

## Thanks and Introduction

### Overall Project

Today you will be testing concepts for authoring animated data visualizations. Concept testing is a research method for understanding and deriving how you would go about completing a task at the conceptual level. Your responses today will help to inform our design of a tool that allows people to design animated data visualizations. Today, you will be shown two examples of animated data visualization projects. You will then be asked to analyze specific animation instances within the example. We ask that you then try to articulate how you would construct such an animation based on conceptual models. Please know that during this study our goal is to evaluate the usefulness of these concepts in practice. We are not evaluating you, your expertise as a designer, or your knowledge of animation and data visualization. This research session will be broken up into four parts: a brief questionnaire, an instructional video to frame the tasks and give examples of commonly used conceptual models for authoring animation, the six conceptual tasks based on two data visualization examples, and a debrief of your experience.

### Purpose of Research & Meaning of Expected Results

The purpose of this research session is to understand your conceptual model for creating animated data visualizations. For example, commonly used conceptual models in animation are: keyframing animation, procedural animation, and preset animation. To conceptually understand how you create animated data visualizations, we ask that you complete six total tasks today. You will be shown two different data visualization projects today from online media. For each example, you will be asked to analyze three animation instances. For each animation you will be provided with a video of that animation and a worksheet to complete. You will be prompted to sequentially break down and describe the animation by the graphical elements, underlying data, and timing. Then, you will be asked to describe if/how you could conceptually design the animation from a conceptual standpoint. During each of these task sessions you may ask questions about the data and/or visualization for clarification. Also, we ask that you verbalize your thought process as you work on each task. We will be recording audio during each task of the study. Our goal is to use this information to evaluate effectiveness and understandability of potential animation authoring concepts for data visualization. The study will help to inform the design of an authoring tool for animated data visualizations.

### Procedure

Before participating in this study you will need to read and sign the provided consent form. If you have any questions regarding the consent form, please ask me.

*Signs consent. Researcher files the consent form.*

Now we'll ask that you fill out the following background questionnaire. The questionnaire covers your past design experience with animation, graphics and visualization.

*Fills out the background questionnaire.*

Now we'll get started with the instructional portion of the study. We will have you watch the following instructional video about animated data visualizations. The video will describe the key components we will focus on for describing animations today. Then the video will describe three commonly employed

conceptual models for designing animations. Those three conceptual models are keyframing animation, procedural animation, and scene preset animation. We will pause to give you time to ask any clarifying questions for each section.

*Watch the instructional video that covers concepts, pause for questions on each section.*

Now we'll move into the concept testing portion of this session. During this part you will still be able to ask questions about the concepts covered in the video, as well as any questions about the example data visualization. The tasks will be broken up into four sections, each section pertains to a unique data visualization work.

For each data visualization you will start by taking time to familiarize yourself with the overall piece in the web browser. Then the first task will begin. We will show you a snippet of the data visualization, this video snippet will show an animation from start to end. We will prompt you to fill out each section of the worksheet to develop your understanding of the animation. Then we will ask you to describe how/if you could create this animation with a conceptual method of your choosing, you are free to choose one of the examples we mentioned, or apply your own conceptual model.

This process will then repeat for each animation task for the first data visualization example. After completing 3 tasks, we will move on to the next data visualization example, and the entire process will repeat again: (1) observe and get comfortable with the example data visualization and then (2) complete 3 tasks for that example data visualization.

We will now start with the first section. Here is the first example, please take time to familiarize yourself with the data visualization and the presented insights.

*Load the first example data visualization and the user gets familiar with the example.*

Ok, now that you are familiar with this example let's start with the first task. We will give you a video capture of an animation from this graphic. Please watch the animation once in its entirety, after which you can use the playback features to navigate the video, scrub, or slow playback down. Please answer the following questions in order about this animation.

*Hands worksheet with questions about the animation, walks the participant through the questions.*

Now that you understand the mechanics of the animation, please consider how you would conceptually create this animation in a user interface. Please think aloud as you answer this question. You can use your own conceptual method or one from the examples we discussed earlier.

Now here is another animation...

*Follow the same process for the next two animation concept tasks in the first section of the study.*

Now we will move onto another example data visualization...

*Follow the same process for the second section of the study. The participant will complete six total conceptual tasks.*

Debrief

Ok, now that you have completed the concept testing phase we will debrief your experience working with these conceptual models. I have a few questions to ask you about your experience today.  
*Researcher asks participant questions from the debriefing interview list.*

## Wrap-Up

So that brings us to the end of this session. First off, I want to thank you for your valuable time and the input that you have provided us. Here is a \$20 gift card to Amazon for your time and input.  
*Hands participant gift card.*

Finally before you leave, do you have any questions about this research study or our project in general?