Creating Animations

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Overview

- Animations
- Basic Animation Concepts
- Types of Animations
- Managing Animations
- Visualizing Temporal Data
- Exporting Animations
Animations

• Available in: ArcMap, ArcScene, ArcGlobe

• Create simple and complex dynamic effects
  - Visualize changes in perspective
  - Geographical movements
  - Scene properties

• Automate the process of effective demonstration and visualization of data
Basic Animation Concepts

• Animation
  - The rapid display of a sequence of 2-D or 3-D views in order to create a dynamic visual effect
  
  - Consists of:
    - One or more animation tracks
    - Similar or different types of tracks can be played independently or together
Basic Animation Concepts

- **Animation Track**
  - Collection of keyframes
  - Each track is bound to one or more objects and describe their behavior over animation time
Basic Animation Concepts

- **Keyframe**
  - Snapshot of an object’s properties at a certain time

- **Objects can be**
  - Camera, Layer, Scene, Map View and Map Time
Animations – putting it all together

• Building blocks of an animation

Animation

Animation Track – A1

Keyframe 1  Keyframe 2  ...  Keyframe n

Object

Animation Track – A2

Keyframe 1  Keyframe 2  ...  Keyframe n

Object

Animation Track – An

Keyframe 1  Keyframe 2  ...  Keyframe n

Object

Object – Camera, Layer, Scene, Map View, and Map Time
ArcMap Animation Examples

Map View Animation

Map Layer Animation

View Extent

Visibility

Transparency
ArcScene Animations Examples

Camera Animation
- Projection Type
- Observer
- Target
- Azimuth
- Inclination
- Roll
- Distance
- View Angle
- Ortho Extent

Layer Animation
- Visibility
- Transparency
- Translation
- Scale
- Rotation
- Center Offset

Scene Animation
- Vertical Exaggeration
- Sun Azimuth
- Sun Inclination
- Sun Contrast
- Background Color
ArcGlobe Animation Examples

Globe Camera Animation

Globe Layer Animation

Navigation mode
Target
Observer
View Angle
RollOffset

Visibility
Transparency
Time Animations

- Available in – ArcMap, ArcScene, and ArcGlobe
- Time animations should be used “only for specific” scenarios
  - Example – Creating a flyby while visualizing temporal data
Exploring the Animation Toolbar

Capture the current view to an animation
# Creating Animations

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Demo

Simple Animations
Animation Manager

- Used to:
  - Organize and manage animation tracks and keyframes
  - Arrange animation tracks and keyframes along animation timeline
Time Scale Properties

1. Entire animation time is normalized from 0 – 1 range
2. Individual animation tracks can span any section of this range
3. Keyframes have a timestamp within the 0 – 1 track time range
Playing Animations

- Play options:
  - Duration (speed)
  - Number of frames to display
  - Play portions

- Looping options
  - Play once forward
  - Play once reverse
  - Loop forward
  - Loop forward and reverse

- Restore state after playing
Visualizing Temporal Data in ArcGIS 10

- Simplified Temporal Mapping
  - Map is time aware
- Create, interact with, and serve temporal maps
- Unified experience for working with temporal data
  - Desktop, Engine, and Server
Simplified User Experience

- Configure time properties on the layer
- Use Time Slider to visualize temporal data
  - Common experience in ArcMap, ArcGlobe, ArcScene
Time Animations

• Use Time Animations *only for specific* scenarios
  - Visualize temporal data while flying over an area
  - Fading in/out layers while visualizing temporal data

• Existing ArcGIS 9.x Time Layer Animations
  - Should work in ArcGIS 10
  - Time properties on layers are set automatically
  - Time animation tracks in ArcGIS 10 control the Map Time
    - Time animations tracks are not tied to specific time layers

• If you just want to visualize data over time, use the Time Slider (*new in ArcGIS 10*)
Demo
Using the Time Slider
Creating Time Animations
Storing and Sharing Animations

- Formats supported
  - ArcMap animation (*.ama) file
  - ArcScene animation (*.asa) file
  - ArcGlobe animation (*.aga) file

- Reusable in the same or different document
  - The Table Of Contents should contain the same data for Layer and Time animation
Exporting Animations as Videos

• Formats supported
  - Audio Video Interleave (*.avi) format
  - QuickTime (*.mov) format
    - Apple QuickTime Player required
    - Not supported on Windows Vista & Win 7

• Can be played by standard media players

• Video properties
  - Resolution and quality can be controlled
  - Select different codecs
  - Custom resolution videos without distortion
    - ArcMap and ArcGlobe
Exporting Animations as Sequential Frames

- Supported output image formats
  - Windows Bitmap (*.BMP)
  - JPEG (*.jpg)
- Frames are written to a specified folder
- Exported frames can then be edited or modified
- Frames can then be processed into a video using the Raster to Video GP tool
Demo
Exporting Animations Sequential Frames
Documentation on Animations

• ArcGIS 10 Desktop Help
  - Professional Library > Mapping and Visualization > Animations

• Online Help under ArcGIS.com > Resource Center
Additional animation related UC activities

- **Thursday, July 14**
  - **Working with Temporal Data in ArcGIS**
    - Room 4 - 1:30 PM - 2:45 PM
  - **Creating Animations (Offering 2)**
    - Room 7 A/B – 3:15 PM – 4:30 PM
Questions

Please remember to complete the session survey

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