Micro-survey top topics we’ll review today:

NEXT WEEK

Contextual Inquiry
Other techniques
Data Collection
Applied Techniques
Data Analysis
Design & Prototyping
Evaluation

THIS WEEK: Data/Interpretation
Due today: Nothing
Due Wed:
• Canvas quiz on Readings: 2 papers

Due Sat: Project Part 1, Checkpoint 1 in Canvas

NEXT WEEK:
Mon: Guest speaker: Preston Malenke, MeasuringU

Wed: In-class UX research data collection practice
• Readings: Statistics Guide, Shadow UX paper
• Canvas Quizzes: Shadow UX paper

Due Sat: Project Part 1, Checkpoint 2 in Canvas
Ethics Micro-Survey
Data Collection and Interpretation

Learning objectives:
1. Understand what “coding” means, and how to do it (Monday)
2. Understand types and levels of data, when they are appropriate and ways to collect them (Wednesday)

Materials originally created by Prof. Jamie Ruiz
From Data to Interpretation

Coding helps you move beyond a surface understanding of work to a detailed, critical examination of work: codes emerge from systematic data analysis.
Coding Process

Examine everything in detail

- Standalone Phenomena

Label and define phenomena

- Phenomena definitions/labels

Apply labels to data

- Labeled data

Filter, aggregate, separate labels

- Higher-level categories
- Sub-categories

Use labels to differentiate user activities

- Grouped user activities
How to Code

• Label everything that makes sense
• Labels can be words or pictorially-based
  – Words, phrases
  – Annotated visualizations, diagrams, and models (e.g. work models)
  – Anything that helps you discriminate between phenomena
  – Include time codes, durations, frequency counts as necessary
Start Interpretations

• As we label, we want to start interpreting
• We want to not only identify phenomena, we want to be able to ascribe *meaning* to those phenomena
Examples - Words

Labels from a desktop app

- “Mouse click” (low-level label)
- “Command selection” (higher level label)
- “Experimentation” (higher level label)
Examples - Pictures

Sketches

– Sketch of physical environment showing where materials flow throughout environment
– Sketch of physical artifact and how it is manipulated
Interpretation

Ask:
- Who?
- What?
- Why?
- Where?
- How?
- With what?

- How long?
- How much work?
- With whom?
- With what results?
- How much effort?

Which of these fit with each of the contextual inquiry work models?
Interpretation Helps Us

• Identify likely candidates for improvement
• Identify *workarounds* and inefficiencies in workflow

Some are obvious....
Coding Benefits

Verbal and mental shorthand
Helps differentiate phenomena
Coding *Process* Benefits

Transforms us from mere viewers to *analytical* observers
Reveals workarounds and habits

Leads to *quantification* of the phenomena
Remember ...

- People have tools to do their work, but they never perfectly fit with their needs
  - They can always be improved
- Collected data and interpretations will "speak" to you
  - Suggest new areas of concern not addressed by current technology
  - Suggest ways to improve and increment existing systems
Continue with Model Practice (30 min)

Work with your entire project team. After 15 min switch roles so everyone gets to try different tasks.

Roles:

- Interviewer
- Moderator: in 3 or 4 person team, also creates notes for Affinity diagram
- Model makers: Flow, Sequence, Cultural models, and affinity notes (if the moderator isn’t doing these)

YOU MUST INCLUDE CODES and INTERPRETATIONS in your models and Affinity notes

**Turn in:** all 5 models and your affinity notes

Make sure your group name is written on each page you turn in and that one of these pages has a list of who is here today. **Staple** the pages together before turning them in.
Today’s learning objective was:

1. Understand what “coding” means, and how to do it
Data Types

• Quantitative – numerical
  – Discrete (e.g. countable items)
  – Continuous (e.g. measurements)

• Qualitative – non-numerical
### Data Types and Levels

<table>
<thead>
<tr>
<th>Qualitative</th>
<th>Quantitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likert scale responses</td>
<td></td>
</tr>
<tr>
<td>Overall, this task was?</td>
<td></td>
</tr>
<tr>
<td>how long it takes to perform a task (min:sec)</td>
<td>high and low temps in Feb in Celsius</td>
</tr>
<tr>
<td>high and low temperatures for days in January in Kelvin</td>
<td>high and low temperatures for days in January in Kelvin</td>
</tr>
</tbody>
</table>

#### Nominal Types
- Whether a user had success or failure when trying to perform a task.
- Types of errors seen by several different users.

#### Ordinal Types
- The steps taken by a user to perform a task.

#### Interval Types
- Likert scale responses
- Overall, this task was?

#### Ratio Types
- Very Difficult
- Very Easy

- **Very Difficult**: difficult, very difficult, extremely difficult
- **Very Easy**: very easy, easy

- **Likert Scale Responses**
  - Very Difficult: 0
  - Very Easy: 0

- **Overall, this task was?**
  - Very Difficult: 0
  - Very Easy: 0

- **How long it takes to perform a task (min:sec)**:
  - Very Difficult: high
  - Very Easy: low

- **High and low temps in Feb in Celsius**:
  - Very Difficult: high
  - Very Easy: low

- **High and low temperatures for days in January in Kelvin**:
  - Very Difficult: high
  - Very Easy: low
Data Types and Levels

- **Nominal**
  - Whether a user had success or failure when trying to perform a task
  - Types of errors seen by several different users

- **Ordinal**
  - The steps taken by a user to perform a task

- **Quantitative**
  - How long it takes to perform a task (min:sec)
  - High and low temperatures for days in January in Kelvin
  - High and low temps in Feb in Celsius

- **Likert scale responses**
  - Overall, this task was?
    - Very Difficult
    - Very Easy
    - Scale: Very Easy through Very Difficult

Types of data:
- **Qualitative**
  - Nominal
  - Ordinal
  - High and low temps in Feb in Celsius
  - Ratio
  - Interval
  - Likert scale responses

Interval and ratio data share the property of being **metrical**.
Data collection methods

Quantitative:
- Use categories or scales to measure
- Examples: questionnaires, structured interviews, Likert scales
Data collection methods

Qualitative:

- Detailed data, holistic understanding of complex phenomena (e.g. corporate culture)
- Examples: observations, unstructured interviews, focus groups, Contextual Inquiry
Is one better than the other? No...

Both provide:

• new knowledge and insights
• different, valid view of a phenomenon
Time Requirements

Both types of data gathering can require significant investments in time.
Time Requirements

There are no real “shortcuts” to gathering high quality data
Micro-survey

This slide set’s learning objectives were:

1. Understand what “coding” means, and how to do it
2. Understand types and levels of data, when they are appropriate and ways to collect them
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