Video: Open Data Kit Tables

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ABSTRACT

Mobile devices are integral to the workflows of many organizations working in rural or disconnected contexts. Data is often collected on mobile phones and tablets using tools like Open Data Kit (ODK). However, some of the applications require users to revisit and update previously collected data, necessitating easy viewing of stored data. To make it easier for organizations to create flexible information services, we present ODK Tables, an Android tool that allows users to enter and curate data on mobile devices. Tables leverages web tools to make mobile app creation simple. It provides abstractions to make the process straightforward and allows app designers to access data through a JavaScript API. App designers can create a custom app using only a small number of HTML and JavaScript files. This facilitates the creation of a custom user interface but leaves storage, data management, and synchronization to the framework. The result is a fully featured Android app based on established web-based tools with full support for disconnected operation.

Categories and Subject Descriptors

K.6.3 [**Software Management**]: Software Development

General Terms

Management, Design, Human Factors.

Keywords

ICTD, mobile app, database viewing, synchronization, disconnected operation, Open Data Kit, ODK.

1. DESCRIPTION

Mobile computing devices have emerged as an increasingly indispensable tool for many organizations working in emerging regions. The devices serve as a mode of data collection, as well as the main data-browsing platform in the field. Tools like Open Data Kit (ODK) seek to make this process easier by providing a suite of tools designed to facilitate mobile data collection and management [1]. As mobile devices become more prevalent, organizations desire customizing these tools to create entire information management systems where they can control user interactions with data. The ODK 2.0 suite of tools has been designed with this goal in mind, allowing users to create highly configurable and customizable workflows and systems on mobile devices [2]. ODK Tables is a tool in the ODK 2.0 tool suite that focuses on make mobile app creation simple [3].

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Tables is motivated by the insight that many mobile apps are essentially database viewers. Users interact with this database while and viewing and editing its contents. From the perspective of an app designer, even simple apps thus require the same boilerplate from a persistence and synchronization layer. Tables takes care of data management and synchronization with an ODK Aggregate server, allowing the app designer to focus on the flow of information and the user experience.

A Tables app comprises a number of HTML and JavaScript files that are rendered by the framework. JavaScript APIs are exposed as two variables on the global window object that give designers the ability to access their data and launch additional pages. In this sense a Tables app is a collection of webpages that is displayed and navigated like a website. Writing an app thus does not require knowledge of Android or a complex development environment and is more capable in disconnected environments than pure HTML5. All necessary development and debugging can be performed directly in a browser, provided that the browser supports developer tools and JavaScript debugging.

In this video we present the abstractions provided by ODK Tables that allow designers to treat mobile apps as websites. We also present Hope Study, a Tables app that serves as the main entry point to data collection and curation in a longitudinal HIV study in Kenya. It has been in successful daily use for over six months. The study protocol is complex, with different data required at different time points and for patients in different arms of the study. The workflow has been written into the app, allowing healthcare workers to follow the paradigm without requiring extensive training.

2. ACKNOWLEDGMENTS

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3. REFERENCES

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