

# Projects in Digital Art

COSC 42 - spring 2007

## what is digital art?

not a well defined term

## computer animation



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## computer games



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## interactive installations



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## digital photography



© Ignacio Feito

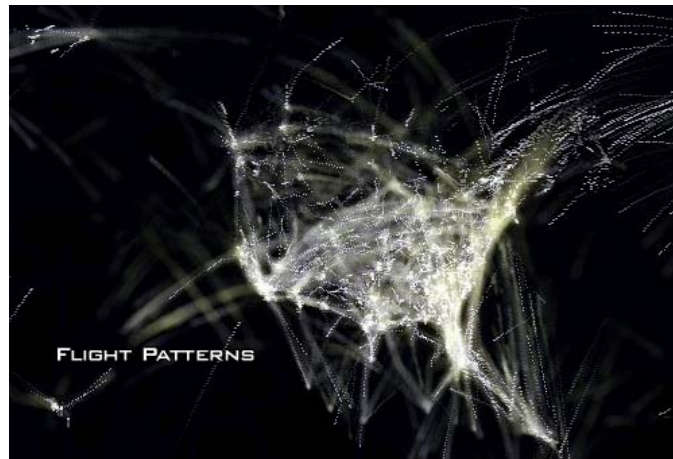


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## visualization



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## many others ...



electro acoustic @ dartmouth

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**will focus on computer animation**

games are becoming similar...

**defining shape, materials, lights,  
motion using computer techniques**

not just motion!

## what is computer animation?

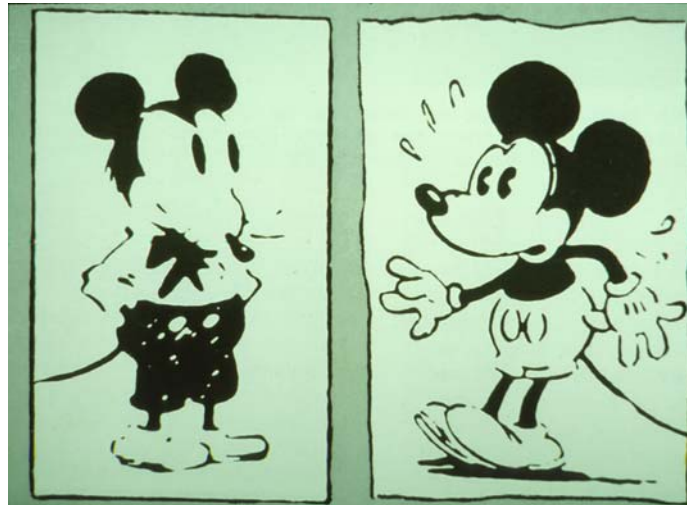


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## surely this is not computer animation



© Disney

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is this computer animation?



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is this computer animation?



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## focus on 3d animation



© Pixar / Disney



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## course structure



**let's make a cool animated short!**

## **project-based course**

- lectures for formal topics introduction
- presentations for project discussion
- lab hours to work on projects

## project execution

- proceed by milestones
  - graded individually
- replicates a (tiny) production pipeline
  
- work in groups
  - 3-4 people per group
- replicates a (tiny) production environment

## project content

- favor quality, not quantity!
  - 60-120 seconds maximum
  - 1-2 characters
  - simple environments
  
- suggestions
  - go for the "abstract"/"cartoony" look
  - avoid voice acting
  
- I will review each proposal individually!

## project presentation

- formal presentation at each milestone
  - hand in powerpoint slides and project material
  - you will be graded on them
- replicates production reviews
- presentation are extremely helpful
  - to excite your friends (and us) about your work
  - to discuss aesthetic and technical challenge
  - to get your friends' and our help in solving them
  - to let me ask questions about what's covered in class

## lecture topics

- 2d animation pipeline
- 3d animation pipeline
- computer animation concepts
  - modeling, deformation, shading, animation, lighting, rendering
- special effects

## milestones

- weekly milestone published on the web
  - presentation will follow each milestone
- milestone 0
  - form groups and propose project ideas
  - start now!
- milestone 1
  - produce a storyboard for the project
  - include timings, characters, etc.
  - start now!

**if a miss a deadline,  
you will not make it!**

**learn to work with others!**

**what can you expect to  
accomplish?**

Cornell 2005 advanced animation class

## Cornell show

## what can you expect to accomplish?

1 additional month  
5 members per team

## administration

[www.cs.dartmouth.edu/~cs42/](http://www.cs.dartmouth.edu/~cs42/)  
general information and policies  
milestones and lecture notes

## traditional 2d animation pipeline

## animation “machines”



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## cartoon animation

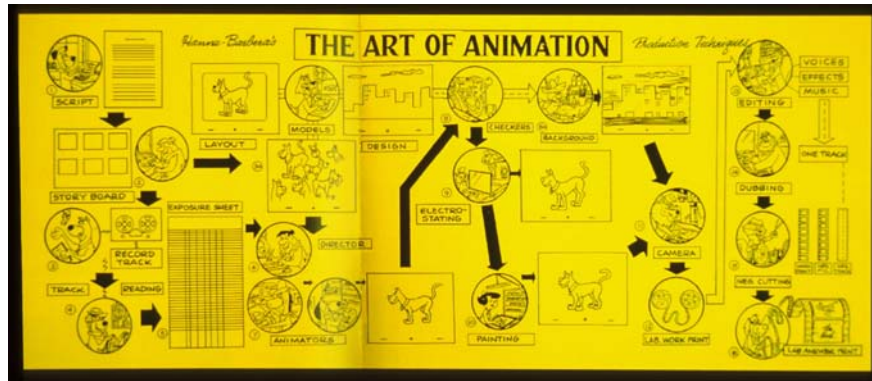
- sequence of drawing projected in succession
- cel animation: method for creating the drawings
  - uses transparent ‘cels’
  - steps for a sequence
    - draw background
    - key animator draws key frames
    - inbetweeners fills in the key frames
    - cels are inked and painted
    - cels are composited with the background

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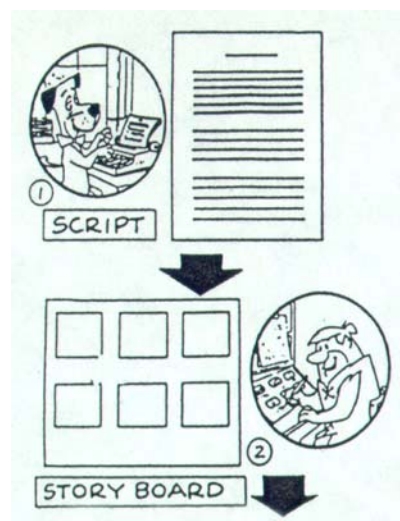
## cel production pipeline



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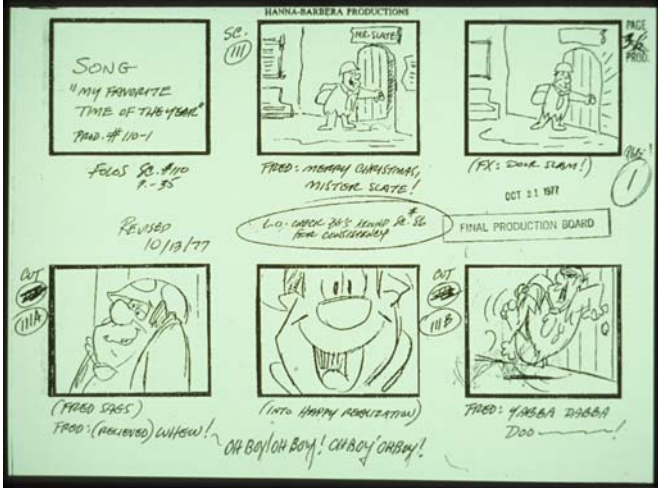
## story development



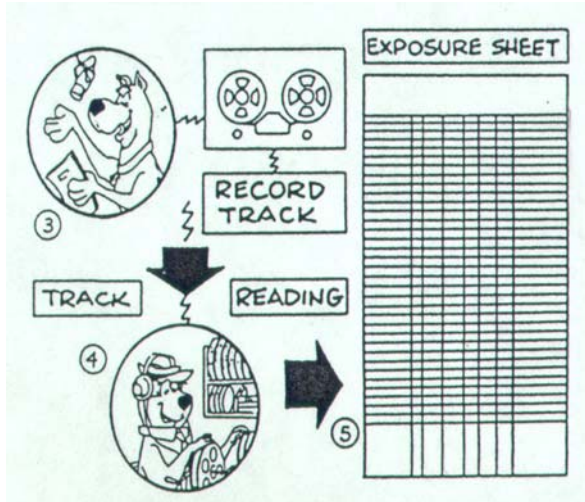
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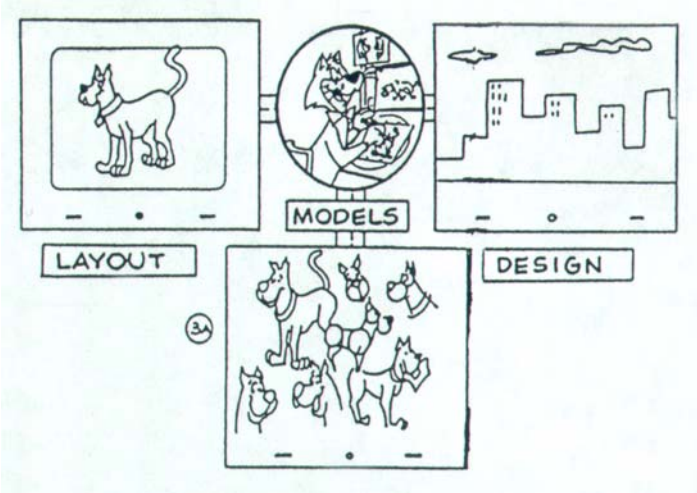
# storyboard



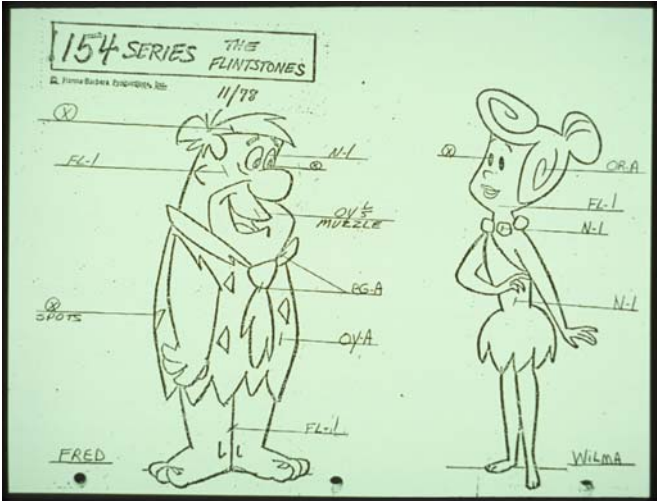
# sound production



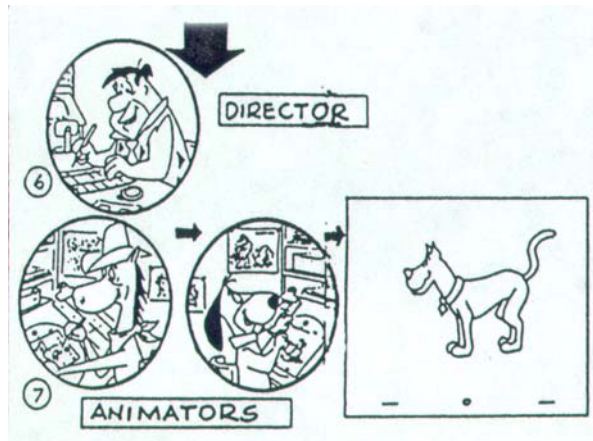
# preproduction design



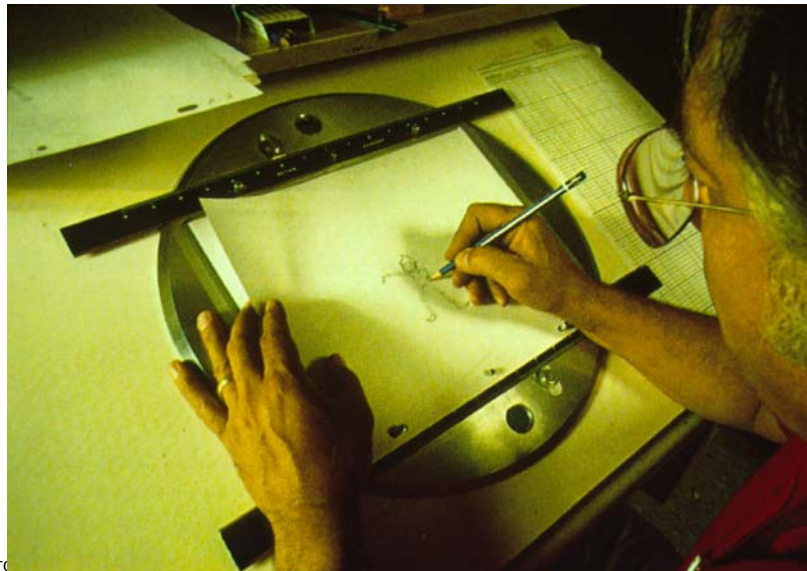
# character design



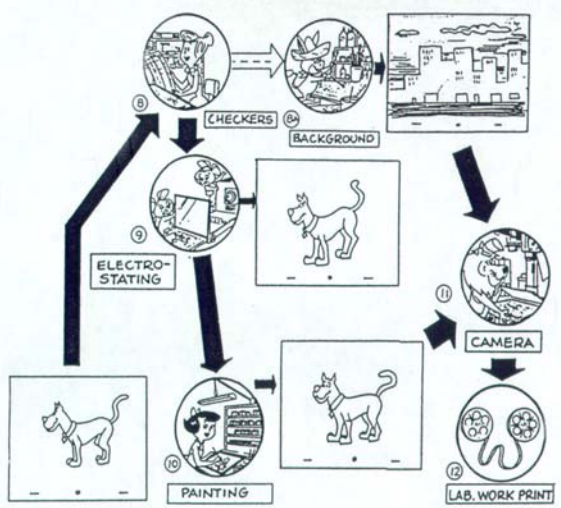
# animation



# Cel animation



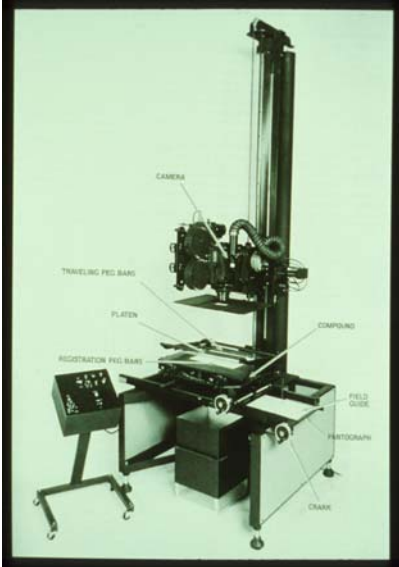
# inking, coloring and compositing



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# Cel animation



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# Cel animation

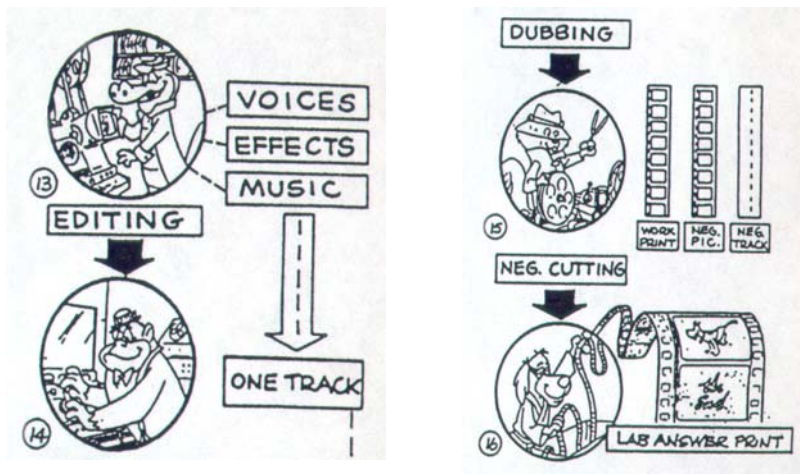


projects i

Figure 2a: Walt Disney's multiplane camera stand

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# editing and effects



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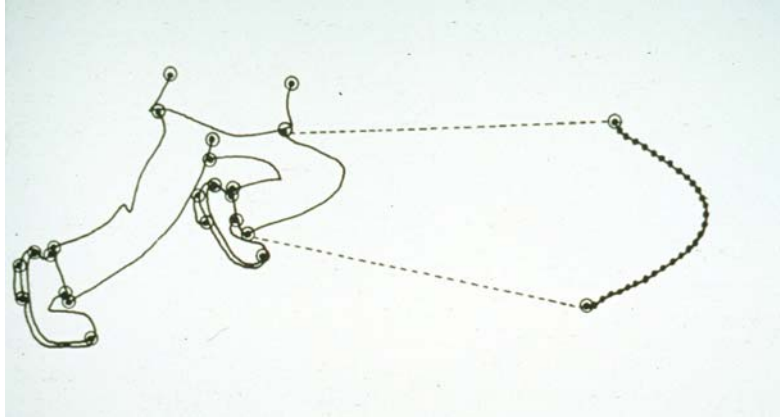
## animation production pipeline

- story development
- preproduction design
- animation production
- final editing
  
- very similar to 3d animation!

## computer in traditional animation

- eliminate simple time-intensive tasks
  - coloring
  - in between animation
  - compositing

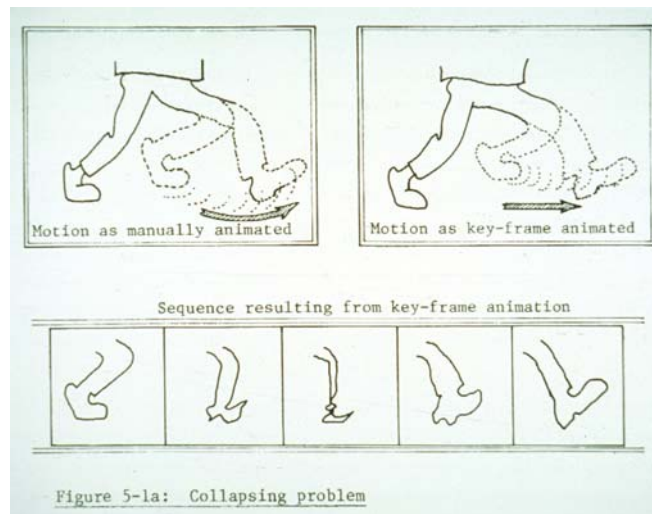
## example: in between



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## example: in between

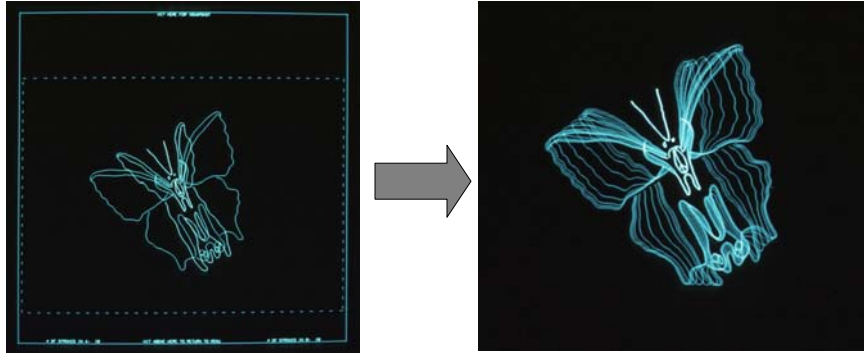


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## Nexeus animation system: circa 1974



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## Nexeus animation system: circa 1974



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## The Nexeus Animation System



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