Museum Assistance Program Proposal

Interactive Timeline Software

Tuesday January 17 2023

COURSE
COSC 4P02

GROUP MEMBERS
STEVEN SABHARWAL | 6537484
REET CHAHIL | 6465314
EVAN GALEA | 6477285
YANNICK DE CALUWE | 6418396
GEORGE BARAKAT | 6429161
HENRY TU | 6464143
ARSHDEEP SINGH | 6837827
FAHAD UMAIR | 6797658

Objective

Explain the Problem

Conventional physical museum information mediums are limited in the amount of information they can display. This can in turn limit both the amount of info a museum can provide, and the amount of info a visitor can learn about a particular section or topic. Another problem with conventional displays is that a static, un-interactable museum system forces museum visitors to organize information in their own head. This may lead to trouble understanding the order of events and how they affected the history of an object or topic. Such a timeline will require the system to display video, text, and images.

Objectives of the Program/System

The program/system should provide a way for museum visitors to easily discover exhibits or artifacts of interest organized by their date. It needs to allow users to interact with the timeline to explore details of different exhibits/ artifacts on the timeline without needing to actually physically travel to the location. This includes accessing integrated multimedia elements such as videos and images. It should be accessible to all visiting users on any device they may be carrying. This would best be facilitated by a responsive web application.

Importance and Overall Description

The interactive timeline helps visitors experience exhibits by guiding them through a sequence of events in history. it will display view videos, images, and text that educate visitors on events in a chronological order. This improves their understanding of various time periods and helps them easily traverse a chain of events.

The interactive timeline also provides a preview of exhibits that potential visitors will see in the museum. This helps visitors develop a foundational knowledge and understanding of the exhibits before they view them in-person. This will also reduce the amount of assistance the museum staff must provide for the visitors.

Visitors may view the interactive timeline on their own computers or within the museum via their website. This helps the museum attract visitors to the museum and helps the visitors determine what exhibits they are interested in exploring.

Administrators will be able to add and order objects in the system by specifying a date. Once the date of an object is specified, the object will automatically be slotted into the correct location of the sequence.

The Software Process

This project will be developed following the scrum software process (agile). This will allow for each person to do their own work while also, encouraging discussions during the sprint meetings. Weekly sprint meetings will also allow for team members to get updates on where everyone and the project is at. Sprint review meetings will be held to demonstrate the progress we have achieved so far after the given sprint. The process will allow for easy changing of our program requirements throughout the process by simply updating the product backlog accordingly. Which will be very useful since we are not very certain on all the specifics of the software yet and will likely want to change things once development has started. Descriptions of each scrum role can be found in the following section along with a list of who is in each role.

Frameworks and Technologies

To provide a solution to the problem described above in our objective, we plan to use *React*, *Node.JS*, *Firebase*, *and other typical web-technologies (HTML*, *CSS*, *etc)* to create a responsive-website to provide interactive timeline functionality. The React JavaScript framework will be used for handling front-end JavaScript functionality of the site, which will be important for user interactions. Node.JS will handle back-end logic as well as communications with APIs/Databases that we employ in the website. Firebase is an API that can facilitate external hosting of our Database as well as authentication for administrative purposes.

System Testing

In order to streamline the testing of our program we will need to develop automate-able tests at the backend level and the frontend level of the system. In order to test the frontend/UI of the system we plan on using ***Selenium*** which allows us to 'record' interactions with the UI and observe the outcomes of our interactions to ensure consistency and correctness. In order to test the backend (React and Node.JS functionality) we will use the ***Jest*** testing framework. We can use Jest to ensure that the

data we pass to and from our website is correct, and that our API calls are functioning appropriately.

Group Members and Roles

1. **Scrum Master:** In charge of creating and establishing development teams. Establishes sprint goals and facilitates communications between sprint teams. Documents scrum meeting discussions and progress of the project during sprint reviews.
    a. **Steven Sabharwal**

2. **Product Owners:** Develops and explicitly communicates the product goals. Creates and clearly communicates/documents product backlog items. Orders/organizing product backlog items for use in sprint planning.
    a. **George Barakat**

3. **GitHub Repo Administrator:** The first point of contact for resolving merge conflicts. Ensures that the necessary files are present within the repo for each submission stage.
    a. **Reet Chahil**

4. **Developers:** Focused on development of the project. Will later be divided into front-end and back-end developers when appropriate to do so.
    a. **Evan Galea**
    b. **Arshdeep Singh**
    c. **Fahad Umair**
    d. **Henry Tu**

We will all be responsible for sprint planning and development of the project software.

Project Timetable and Meeting Schedule

The team will have weekly scrums on tuesdays for 1 hour to facilitate progress on the following deliverables timetable:

Project Proposal Submission (This Document's Completion)	01/17/2023
Initial Product and Sprint Backlog Submission	01/31/2023
Start of Development	02/01/2023
Scrum Meeting #1	02/07/2023
Scrum Meeting #2	02/14/2023
Sprint Review #1	02/19/2023
Scrum Meeting #3	02/21/2023
Scrum Meeting #4 (Reading Week)	02/28/2023
Progress Report and Review Meeting *#1 Due*	02/28/2023
Sprint Review #2 (Reading Week)	03/05/2023
Scrum Meeting #5	03/07/2023

Scrum Meeting #6	03/14/2023
Sprint Review #3	03/19/2023
Scrum Meeting #7	03/21/2023
Scrum Meeting #8	03/28/2023
Progress Report and Review Meeting *#2 Due*	03/28/2023
Sprint Review #4	04/02/2023
Scrum Meeting #9	04/04/2023
Scrum Meeting #10	04/11/2023
Sprint Review #5	04/16/2023
Scrum Meeting #11	04/18/2023
Progress Report and Review Meeting *Final*	04/20/2023