Specification Document (D3)

Date: 10/19/20

team name: Golden Geese

project name: NFC website

1. Elevator pitch

The NFC website will provide visitors of the Madison County community towers easy access to more information relevant to the corresponding townships through the use of NFC tags. In addition, users will be able to listen to an audio playback of the information presented on the towers as well as the additional information on the website; thus, sight-impaired people will be able to enjoy the community towers as well. QR codes will be a redundant mechanism to support older devices incapable of NFC reading.

2. Functional requirements (includes Initial Backlog[1])

2.1. user classes

- Admin
- Visitors/Visually Impaired

2.2. tasks

1) A visitor can activate NFC/QR on their phone to connect to redirect to panel's webpage
2) An admin can associate new NFC/QR tags with new panels
3) A visitor can listen to audio descriptions to better understand the information presented on the tower
4) A visitor can read closed captioned descriptions to better understand the information presented on the tower
5) A visitor can navigate to other townships within the application to find out more information(Explore/Home page)
6) A visitor can submit an email to receive a reward for visiting a tower (crk's idea)

2.3. Estimate effort

Task 1: 1 weeks

Task 2: 2 weeks

Task 3: 2 weeks

Task 4: 2 weeks

Task 5: 4 weeks

Task 6: 4 weeks

3. Non-functional requirements

3.1. Security/data-privacy issues

- Certain NFC tags can be reprogrammed to redirect to a different webpage
  - Read-only NFC tags will solve this
- NFC/QR maintenance (malicious users, weather)
  - Lamination, zip-ties
- Website security
  - In-built security options in the framework we decide to use.

3.2. Data longevity issues

- The client will be able to use our application for as long as they like, yet support on our end will conclude when the class concludes. Issues

3.3. Other non-functional requirements

- Can't think of any others feel free to add more here

4. Testing

4.1. **Functional testing**.

For each task we will test our code (when our code is due) using dummy data that would simulate what we would like to see in the final version. We can test the NFC and QR tags as soon as our client gets them. For testing the NFC or QR tags we can use any url and determine if the NFC/QR redirects us to the expected url.

4.2. **Usability testing**.

Usability testing will take place after functional testing. The team will then navigate through the interface to ensure the application does what we intend for it to do. We then can test whether or not our application is accessible to the visually impaired and make changes where they are needed. Lastly, we will have the client navigate through the interface and make sure the application does its intended purpose.

4.3. Other kinds of testing

Once usability testing has been completed, security testing will take place to ensure the NFC tags won't be rewritten, and the QR/NFC tag combination is not easily tampered with. Also, the website itself will be tested so that it isn't trivially tinkered with

Load testing will be done either concurrently with or following security testing to ensure multiple users can access the website contents with minimal delay.

5. Non-executing products

5.1. non-executing products

- Github readme/user manual: help user understand the application to navigate around the user interface

5.2. Estimate effort

- Github readme/user manual: 1 week

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[1] The initial backlog is just the starting point for the project. The backlog must be easily updated, and easily viewed/shared by the team. However, it can be in whatever form (word document, etc.) for this document.