**Landfill E-Forms**

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**Introduction**

For our project we worked with William Andrews from the Department of Sanitation. He works for the city by going to landfills that the city owns and records data that is stored on paper and then later used to check if certain areas need to be brought up to the attention of the repair teams to help critical areas. The city wanted an app that would allow them to store all the data they would record out in the field and have a center point where they would be able to access all the data past and present and be able to see and changes that have occured over time.

 Having all their data recorded on paper was good in a way that they could reference to it later but over the years all the documents have taken up a lot of space and some of the data has been lost or damage due to the conditions of the office in which the data is stored.

 Within this project our team was able to go in and apply changes that the city required in order to accept to begin field testing. We changed areas to help the user see when wrong data was being entered. As well as notification and pop-ups to give the user warnings of what they were doing and helped implement spinners within the app to help inspectors identify the type of equipment the inspector was using depending on the type of data they were recording.

 The benefits of our design is that the user is able to abandon the use of physical paper and use our app to record their data. Another benefit of our app is that the user will be able to look at the data and spot irregularities that should be brought up to repair teams in order for them to take action or change their type of repair process they have already been attempting.

 When it came down to testing we got good feedback that the app was coming along great. The only problems that came up during the testing phase in our second semester was the change of the UI to be more eye friendly when it came to being out in the sun. Because our users would use our app out in the field the screen itself would be hard to see with the colors that had been previously selected.

**Related works and technology**

For this project our team built both an Android and web application so that the dept of sanitation can record and store their data. The Android app was built using Android studios and programmed in Java and XML. The web app was built on AngularJS and Spring. All the data collected from the android device is passed onto the web app using a .json file.

**System architecture**

The Landfill Formsarchitecture is summarized in the Context Diagram (DFD Level 0) given below. A more complete Functional Description is given in Section 2 of this document. The Context Diagram provides the overall structure of the software modules and all its inputs and outputs. The notation used corresponds to that defined for any Data Flow Diagram (DFD).





**Results and Conclusions**

Taking what the department of Sanitation had to start with and what it has now is a huge step forward. Now that they don’t have to solely rely on recording data on paper they are able to have a second copy stored digitally which can also be accessed at later times and this time data won’t take up too much space.

**References**

<https://developer.android.com/studio/intro/>

<https://classroom.udacity.com/courses/ud851>