CompSci 94
Storyboards and Camera Markers
January 30, 2018

Class Today
- Setting up Camera Markers and moving between them
- Storyboards
- Classwork – Draw/write a storyboard that uses camera markers
- Be sure to checkoff your classwork when done

Prof. Susan Rodger

Top 10 List – Surviving CompSci 94

10. Ask Questions
9. Read the Book
8. Visit your professor in her office
7. Learn how to spell Rodger
6. Start early and keep working until it is correct

Top 10 List (cont)

5. Read the Compsci 94 bulletin board - Piazza
4. Attend class – Be on time!
3. Disconnect (email, facebook, chat, text) and focus/think about what you are doing
2. Seek help when stuck (1 hour rule)
1. Keep number for Lilly’s Pizza handy
Animation Programs:
Scenarios and Storyboards

• 2-step process for creating animations
  – Step 1: Design (or Algorithm)
  – Step 2: Implementation (Translate to code)

Step 1: Design

• Decide on problem to be solved
  – Often problem is given to you, by instructor or boss
  – Other times, you make it up!
  – We will do both

• Design a solution
  – Use a storyboard design

Example Problem (scenario)

• The scenario is:
  A spaceship with an astronaut Amy has landed on
  the moon and Amy is walking around. Suddenly a
  sound, and an alien peeks out from behind a rock.
  The camera zooms in to get a good look, then pans
  out. Amy runs to the ladder and the alien hides.
  Amy goes up the ladder to the ship and the alien
  peeks out again. The ship takes off and the alien
  asks “don’t you want to play?”

• The problem is:
  How can we create this animation?

Designing a Solution

• First decide on objects for the scene
• Then, create a storyboard
  – A list of actions
• A storyboard can take two forms
  – Sketches
  – Textual “to do” list
Objects in the scene

- Objects: Amy, alien (hidden), ship with ladder down, rock
- Opening scene: a moon scene
- A quick sketch:

• Don’t have to be an artist!

Storyboard Template

- Scene number
- Scene sketch (picture)
- Description
- Sound
- Text

Storyboard
Scenes 1 and 2

List of objects:
ship, ladder, Amy, rock, alien

Initial Scene

Noise. An Alien appears to the right of the rock. Amy turns toward the rock.

Storyboard
Scenes 3 and 4

List of objects:
ship, ladder, Amy, rock, alien

Camera zooms in to get a good look at Alien. Then zooms back to original location.

Amy runs to ladder while Alien runs behind rock.
Storyboard
Scenes 5 and 6

List of objects:
ship, ladder, Amy, rock, alien

Storyboard in Text form

- Animation artists (Disney or Pixar) sketch their storyboards
- You may not have such expertise, so can also use a textual form

Alien peeks out and makes noise. Amy turns head towards sound. Camera zooms in and back out. Amy runs to ship, alien hides. Amy goes up into ship, ladder up, alien peeks out. Ship takes off, Alien wants to play. Like a “to do” list

How does Pixar make movies?

1. A Story Idea Is Pitched
A Pixar employee pitches his or her idea to other members of the development team in a way that’s reminiscent of a sales pitch. The real challenge is to get the audience to believe in the idea and see the possibilities in it.

2. The Text Treatment Is Written
A treatment is a short document that summarizes the main ideas of the story. Sometimes, story treatments of the name idea will be developed in order to find the tight balance between solid ideas and good possibilities, which will be filled in later by development and storyboard artists.

3. Storyboards Are Drawn
Storyboards are like a hand-drawn comic book version of the movie and serve as the blueprint for the action and dialogue. Each storyboard artist receives script pages and a “head outline,” a map of the characters’ emotional changes that need to be seen through actions. Using these as guidelines, the artist envision their assigned sequences, draw them out, and then “talk” them back to the director.

From Pixar website

From Pixar website
Camera Control

- Remembering a Camera Position with a tripod
  - May move the camera, then want to move it back
  - May want to remember a good camera position
- Use Camera Markers (like a tripod)
  - ALWAYS save original camera position before moving camera

To create a CameraMarker (tripod)

- Click on “add Camera marker”

Create Camera marker (cont)

- Give it a name and a color
- Then it appears here:
Create another camera looking at alien
- Need to move alien out from behind rock
- Use purple camera controls and move close to alien
- Add another camera marker, green this time

Result: You can see camera marker in front of alien (won’t show when click play)
Moving the camera with code

• Move camera to a Camera marker or use moveAndOrientToAGoodVantagePointOf without a camera marker
• ALWAYS save a camera marker of start view

From Storyboard to Code

• Alien peeks out and makes noise. Amy turns head towards sound. Camera zooms in and back out. Amy runs to ship, alien hides. Amy goes up into ship, ladder up, alien peeks out. Ship takes off, Alien wants to play.

Convert this to Code

Final Code

declare procedure myFirstMethod
do in order
  [this.aliendelay = 2.0]
do together
  [this.aliendelay = 2.0]
  [this.aliendelay = 2.0]
do together
  [this.aliendelay = 2.0]
do together
  [this.aliendelay = 2.0]
do together
  [this.aliendelay = 2.0]
  [this.aliendelay = 2.0]

Final Code (cont)

do together
  [this.teaTablemove = [UP], = 1.7]
  [this.teaTablemove = [LEFT], = 2.0]
do together
  [this.teaTablemove = [LEFT], = 2.0]
  [this.teaTablemove = [LEFT], = 2.0]
This lecture covered

• Setting up camera markers
• Moving the camera in one shot or in code
• Writing a storyboard and then translating to code.