**Second Semester Work Statement**

Project Team:

**Project Name:** We Can Do It

**Project Members:**

Dhari Alenezi

Abdulrahman Alharbi

Elina Do

Andrew Nguyen

**Scope:**

For this project, we will be creating a data management application for the Wichita Police Department (WPD). This application will aid in simplifying the process in which the WPD communicates with citizens when reporting incidents. It will be available on the officers’ work-issued phones. When the citizens are reporting to the officers, the officers are able to fill out a report form on their phones. Depending on the incident, the officers will then be given options for different methods of sending all helpful documents and contact information to the citizen via text, QR code, or e-mail. The important documents are connected to the application through a database. There will also be a website that the officers can access to update the documents, when needed.

This statement of work contains our team’s plans and how we will execute them this upcoming semester. We will be picking up where we left off last semester in terms of implementation and will meet the deliverables required of us by the WPD. Everything will be defined in the paragraphs below.

**Period of Performance:**

We will use the prototype that we have created in the last semester. To test it with the WPD and check the stability and useability of the design. Then we will make changes accordingly, so we get the approval from WPD for the Design.

Week 1-2:

We will be scheduling a meeting with the WPD to discuss the application design we have.

Week 3-10:

We will start meeting the WPD to check on our Design for the application and take notes from them. On what needs to be changed for the design. We will work on finalizing and get the approval from the WPD for the Design. And will be developing the application as we go.

Week 11-14:

We will work on finalizing the application and getting ready for showcase for the WPD.

Week 15-16:

We will work on preparing for the showcase of the application and the presentation for the whole class.

**Tasks and Deliverables:**

1. **Project planning requirements**

| **Task and Deliverable Requirements** | **Descriptions** |
| --- | --- |
| Sketch & Design Mobile Application | Sketch and design the Mobile application prototype according to requirements that were collected and then present to WPD for evaluation. |
| Sketch & Design Web Application | Sketch and design the front-end web app prototype according to requirements that were collected and then present to WPD for evaluation. |
| Web Architecture Design | After receiving feedback, the team will modify the prototype accordingly and present again until satisfied. |

1. **Design & Code the Database**

| **Task and Deliverable Requirements** | **Descriptions** |
| --- | --- |
| Design the database | Design the database by using MongoDB and the documents the WPD provided. |
| Link the database with Backend side | Code the database using MongoDB to link it with the backend side |
| Secure the database | In MongoDB, we will use object modeling for Node.js and securely store and encrypt data correctly. |
| Link the database with the Mobile & Web application | The web-based application will connect to the database to accurately pull up-to-date data that is synced with the mobile application. |

1. **Develop the Backend**

| **Task and Deliverable Requirements** | **Descriptions** |
| --- | --- |
| Develop the software architectural for the backend side | We will create and divide files and folders so that it is easier for us to develop the application, and create the API by using the Node.js. We will start designing our backend side project based on MVC software |
| Publish the code to the GitHub | We will use github to cooperate and construct the code together. |
| Code the HTTP endpoints | Start developing and structuring the HTTP endpoints (REST API), such as fetch data, sign in users, sign up new users, and etc... |
| Secure the backend side | We will prevent NoSQL Injection, and the  XSS Protection and security Headers. Also, we will make sure that the APIs are secure. |
| Link the backend side with the Database | We will link the backend side with the database by using Mongoose. |
| Publish the backend side | We will publish the backend side to the Cloud server to host the server. |

1. **Develop the Mobile Application**

| **Task and Deliverable Requirements** | **Descriptions** |
| --- | --- |
| Develop the software architectural for the Mobile application | We will start designing the mobile app project based on MVVM software architectural patterns. Also, to develop the app we will use the Flutter SDK. |
| Start coding the User Interface | We will program all user interfaces such as screens and application components such as buttons, text fields, etc, and make sure that the application is beautifully designed and easy to use. |
| Link the Mobile Application to the backend side | We will use the HTTP package inside the mobile app to send requests to the endpoints that we developed on the server. |
| Database caching | We will use the Hive package to store the data locally after we fetch it from the server. Also, we will implement the functionality code to read the PDF files, and cache them inside the phone storage. |
| QR Code (Camera functionality & Generate QR code) | We will develop the QR code scanner and the QR code generator inside the app. |
| Publish the Mobile application | Export the app to iOS and Android platforms. |

1. **Testing Requirements**

| **Task and Deliverable Requirements** | **Descriptions** |
| --- | --- |
| UI design | For the UI design we will review our design to the WPD and get their feedback on the design. So, we can make changes accordingly using Adobe XD. After that we will develop the app using the finalized design that was approved by the WPD. |
| Testing the frontend side | Once the development process is complete, the app will be deployed to test the functionality of the app and to ensure the app works according to the specified requirements. |
| Testing the backend side | We will test the backend side, and handle the server errors. |

**Work and Performance Schedule:**

Rough estimate of week by week schedule:

* **Week of 9/12** - Review design of the Mobile application prototype according to requirements that were collected and then present to WPD for evaluation.
* **Week of 9/19** - Start code the backend side with the frontend side.
* **Week of 9/26** - Design the database by using MongoDB
* **Week of 10/17** - Finish developing and structuring the HTTP endpoints (REST API).
* **Week of 10/24** - Start to code the Webview page & mobile application.
* **Week of 10/31** - Finish all user interfaces such as screens and application components.
* **Week of 11/7** - Link the Mobile Application to the backend side.
* **Week of 11/14** - Testing the mobile application & the backend side.
* **Week of 11/21** - Publish the backend side & the mobile application.
* **Week of 12/1** - Finalize presentation.

**Acceptance Criteria:**

With testing out our applications, we will be using two different methods. The first method is testing the phone application and web application to make sure it functions as expected with the police department and pulling all correct data/information. The second method we will be conducting to test our application is using it through a variety of different scenarios and different trials as the police would in face-to-face interaction.

**Phone Application:**

* Verify that the app is able to generate a QR code that opens up to a website that displays information specifically regarding the type of case chosen
* Verify that the application is able to handle situation when it goes into environment without internet/phone signal or loses signal
* Verify that it is easily navigable by officers and users

**Web Application:**

* Displays the required documents and information tailored to each case or type of crime scenario
* Verify that it Is responsive across all platforms from iphones to desktop
* Verify that the information is easy to access and easy to read
* Verify that officers are able to customize the information shown to victims
* Verify that the web app is able to handle multiple individuals accessing the site at the same given time
* Verify that it is easily navigable by officers and users

“I have read the entire work statement and it meets my personal quality standards” Signed by **Abdulrahman Alharbi**

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