

## (Th)inking with Data, Study Protocol

### **Intro** [10 min]

Consent  
Demographics

*We are investigating experiences to make sense of data charts and documents using a pen and touch (e.g. Surface Studio). It is about getting feedback of the experience, **not you**. The study will have several phases. For each phase: training, main task, and questionnaire, chat about experience.*

*In the training you will try various tools and I will guide you. First, let's adjust the device so that it is comfortable for you.*

### **Training 1** [10 min]

#### *Inking*

- Colors and thickness
- Ink Draw, Erase, Lasso to Move

#### *Charts*

- Drag first chart of each type (explain chart)
  - You can create multiple copies of the same chart
- Resize, Move, Delete charts
- Long press (with finger only) for label and values

#### *Workspace*

- Canvas pan & scale, recenter
- New canvas, New clear workspace
  - Sometimes the system may become slow if you have a lot of charts on the screen.

*Any questions?*

[save log, refresh, start screen record]

### **INKING** [15 min]

#### **Demo**

Bring in chart, draw ink (e.g. draw trend), circle outlier

*You are a data journalist & want to write a piece about health in the US. Imagine that you will have to revisit this in a couple of months. So **you need to take notes** to recall what you did and your findings without needing to reanalyze the data.*

- T. You collected about *Alcohol* and *Tobacco* use per state. You want to identify states for which these may be correlated to *Accidents* and *Overdoses*. Find any insights from this data that you could write about.

*I will leave you for 15 minutes to complete this task, and will give you a warning when 5 minutes remain.*

[snapshot, save log, stop screen record]

### **Discussion [10 min]**

*Briefly tell me about your findings and your strategy. What about the arrangement of the workspace you created. Is there a particular state you identified as your answer?*

### **Post condition questionnaire**

#### **Likes/Dislikes**

What are some things that you disliked?

What are some things you liked?

Any suggestions or features you wish the system had?

### **CONDITION PREFIX or POST-FIX**

[refresh, start screen record]

### **Training- Interface mechanics [10 min]**

#### *Data functions*

- Ink for taking notes
- Highlight & Paint
- Highlights can serve as multiple tags, not paint
  - In the text highlight becomes underline
  - Wherever the stroke intersects, that is what will be colored (show highlight on precise selection)
- Undo / Redo / Clear
- Label
  - The color of the ink controls the color of the label and highlights
- Hide
- Delete
- Cut & Copy
  - Cross the entire border for cut
  - Enclose items for copy
  - You can always go back and get the original chart if you want one that is not cut

*Any Questions?*

[snapshot, save log, refresh, start screen record]

**Training- Assisted Exploration** [5 min]

*As before, imagine that you will have to revisit this in a couple of months. So **you need to take notes** to recall what you did and your findings without needing to reanalyze the data. It's not a talk aloud session, I am just here to help with the mechanics of the interface.*

- T. You saw a blog post about *Heart Disease [Cancer]* from a famous politician. Find and report data you collected that corroborates or contradicts what is said in the post. What you want to do is figure out what is right and what is wrong about the post.

*Briefly tell me about your findings and your strategy. What about the arrangement of the workspace you created. Is there a particular state you identified as your answer?*

*Any Questions?*

[snapshot, save log, refresh, check screen record]

**Exploratory Task** [15 min]

*As before, imagine that you will have to revisit this in a couple of months. So **you need to take notes** to recall what you did and your findings without needing to reanalyze the data.*

- T. You want to write about *getting a job and start raising a family [where to retire]*. You have collected data related to this problem. Identify the best and worst states given the data and documents you have collected.

*I will leave you for 15 minutes to complete this task, and will give you a warning when 5 minutes remain.*

[snapshot, save log, stop screen record]

***Discussion [10 min]***

*Briefly tell me about your findings and your strategy. What about the arrangement of the workspace you created. Is there a particular state you identified as your answer?*

***Post condition questionnaire***

***Likes/Dislikes***

What are some things that you disliked?

What are some things you liked?

[4]

Any suggestions or features you wish the system had?

**Break between PREFIX & POSTFIX** [5 min]

**REPEAT with other condition**

**Final preference questionnaire** [5 min]

Final debrief – why did you prefer the technique you chose?

Any suggestions or features you wish the system had?