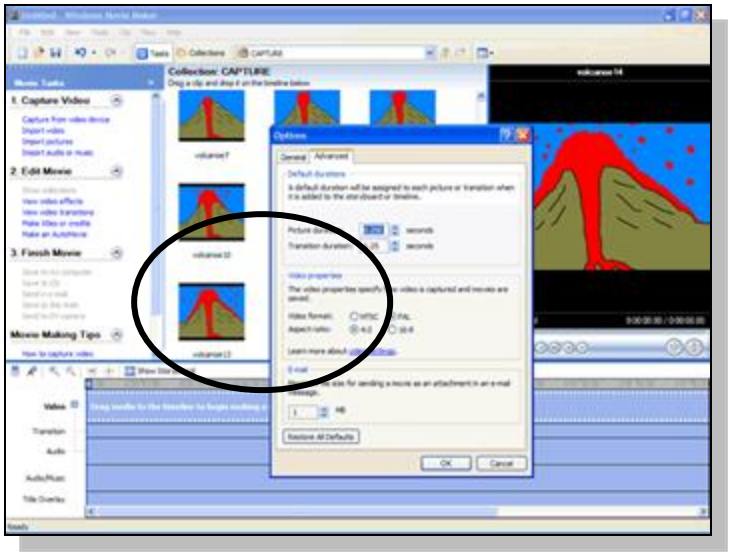
Animation Techniques

Early Animation Processes

- *Animation* is created when still images are played in rapid succession so that they appear to produce images that are constantly moving.
- Animation appears to have continuous motion because the human eye (brain) "holds-onto" the still image for just a brief moment after it is viewed, and the image is still "there" (in your brain) when the next image is viewed.
- The timing between individual images must be fast enough for the sequence to appear smooth.

Early Animation Processes

- The National Television Standards Committee (NTSC) frame rate = 30 frames per second for television (North America and Japan).
- PAL (Phase Alternate Line) is the European standard of 25 frames per second.
- The standard rate for film (motion pictures) = 24 frames per second.
- A frame rate of 30 fps will require 1800 images for one minute of animation (30 fps x 60s).

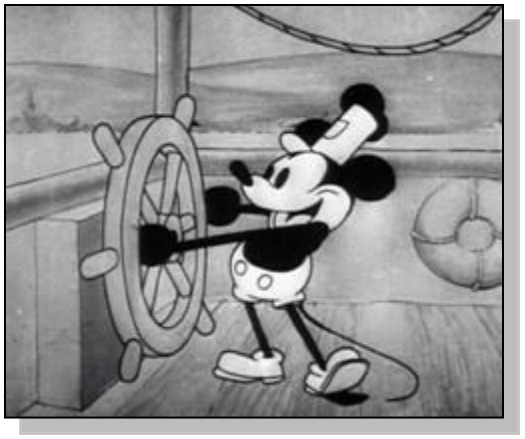


Early Animation Processes

- The *Zoetrope* was a device that was used to produce animation in the 1800s. It consisted of a circular frame holding individual, sequenced images, and a fixed viewpoint through which the spinning pictures were viewed. The term "movies" comes from the moving images.

Early Animation Processes

- The Walt Disney Studios developed animation into a modern art during the 1930s and 1940s.
- The different "layers" of the animated scene were painted onto transparent sheets, called *cels*.
- A hierarchy of artists was developed for drawing and painting the sequences of images.

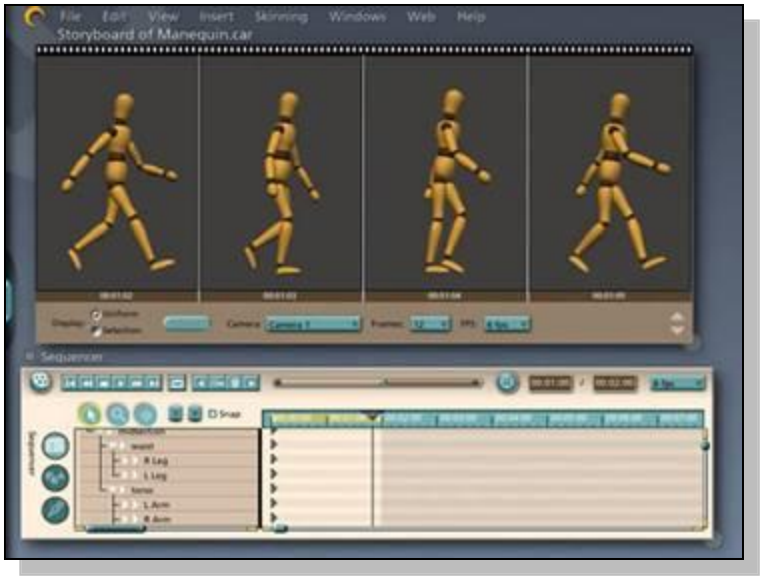


Early Animation Processes

- A master artist would draw the most important or *key frames* (*"keyframes"),* and less-skilled or less-experienced artists would fill in the action for the in-between (*"tweens"*) frames. Other artists would paint or fill the outlines with color.
- *Stop-action animation* uses clay or other models whose positions are sequentially altered and photographed for each frame.

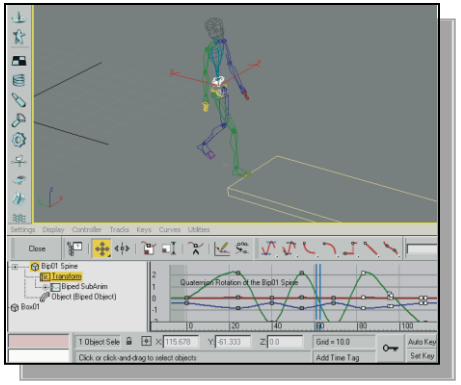
Computer Animation

- Unlike early animation, where every frame must be created to produce movement, in computer animation you define points in time (known as *keyframes*) and the computer draws all of the in-between frames.



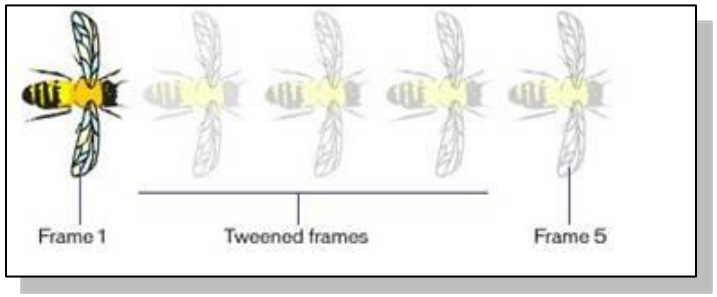
Computer Animation

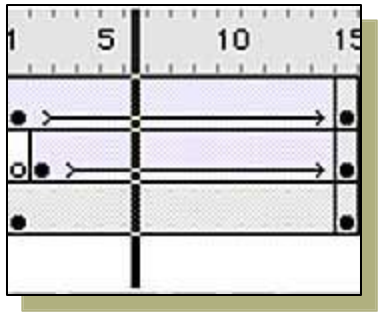
- Position the object to be animated where you want the action to begin; this is first keyframe.
- Set the number of frames that you want to use for the animation sequence. A one second "movie' would typically use 30 frames per second (30 fps NTSC); two seconds would use 60 frames, etc.
- Move, scale, or deform the object to become the next keyframe.



Computer Animation

- Instruct the computer to calculate all of the transformations that will occur between the first keyframe and the last.
- The computer will produce the 28 additional "in-between" images (*tweens*) needed for the one second of animation (you created the other two frames, the keyframes, for a total of 30).

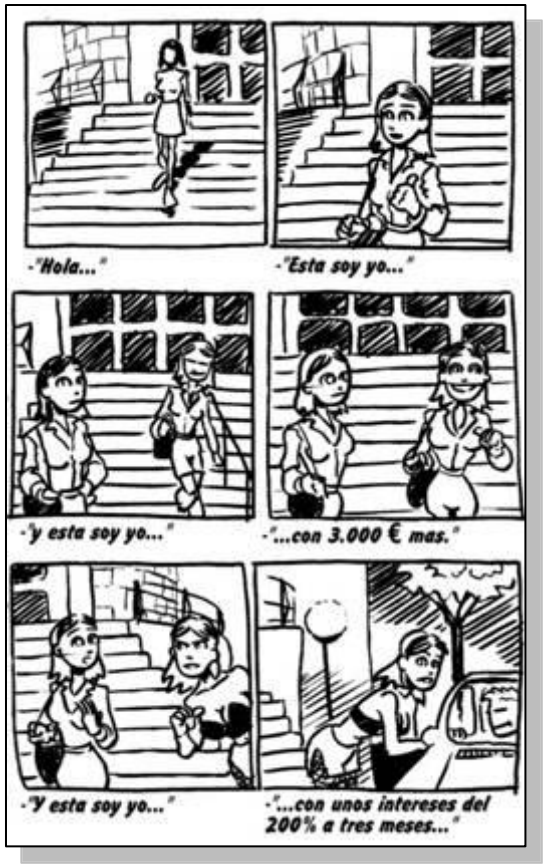




Storyboarding

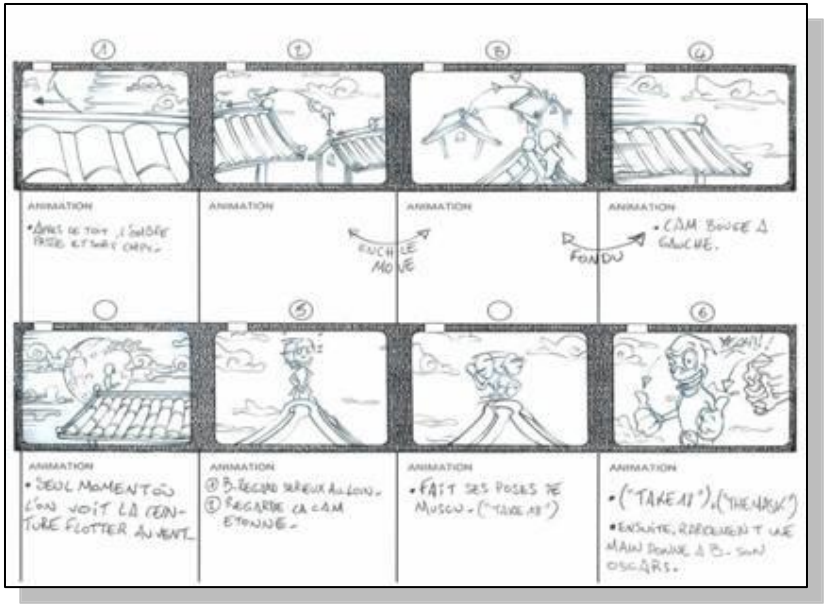
- A *storyboard* is a graphic, sequential depiction of an animation that is going to be created. It is a visual script designed to make it easier to see the animation scenes before they are created.
- A storyboard identifies the major events in the story and illustrates them in cells (small squares or rectangles), which are drawn out in a sequential pattern.

Example Storyboard



Storyboarding

- Storyboards are used for movies, TV, commercials, and animation.
- The artwork does not have to be pretty or complex, but it should be neat and comprehensible.
- The pictures in the storyboard should be accompanied by text.



The End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ODEON
TEXAS CHAINSAW
MASSACRE
TICKETS
"..yeah I SAW it.... not too bad..."