SMARTPHONE BASED DATA COLLECTION FOR RESEARCH: USING OHMAGE

HAMZAD PERSAUD, MSED
IT PROJECT MANAGER
CLINICAL AND TRANSLATIONAL SCIENCE CENTER (CTSC)
WEILL CORNELL MEDICAL COLLEGE
DEBORAH ESTRIN

- PROFESSOR, COMPUTER SCIENCE, CORNELL TECH, NYC
- PROFESSOR, HEALTHCARE POLICY AND RESEARCH, WEILL CORNELL MEDICAL COLLEGE
- CO-FOUNDER, OPEN MHEALTH, HTTP://OPENMHEALTH.ORG
OBJECTIVES

• Discuss the Ohmage ecosystem
• Understand the Ohmage work process
• Introduce the Ohmage app
• Setup Ohmage app on research participants smartphone
• Discuss the various survey field types
• Demonstrate Ohmage web based dashboard
• Discuss the physical activity monitoring app: Moves
THE OHMAGE ECOSYSTEM

• The Ohmage app
  • The app enables research participants to take surveys on their smartphone

• The web based dashboard
  • The web based dashboard provide researchers with tools

• Exporting data from Ohmage
  • CSV format
OHMAGE WORK PROCESS AND SUPPORT FROM THE CTSC

• Researcher discusses project needs with CTSC staff
• Researcher submits a simple application to request data management services
• Researcher provides draft of survey to CTSC Staff for development and testing
• Once the project is ready - setup app and train research participants on how to use the Ohmage app
• On going CTSC support
THE OHMAGE APP AND OHMAGE

- Download the Ohmage app
Connect the Ohmage app to its secure server

Server url: https://test.ohmage.org/

Enter research participants login information
Ex. wcmc2085
Admin Settings

Opt-in to share errors
Help us improve our software by automatically reporting errors. Your login information will not be included.

Network

Upload Responses via Wi-Fi
To reduce mobile network traffic, upload responses via Wi-Fi only. Generally the amount of data generated by responses is small.

Upload Probes via Wi-Fi
To reduce mobile network traffic, upload probes (e.g. logs) via Wi-Fi only. Depending on the probe types, a lot of data can be generated.

Status

Multi-Project Mode

Server Url
https://test.ohmage.org/
OHMAGE HOME SCREEN
TAKE SURVEY

**Hamzad Quality of Life Survey**
Hamzad Development Project

This survey asks questions about your work life balance

<table>
<thead>
<tr>
<th>project urn</th>
<th>urn:campaign:hamzad_development_project</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>participating</td>
</tr>
<tr>
<td>responses</td>
<td>0 responses submitted</td>
</tr>
<tr>
<td>last response</td>
<td>(not available)</td>
</tr>
<tr>
<td>reminders</td>
<td>0 reminders configured</td>
</tr>
</tbody>
</table>
THE VARIOUS SURVEY FIELD TYPES

• Ohmage surveys can have the following field types (prompts)
  • Number fields
  • Radio buttons
  • Check boxes
  • Text fields
  • Picture fields
  • Date/time fields
How satisfied are you with your health? (1 = Very Dissatisfied, 6 = Very Satisfied)
How satisfied are you with your children?

- Very Dissatisfied
- Moderately Dissatisfied
- Slightly Satisfied
- Very Satisfied
Hamzad Quality of Life Survey

Would you be interested in the following activities?

- Walking in the park
- Running on the skyline
- Latin dancing
- Sleeping
- None of the above
This is cool
Hamzad Quality of Life Survey

Approximately what time did you have lunch?

12  30  AM
1  :  31  PM
2

Previous  Next
Thank you for your participation in this study
STUDY MANAGEMENT USING THE OHMAGE WEB BASED DASHBOARD

• Log into Ohmage as a privileged user
• Manage collected research participants data/responses
• Plot survey responses
• Export survey responses data
PARTICIPATE. VISUALIZE. CHANGE.

What is ohmage?

ohmage is an open source participatory sensing technology platform. It supports expressive campaign authoring, mobile phone-based data capture through both inquiry-based surveys and automated data capture as well as temporally/spatially triggered reminders, data visualization and real-time feedback, privacy respecting data management, and extensible data exploration. All captured data are automatically timestamped, geocoded and uploaded for analysis and visualization.

This platform is used in pilot health studies and as a pedagogical tool in LAUSD schools for learning data representation, collection and analysis.

For more information, visit www.ohmage.org, demo.ohmage.org and http://www.mobilizingcs.org/.

Related Links

[Log in to ohmage]
Username: 
Password: 
Sign in

Don't have an account? Sign up
Forgot your password?
<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Participant</th>
<th>Question</th>
<th>Response</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tue Nov 11 10:38:10 GMT-05:00 2014</td>
<td>wcm0002</td>
<td>How satisfied are you with your health? 6 = Very Satisfied</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Please order any notes you'd like to capture about today.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>How satisfied are you with your children?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approximately what time did you have lunch?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2014-11-11T13:37:09.604-05:00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Would you be interested in the following activities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Walking in the park</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Take a photo of your lunch.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tue Nov 11 10:37:20 GMT-05:00 2014</td>
<td>wcm0002</td>
<td>How satisfied are you with your health? 6 = Very Satisfied</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Please order any notes you'd like to capture about today.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>How satisfied are you with your children?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approximately what time did you have lunch?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2014-11-11T13:36:09.885-05:00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Would you be interested in the following activities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>None of the above</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Take a photo of your lunch.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tue Nov 11 10:36:53 GMT-05:00 2014</td>
<td>wcm0002</td>
<td>How satisfied are you with your health? 6 = Very Satisfied</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Please order any notes you'd like to capture about today.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>How satisfied are you with your children?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approximately what time did you have lunch?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2014-11-11T13:36:06.244-05:00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Would you be interested in the following activities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sweeping</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Take a photo of your lunch.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PHYSICAL ACTIVITY MONITORING APP: MOVES

• Moves is a separate app that collects users' physical activity data.

• Moves collects data throughout the day using the smartphone on-board sensors (accelerometer, Wi-Fi, and GPS):
  • It can determine when a participant is walking, running, cycling, transport or still.
  • Determine how quickly the phone is changing location via GPS - speed.

• Moves work on both the Android and iOS platforms.

• For more information visit: [http://moves-app.com/](http://moves-app.com/)
  • Privacy policy: [http://moves-app.com/privacy](http://moves-app.com/privacy)
Moves

Activity Diary of Your Life

Download on the App Store
GET IT ON Google play
Walk
3,408 steps

Moves off 3 h 7 min

Transport 5 h 4 min

Quality of location data is worse because GPS is off.
QUESTIONS:

• Hamzad Persaud, MSEd

• CTSC-Ohmage@med.cornell.edu