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Developing Interactive Digital Signage to Promote Exploration-Based Learning

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Developing Interactive Digital Signage to Promote Exploration-Based Learning

Justin Bak (Montana Tech), Michael Fryer (Montana Tech) and Dr. Phil Curtiss (Montana Tech)

Why Interactive Digital Signage?

- Museums want to interact with visitors
- Can't fit all information on a topic into one physical exhibit
- Want to promote learning more on a topic through exploration

Background and Significance

- Most signage in museums today is non-interactive (e.g. plays a list of videos)
- Desire is to bring explorative learning into the signage, not only the exhibit itself
- Want to perform analysis on what content is viewed most and for how long

The Digital Signage Model Editor

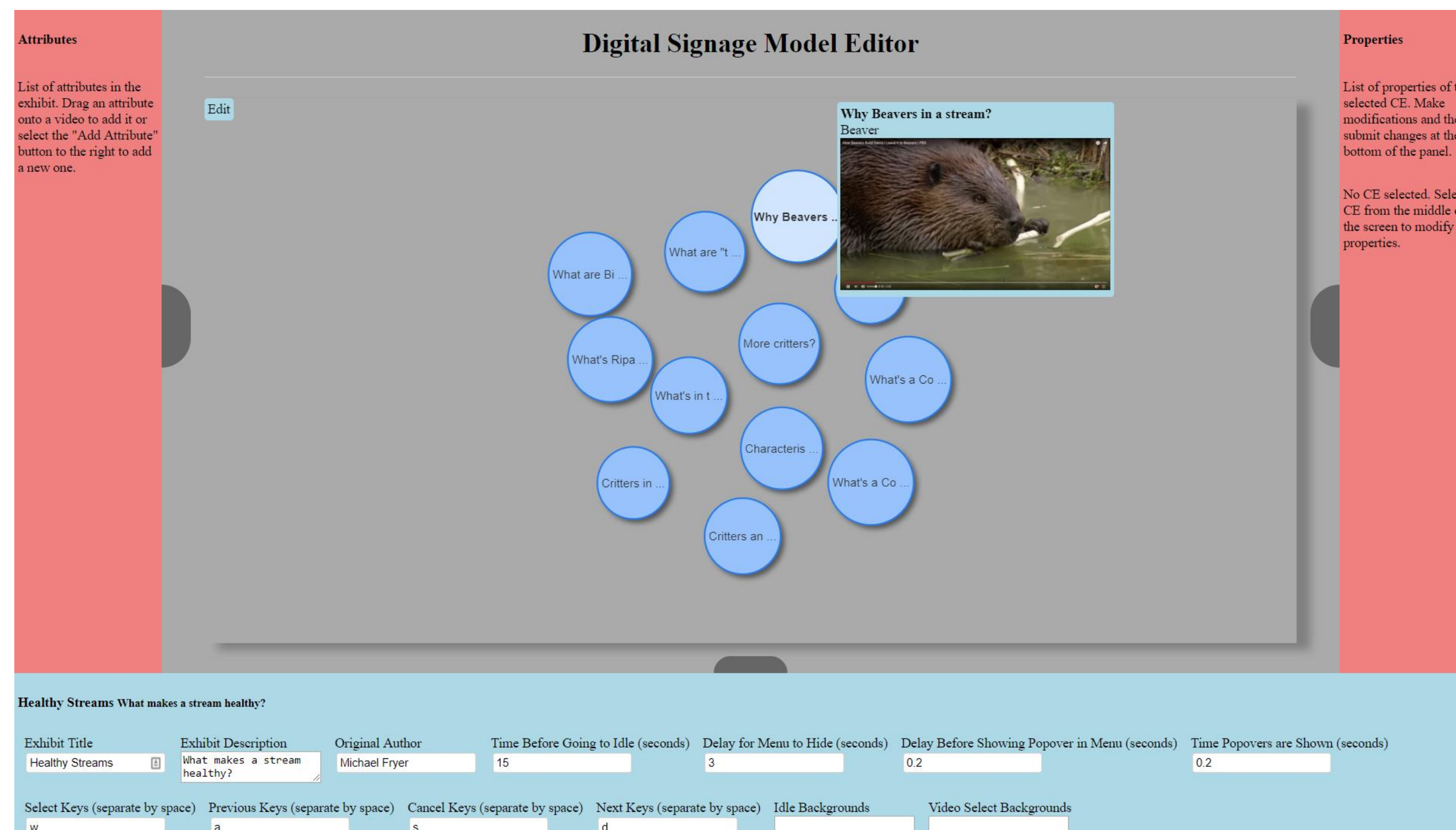


Figure 2. The Digital Signage Model Editor editing the Health Streams model

Graph Traversal Data

- Used for rebuilding visitor experiences after they have left
- Applications of traversal data:
 - Determining efficiency of the system
 - Measuring interest in specific topics

Example of Graph Traversal Data

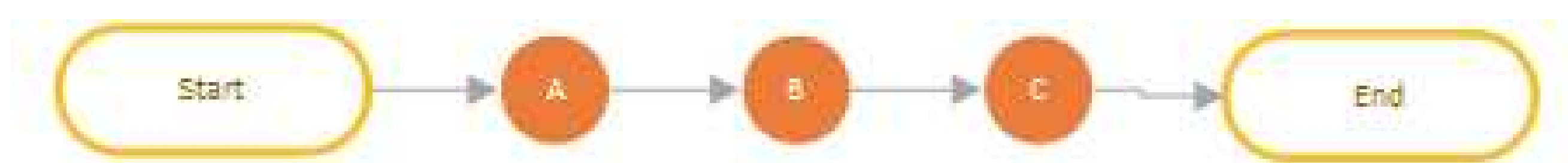


Figure 3. Visual representation of the graph traversal data we collect

Modules Created

- **Renderer**
 - Displays a digital signage exhibit
- **Editor**
 - Allows exhibit developers to create and modify existing signage systems
- **CDN**
 - Serves up the signage models and stores information on graph traversals
- **Analytics (Planned)**
 - Performs analysis on the graph traversal information obtained from the renderer

Uses

- **Museums**
 - Can be used to provide extended information on a topic
 - Can be used in situations where there are sparse docents as extra explanation
- **Business**
 - Can be used to provide additional information on products while only providing information the user is interested in

Acknowledgments

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The Digital Signage Renderer

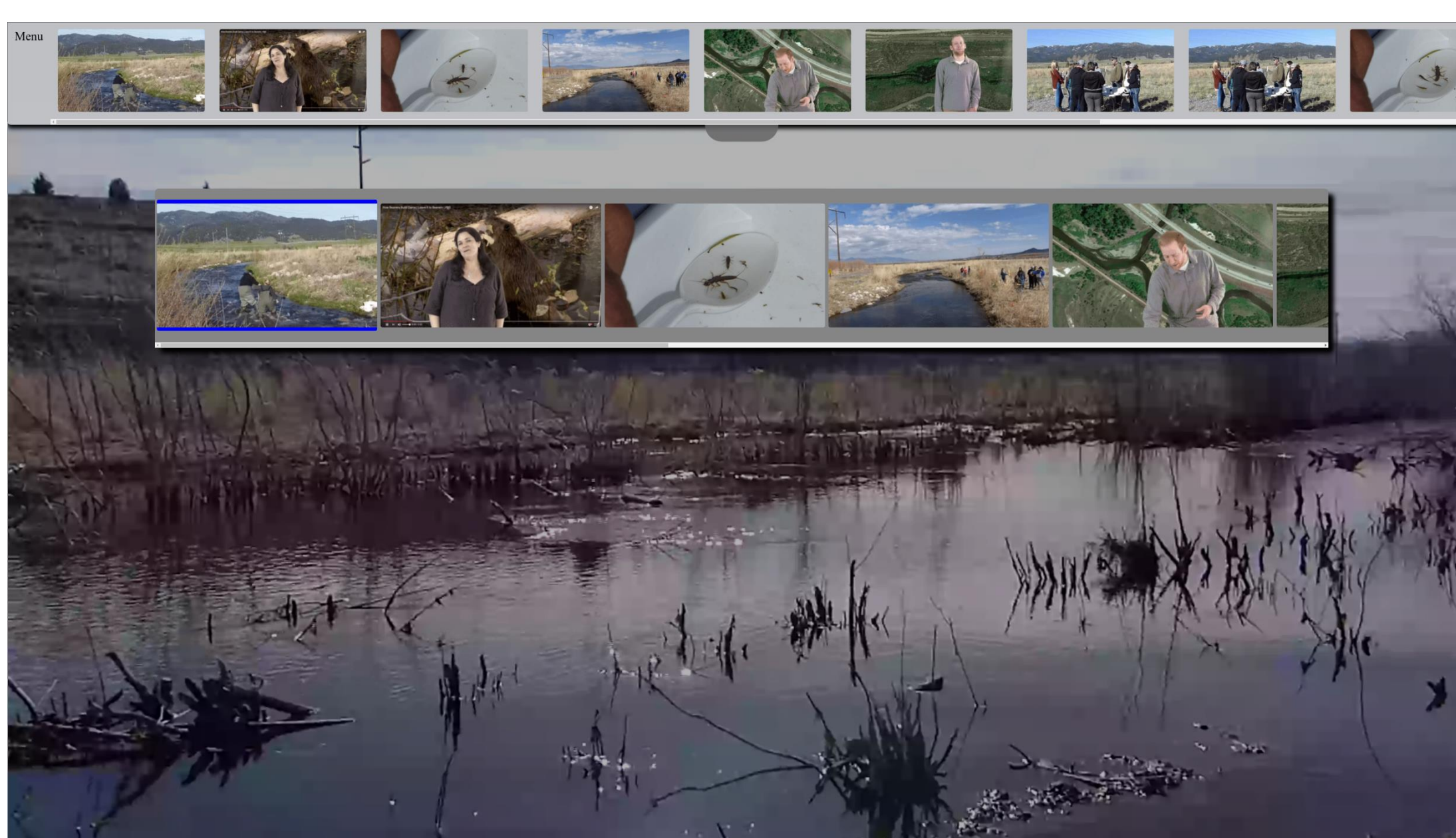


Figure 1. The Digital Signage Renderer running the Healthy Streams model.