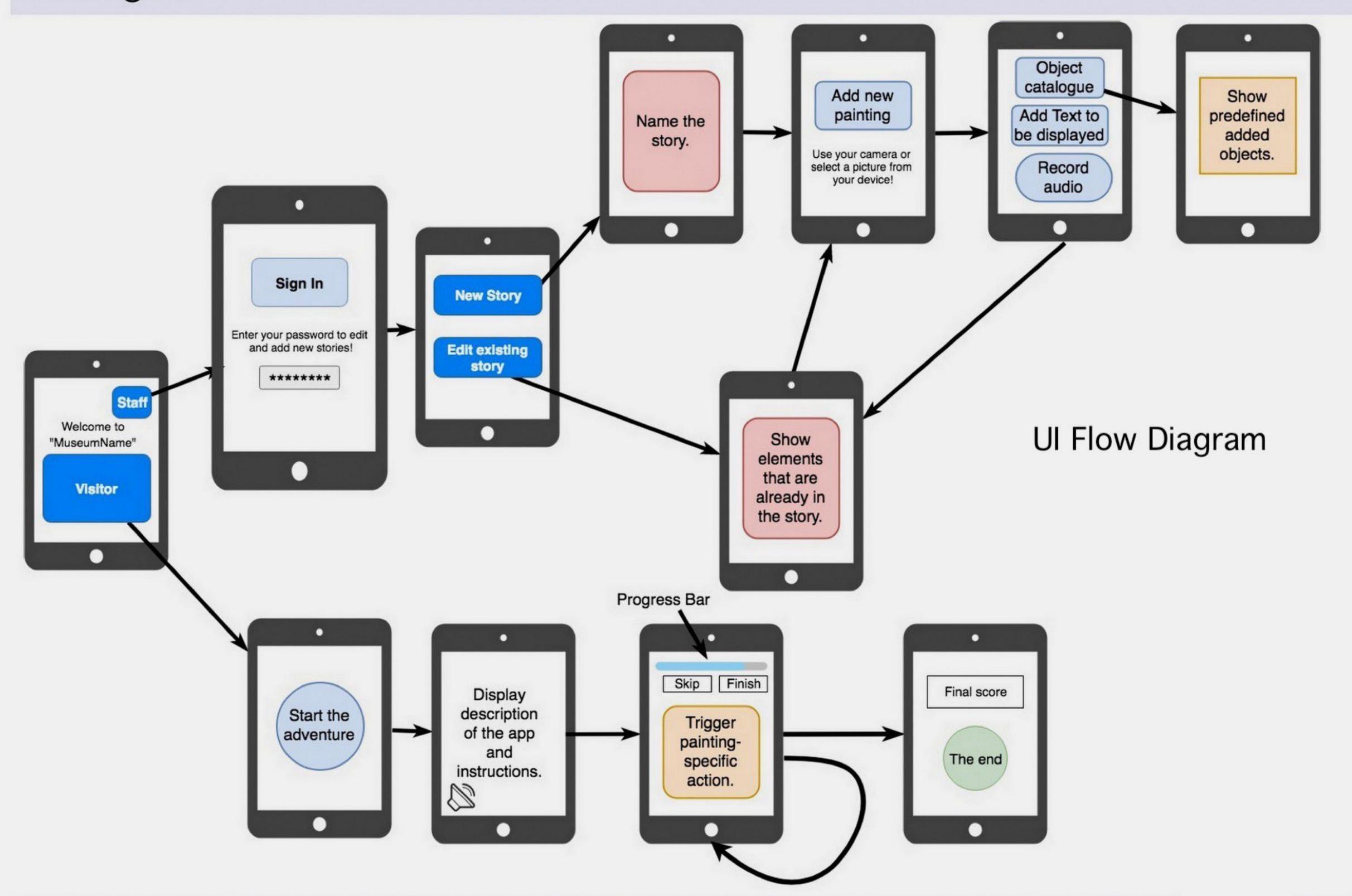
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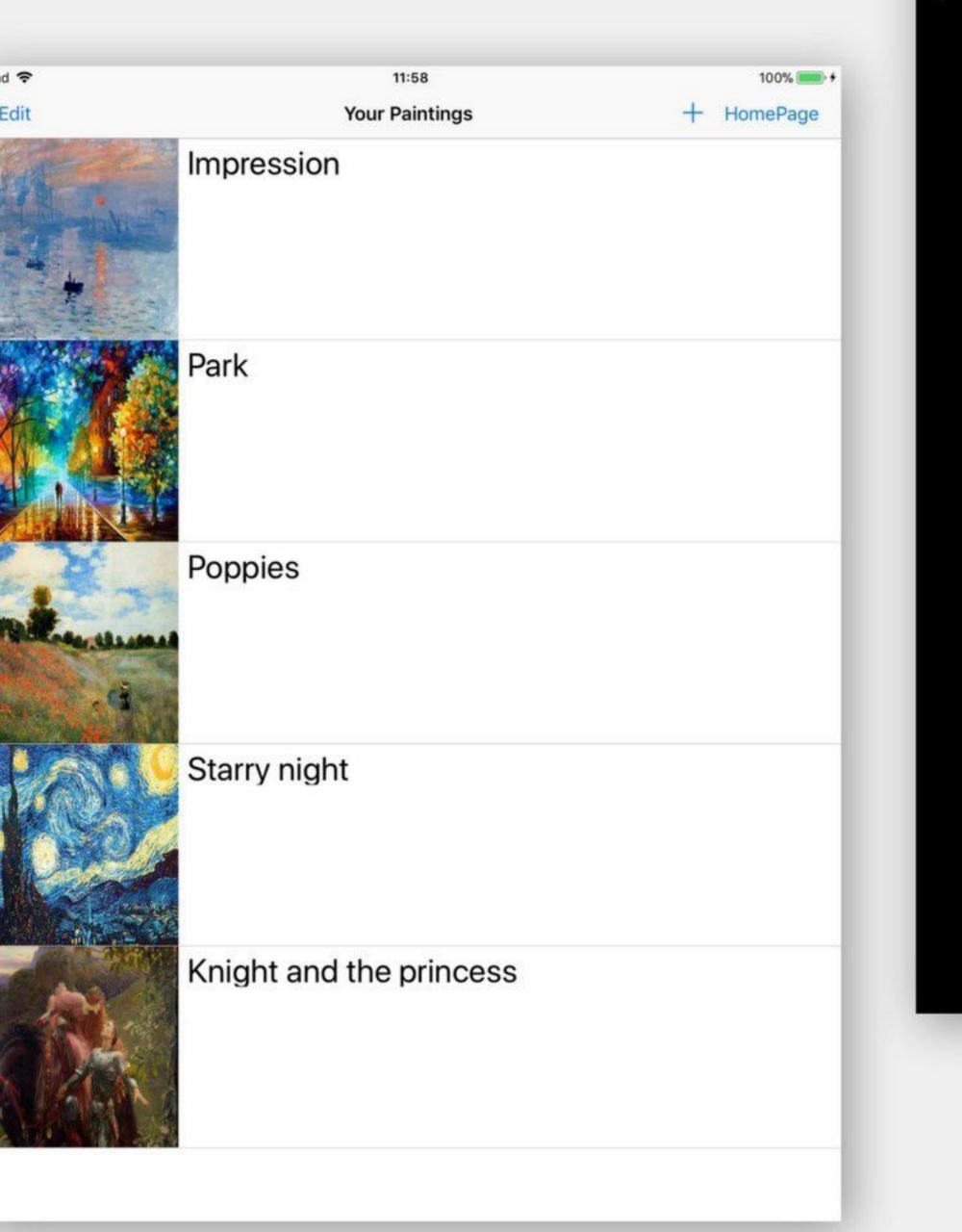
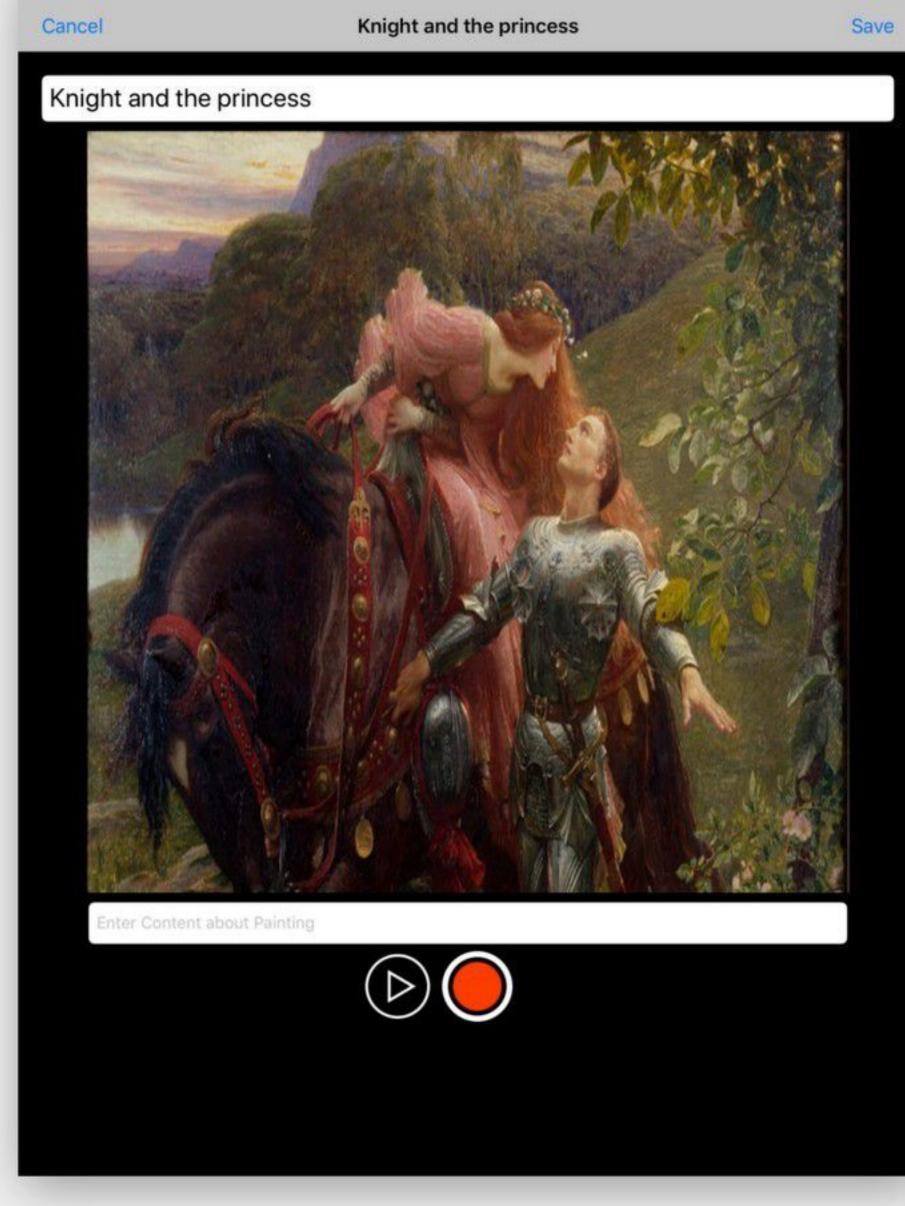University of Bristol, Department of Computer Science

Introduction

The main purpose of this enterprise project is to develop an application for children to teach them about art in an interactive manner while guiding them through a museum or art gallery. Art is an important part of our culture, from an early age we are exposed to it, but children often find visiting galleries uninteresting. A solution to this problem would be an application that allows them to interact with the paintings providing a treasure-hunt style experience during which they complete different tasks.

The application has two user interfaces, one for the museum workers and one for the children to interact with. The museum workers can add content to the stories or create an entire new story by adding paintings, recording audio and choosing animated 3D objects from the object catalogue.

UI Flow Diagram

Story overview

Story element

1. Project Outline

The app will have two main parts:
1. Interface for the children to interact
   - Short description of the app and ways to interact with it
   - Tasks triggered by paintings that are communicated using Augmented Reality and audio recordings
   - A final score based on time and completed tasks
2. Interface for the museum staff that can be used to create new stories and edit existing ones
   - Password protected
   - Option to either add or edit an existing story
   - Intuitive way to add paintings from gallery or using camera
   - Audio recordings
   - AR object catalogue

3. Preliminary Results

After discussing the idea with several people who work in education, they were confident that the children would find this app interesting and they would want to try it. There was useful feedback on the initial plans and interactions with paintings both from the children and teachers that helped in refining the story-line.
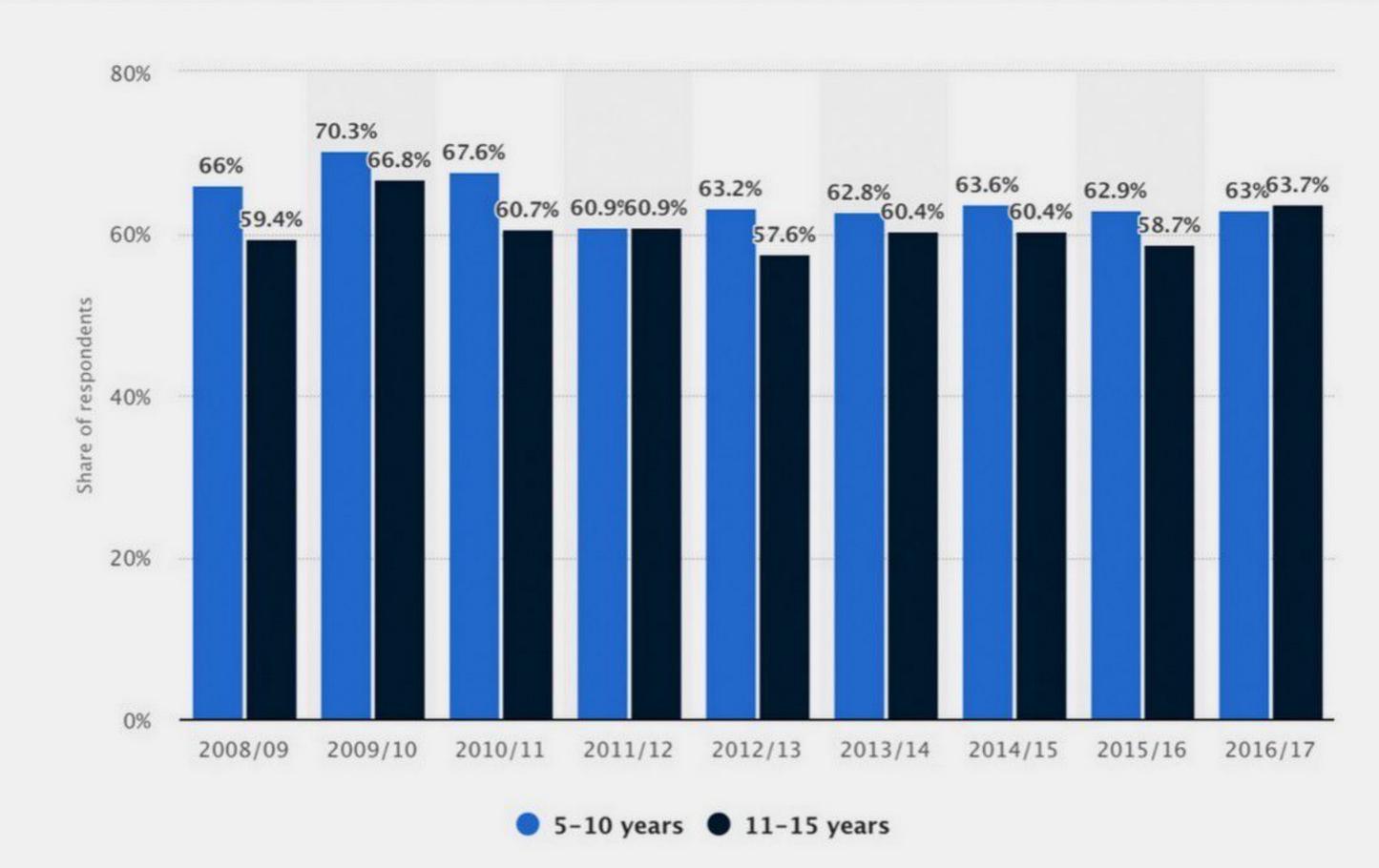

Figure: Share of children who visited a museum in England from 2008 to 2017 in the last year

2. Progress and Status

Completed:
- Simple app that can be extended as needed
- Painting recognition and object anchoring to paintings
- Story-line plan appropriate for children
- Editing story (painting, audio, text)

Future tasks:
- Implement story-line
- Design main character
- Build AR object catalogue
- Log-in for museum staff
- Scoring system and ranking
- Back-end web server

4. Business Plan

- Target market: Museums/Art Galleries
- Target users: Children
- Unique selling points:
  - Provides means to interact with paintings
  - Gamification
  - Easy way to add content without any programming skills

Painting triggering character to appear pointing out interesting details and giving clues for the next task.

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