NatureMapping
Chiyoung Song, Tatsuro Oya, Kevin Bang

Usage Scenario

After locating a wildlife creature, user starts ODK and launches NM form.

Take a picture.

Take a picture.

Answer a few questions about the creature’s appearance.

Query the DB based on user’s description.

Send the finished form to the server.

Implementation - ODK Collect

• ODK recognizes special question type and special attributes of this type, which indicates question instances to look back.
• When this special question type is encountered, ODK reads the answers to the specified questions.
• Based on these answers, queries the database to get appropriate entries, then display them on screen.
• Result: Separation of data entries from the form!

Implementation - Database

ODK (Open Data Kit)
• User selects a form to fill in.
• ODK parses the form, and renders the question on the screen.
• User answers the rendered questions.
• Finished form is saved, ready to be submitted to a server.
• A very simple but effective data collection tool.

The Problem

• The form requires every data entry pre-defined within it in order to implement decision-tree based selection generation.
• This model WILL NOT SCALE as the database gets larger and larger.

Approach

• User-device interaction will remain the same.
• DB interaction / dynamic selection generation during rendering

Implementation – Form Structure

The new form allows us to embed attributes in select tag that can be used to:
• make query
• figure out the location of database
• check for cached entries.

Implementation - ODK Collect

Pre-selection

Result

• Results from previous questions are used for Database Queries.
• Caches database for future use.
• Cache renewed after timestamp or location-stamp expiration.

Database Performance

The relation between time it takes to update local database and the size of external database is linear.

http://www.cs.washington.edu/education/courses/cse490d/11sp/