Dr. Sarah Abraham
University of Texas at Austin
Computer Science Department

Animation

Elements of Graphics
CS324e
Fall 2017
Student Presentation
Animations

- Series of images presented in succession
- Gives the impression of continuous motion
- Mathematical interpolations can create animations
Animations can also be pre-rendered

- Hand-drawn frames
- Animation-specific programs (e.g. After Effects or Flash)

Sprites are two-dimensional images that depict a character or object

Sprites can be animated separate from the surrounding scene
Loading Animations in Processing

- Same principle as loading a single image into `PImage`
- Use of a frame buffer to hold sequence of `PImages`
- Store images in animation order inside array
- Dynamically name loaded images to avoid hard-coding
- `nf()` formats numbers into Strings (and can provide 0 padding, so order is consistent)
What is the value of `imageName` based on this line of code?

```java
String imageName = "hamster_dance-" + nf(1, 3) + ".gif";
```
Drawing Animations in Processing

- Array index provides access to next frame in sequence
- Modulo operator allows for infinite frame looping
  - Remainder of one number divided by another
- `frameCount` system variable increments by one every frame
Sprite Example
Question

What image will be displayed when the sprite example is on frame 20?
Hands-on: Sprite Animations

❖ Today’s activities:

1. Collect or create a sequence of images to use as a sprite

2. Within the setup() function of the sketch, load these images into an array. Use the nf() function within a for-loop rather than individually loading the images

3. Within the draw() function of the sketch, display the images in sequence at a given location

4. Use the modulo operator on the frameCount and number of frames in the sprite sequence to make the sprite infinitely loop

5. Experiment with frameRate() to change the speed of the animation