

Curate My Community


By


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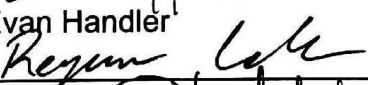
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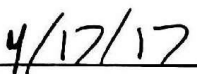


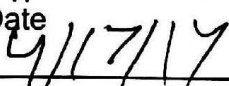
Blake Stewart


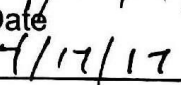
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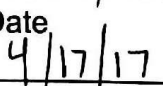
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Date


Date


Date


Date

Curate My Community

for

Cincinnati Museum Center

Prepared for:



Curate My Community a part of the Cincinnati Museum Center

Prepared by:

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Students of

University of Cincinnati

College of Education, Criminal Justice, and Human Services

School of Information Technology

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ABSTRACT

Curate My Community is a non-profit organization within the Cincinnati Museum Center. There are currently six exhibits around the Cincinnati area. The museum center has captured the rich and incredible, natural and manmade history within these exhibits. Our team has developed an iOS mobile application using Firebase, Apple Maps, and social media integration along with a web server backend, using .NET framework, and MySQL, that allows these exhibits to be explored in a new way. Once a user has installed our application, they have access to exhibit locations, exhibit information and any upcoming events in the area. The web backend gives administrators access to add new hosts to create new communities with exhibits inside of them. This application gives interested users the ability to easily educate themselves about the science and history of the Cincinnati region, as well as the possibility to add more hosts in the future.

1. PROBLEM STATEMENT

1.1 Introduction

The Cincinnati Museum Center wanted us to create an interactive application that engages those who attend exhibits around the city. There are numerous exhibits throughout Cincinnati apart of Curate My Community. Curate My Community is a handpicked collection of exhibits produced by the Cincinnati Museum Center. These exhibits are in various locations throughout town and each exhibit contains its own unique story. We are building an iOS application to allow for more engagement with the Cincinnati Museum Center. More specifically, the communities within Curate My Community that are limited to the Cincinnati area.

1.2 Project Description

We are creating an iOS application that lets users check out the communities and exhibits that exist within the Cincinnati area. Within this application, users will be able to follow the tweets posted by the Cincinnati Museum Center. There is a second part to this project which involves the curators. The curators will be able to go into a web-based backend to create, edit, and monitor communities and exhibits. Curators will have the essential tools to create new communities and exhibits.

1.3 Problem

The problem Curate My Community faces is awareness. Therefore, there is a shortage of knowledge about the history of the exhibits within the Cincinnati area. Also, many people are not aware of these local communities and exhibits, which gives us the opportunity to create an application to improve engagement and spread awareness.

1.4 Solution

The solution to Curate My Community's awareness problem is designing and implementing an application that will encourage users to go out and explore local exhibits around Cincinnati. This application gives the user information about the communities and exhibits in their area. This greatly expands the user's knowledge of the history of Cincinnati which is provided by the Cincinnati Museum Center. The solution also gives the ability for curators to add, edit, and delete communities and exhibits. Each community they create will belong to an area where exhibits reside inside them.

1.5 User Profile

Table 1: User Profile for Curate My Community

User Profile Form: Curate My Community
<p>Potential Users</p> <p>Cincinnati Tourists, Cincinnati Residents and Curate My Community Curators</p>
<p>User Interface Experience</p> <p>On the backend, curators and administrators have general knowledge of data entry through forms including social media and interactions on the exhibits through geofenced data. The user needs to know how to read/explore google maps and minimal knowledge of Apple's operating system. Typical social media experience.</p>
<p>Task Experience</p> <p>The backend user will be comfortable with creating the information documents for the exhibits in the data entry forms on the web server. The user will be comfortable with creating their own tour through google maps, share their experiences through social media, and redeem rewards at local stores.</p>
<p>Frequency of Use</p> <p>The application will be used mostly by tourists visiting the Cincinnati area after business hours and weekends. Whenever a new exhibit gets created or there are upcoming events the backend will be used to enter this new data to be displayed on the application feed.</p>
<p>Design Requirements</p> <p>Simple UI with easy controls for adding information. A good color scheme and ease of use.</p>

1.6 Use Case Diagram

Figure 1 below depicts the Use Case Diagram for Curate My Community.



Figure 1. Use Case Diagram

2. PROJECT MANAGEMENT

2.1 Budget

TABLE 2 represents the project budget. This depicts the costs of \$16,800, but this project is not for profit so the cost is \$0. This project is mainly for our experience but the table depicts what we estimate it would cost.

TABLE 2: Project Budget

No.	Item	Units	Unit Price, \$	Line Item Total
Networking				
1	Labor	60	\$60	\$3,600
2	Hosting	1	\$20/month	
Software				
3	Labor	120	\$60	\$7,200
Supplies				
4	MacBook Pro Laptops	3	\$2,000	\$6,000
	Subtotal			\$16,800
	Total			\$0

2.2 Deliverables & Objectives

Table 3 below presents the deliverables and deadlines of the project.

TABLE 3. Project Objectives and Due Dates

PROJECT MILESTONES			
Planning Milestone	9/30/16	User-Interface Milestone	11/20/16
Setup Milestone	10/17/16	Presentation Milestone	12/5/16
Software Milestone	11/8/16		

2.3 Project Schedule

Figure 2 is our project Gantt chart.

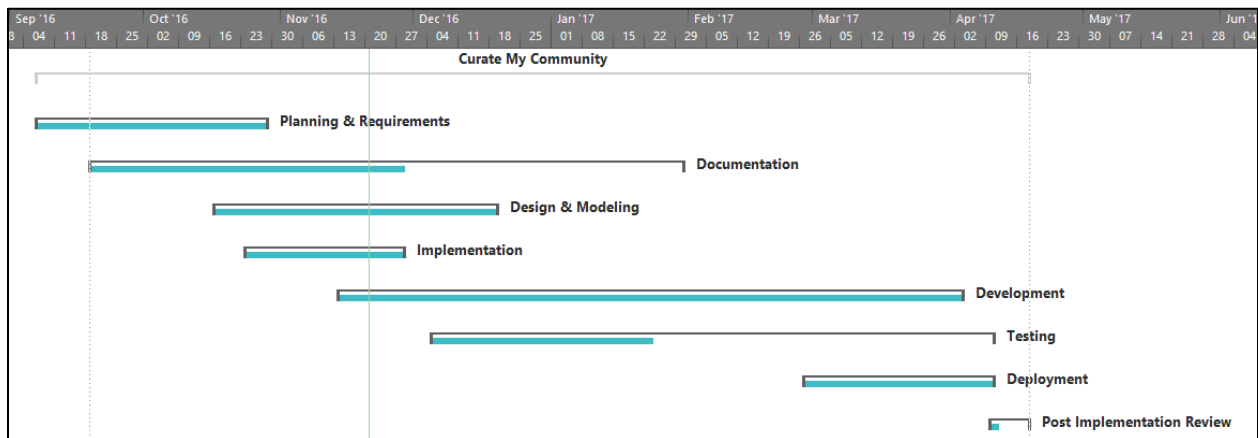


Figure 2. Gantt Chart

3. TECHNICAL ELEMENTS

3.1 Frontend

The front end is an iOS application built with swift. This application connects to our API and pulls exhibits from the administrative backend. This front end will have Apple maps integration to show you where exhibits are located, and what people are saying about them.

3.2 Backend

Our goal is to create a C# web server backend to support administrative duties and allow administrative curators the ability to view people who are interacting with their exhibits. We also want to give these curators the ability to interact with data they receive from said users. This administrative experience is separate from the user experience and only for the curators of communities.

3.3 Database

We created a database in MySQL that is used for our backend to drive data to our API that feeds into the front end. We have built the database and API in mind to allow more than one host to create communities and exhibits. Currently we only have one host.

4. TESTING

4.1 Overview

The following section will describe the plans regarding the Curate My Community testing methodologies. These plans are an outline for the iOS and C# test requirements.

4.2 Scope

Our scope will contain testing for both C# for the administrative backend as well as our iOS mobile application. Our testing plan will be composed of a series of tests to ensure that our application(s) comply with developmental standards.

4.3 Objective

Our objective is to create a series of tests that will allow us to ensure the safety and integrity of any Curate My Community applications. We will need to develop an in-depth testing plan that will accommodate for any dangerous programming practices as well as any unidentified bugs. The intention of this test plan is to encapsulate all objects at a more detailed level to ensure our applications will handle objects as we expect them to. Any objects that do not meet the testing requirements will fail and easily allow us to identify problems from a testing standpoint. This test plan will allow developers to quickly and easily ensure the integrity of the code they are working on.

4.4 Procedure

The following procedure will contain the steps to create, maintain, and change testing requirements as the development cycle is completed.

- Create a reliable test environment to ensure that all tests and test data will be consistent throughout the testing process.
- Once a reliable environment is created, we must create unit tests for all test cases and any scenarios that will arise.
- After all tests are created, we must then create documentation to ensure that the results of our tests match the outcomes we receive.
- Any results that come back contrary to what we expect will need to be documented and changes to that test case must be made unless a new test case is needed.
- Any documented failed unit tests or test scenarios will then be put into a weekly report, which we will address during the development period.

The following includes the testing areas required for our application(s).

4.5 .NET web application

- Stability testing
 - Stability testing will ensure that our application work as intended and will not crash, freeze, or work in a way that is not intended. A

stable application is considered one that passes all stability test cases.

- User interface testing
 - User interface testing will encapsulate all functionality that will be presented to the user. An application that passes all user interface tests will be considered a fully functional user interface with no exceptions.
- Functionality testing
 - Functionality testing will ensure that any functionality that is not presented to the user through the user interface will comply with the same developmental standards as unit testing and test scenarios.

4.6 iOS mobile application

- Stability testing
 - Stability testing will ensure that our application work as intended and will not crash, freeze, or work in a way that is not intended. A stable application is considered one that passes all stability test cases.
- User interface testing
 - User interface testing will encapsulate all functionality that will be presented to the user. An application that passes all user interface tests will be considered a fully functional user interface with no

exceptions.

- Functionality testing
 - Functionality testing will ensure that any functionality that is not presented to the user through the user interface will comply with the same developmental standards as unit testing and test scenarios.
- GPS testing
 - Geospatial testing will encapsulate the user in the real world and prevent scenarios where the user is presented with an invalid representation of where they are located. It will also ensure that the users are seeing the correct locations of geofenced data.

4.7 Schedule

We are planning on testing once a week to make sure that our application is functioning as planned from the frontend to the backend. We need to ensure that we have a quality application. At the end of the deliverables for the week we will run unit tests to insure this.

4.8 Backend(.NET) Test Cases

Stability

Team Member	Explanation	Pass/Fail	Date
Blake	Test stability of application during regular use	Pass	4/09/17

User Interface

Team Member	Explanation	Pass/Fail	Date
Blake	Ensure the curators/admins have a smooth experience navigating	Pass	4/09/17

Functionality

Team Member	Explanation	Pass/Fail	Date
Blake	Admin can login/logout successfully	Pass	4/09/17
Blake	Curator can login/logout successfully	Pass	4/09/17
Blake	Add/remove community and exhibit information successfully	Pass	4/09/17
Blake	Web Api functionality	Pass	4/09/17

4.9 Frontend (IOS) Test Cases

Stability

Team Member	Explanation	Pass/Fail	Date
Evan Handler	Log in handles tokens through firebase correctly	Pass	4/10/17
Evan Handler	Logout function	Pass	4/10/17
Evan Handler	Restful calls are handled if there is an issue or if successful	Pass	4/10/17
Evan Handler	Create user works without error	Pass	4/10/17

Front-End User Interface

Team Member	Explanation	Pass/Fail	Date
Evan Handler	Ensure the user experience is smooth	Pass	4/10/17
Evan Handler	Selecting community	Pass	4/10/17
Evan Handler	Selecting exhibits	Pass	4/10/17
Evan Handler	Social media displays and scrolls	Pass	4/10/17
Evan Handler	Maps display on communities	Pass	4/10/17
Evan Handler	Maps display on exhibits details	Pass	4/10/17
Evan Handler	Log in view respond to input and display correctly	Pass	4/10/17

Functionality

Team Member	Explanation	Pass/Fail	Date
Evan Handler	User can login/logout successfully	Pass	4/10/17
Evan Handler	Selecting communities displays correct exhibits	Pass	4/10/17
Evan Handler	Selecting exhibit displays correct exhibit detail	Pass	4/10/17
Evan Handler	App gets correct data and populates properly	Pass	4/10/17
Evan Handler	Social twitter api feed properly displays and functions as it should	Pass	4/10/17

GPS

Team Member	Explanation	Pass/Fail	Date
Evan Handler	Exhibit and Community locations are correctly displayed	Pass	4/10/17

5. CONCLUSION

We created an application that benefits the Curate My Community experience as well as creating the possibility to have more than one host, each with communities and exhibits underneath them. We aim to provide the best user experience by using the latest technologies. This application provides users the ability to interact with and learn about communities and exhibits created by administrative curators on the backend. The curator can create and monitor the application with live analytics provided by firebase. The application has the potential to expand outside the Cincinnati Museum Center allowing additional hosts to create communities and exhibits. This is mainly an informatic application to encourage exposure and awareness of the communities and exhibits in your area. The backend is scalable so we can expand outside just the Cincinnati Museum Center, allowing multiple hosts. The frontend only needs to implement one extra layer to compensate for a multitude of hosts. We built it specifically for the Cincinnati Museum Center and that is what we delivered, but we went an extra step to allow it to be expandable to other hosts.

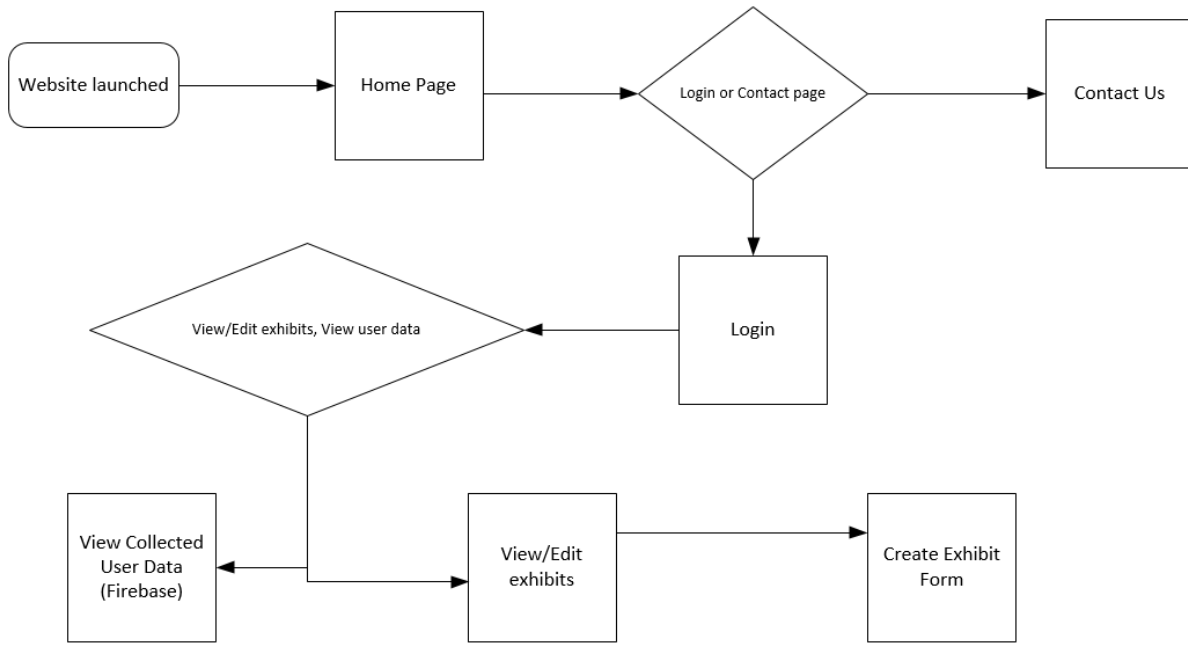
6. REFERENCES



Password hash GitHub used for backend- <https://github.com/defuse/password-hashing>

7. APPENDIX

ASP.NET Backend



IOS Frontend Application Workflow

