# Evaluation Assignment 5 – Heuristic Evaluation

## Application: Soil Infiltration

## Team #4: Soil Infiltration

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**02/16/2021**

## Undergrad Design:

This app will be used throughout a myriad of different scientists with all different agro-culture aspects from one single device called a Soil Infiltrometer. A Soil Infiltrometer is a device that will penetrate the ground - it must be conducted in a loamy environment like soil. A user then will pour water through a top funnel that then allows a user to watch it drain through time. A user then will record the time difference (from start) and the recorded volume of water that was lost throughout the process. This is an incremental step that is done in different time based intervals, for example: if a user selects time intervals for every 30 seconds, they will then record the volume lost every 30 seconds until the water drains.

What this application is doing is allowing a user to get more accurate and precise measurements when it comes to recording information. We will build the app so that it will initially allow the user to set the time intervals they want to, then gets notified when the selected time intervals finally come into fruition. When the user gets notified, it will prompt them to enter the volumetric information that the soil infiltrometer shows (please note that the user will have to manually enter the information and the time is still static during the interval). The app will show a table below that will dynamically auto-populate the information and create several different charts and graphs based-off of the recorded/calculated values.

## UI Domain:

This application is a User Interactive website and optimized for mobile viewing. It allows users to get more accurate and precise measurements. This app allows users to store the experimented data and access it in the future. This application also allow users to export data into the excel. The main purpose of this application is to work in remote area and to collect the GEO location in where the experiment being observed.

## Heuristic Usability Principles:

**Visibility of System Status:** The current status of the system should always be visible to the user. The app should provide the clear information of the steps to be followed by user and the user should not find any issue on accessing the app.

**Consistency and Standards:** The app should use consistent language, styles, and behavior across the entire application. In addition, the app should conform to standard behavior for the platform it is running on.

**Error Prevention:** The application should limit possible values on form inputs as much as possible to prevent incorrect data. Error messages should be clear so that users can easily see how to correct input errors.

**Simple Design:** The data that the users are attempting to record are relatively straightforward, so the design should be minimalistic in nature. All the necessary functionalities should be there, but nothing more.

**User Control and Freedom:** There should be a way for users to make changes in case a mistake is made. In addition, users should be given the opportunity to review entered information when appropriate. Like if the location is not recorded exactly how users wanted, there should an option for them to modify it.

**Responsive**: The app should work equally well on desktop and mobile devices.

**Input Control:** Any area where the user can manually enter in data/text in some field, there needs to be some backend control over what they are allowed to enter. For example limiting the length of the string or what types of characters can be entered.

**Feedback:** The application has to submit feedback button which brings out the concerns related to the app from the user. These suggestions might as well include the feedback on search results which might help in improving the application.

## Potential Usability Problems:

- Once the data is recorded, there is no option to update/delete the previous data section. This This violates the user control and freedom principle.
- The app should use consistent language, styles, and behavior across the entire application. Current implementation of buttons says click here, but for the Buttons should describe what it is going to do, so it makes users understand what its gonna do when they click the button. This violates the Consistency and Standards.
- Also in the application running slide, reset button may be confusing to the users, and should describe more what it will do. User may think it would take them home page.
- In the previous test : test1/data gathered slides there is a data graph, location picture, data table and exporting to spreadsheet, also getting GPS location. Will all these together in either previous test : test1/data gathered screen may not be difficult to use on mobile devices?
- As in table data showed in previous data section, a GPS location here is coordinates. For the clear understanding if there is an option to manually enter the location like entering Houghton, will make the users understand the location easily.

## Critical Usability Concerns:

What will happen if app is hanged out in middle of activities? Will we lose the data/entries the user made?

When there is no button to go back to home page in running slide, if the user closes the app and opens it again, will app work seamlessly and will have all old entries entered earlier?

## Scenario:

David, a research student, when the application was running after the timer is started, he wanted to go back to find the previous data. But there is no option of returning to home page since the app is holding with 'Reset' button only and there is no other button to return to home page. Hence, he was in the position to choose 'Reset' button which cleared all the entries. Thus, made him confusing and could not decide him the next steps. This is more of lack of functionality feature. This will lead to a bad user experience.