



RAMA UNIVERSITY

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FACULTY OF ENGINEERING & TECHNOLOGY

BCS -504 Computer Graphics &
Multimedia

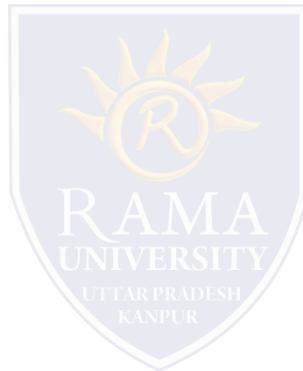
Lecture-35

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- **APPLICATION AREAS OF ANIMATION**
- **ANIMATION FUNCTIONS**



Application Areas of Animation

- 1. Education and Training:** Animation is used in school, colleges and training centers for education purpose. Flight simulators for aircraft are also animation based.
- 2. Entertainment:** Animation methods are now commonly used in making motion pictures, music videos and television shows, etc.
- 3. Computer Aided Design (CAD):** One of the best applications of computer animation is Computer Aided Design and is generally referred to as CAD. One of the earlier applications of CAD was automobile designing. But now almost all types of designing are done by using CAD application, and without animation, all these work can't be possible.
- 4. Advertising:** This is one of the significant applications of computer animation. The most important advantage of an animated advertisement is that it takes very less space and capture people attention.
- 5. Presentation:** Animated Presentation is the most effective way to represent an idea. It is used to describe financial, statistical, mathematical, scientific & economic data.

Animation Functions

1. Morphing: Morphing is an animation function which is used to transform object shape from one form to another is called Morphing. It is one of the most complicated transformations. This function is commonly used in movies, cartoons, advertisement, and computer games.

For Example:

1. Human Face is converted into animal face as shown in fig:



Animation Functions

2. Face of Young person is converted into aged person as shown in fig:



Animation Functions

The process of Morphing involves three steps:

1. In the first step, one initial image and other final image are added to morphing application as shown in fig: 1st & 4th object consider as key frames.
2. The second step involves the selection of key points on both the images for a smooth transition between two images as shown in 2nd object.

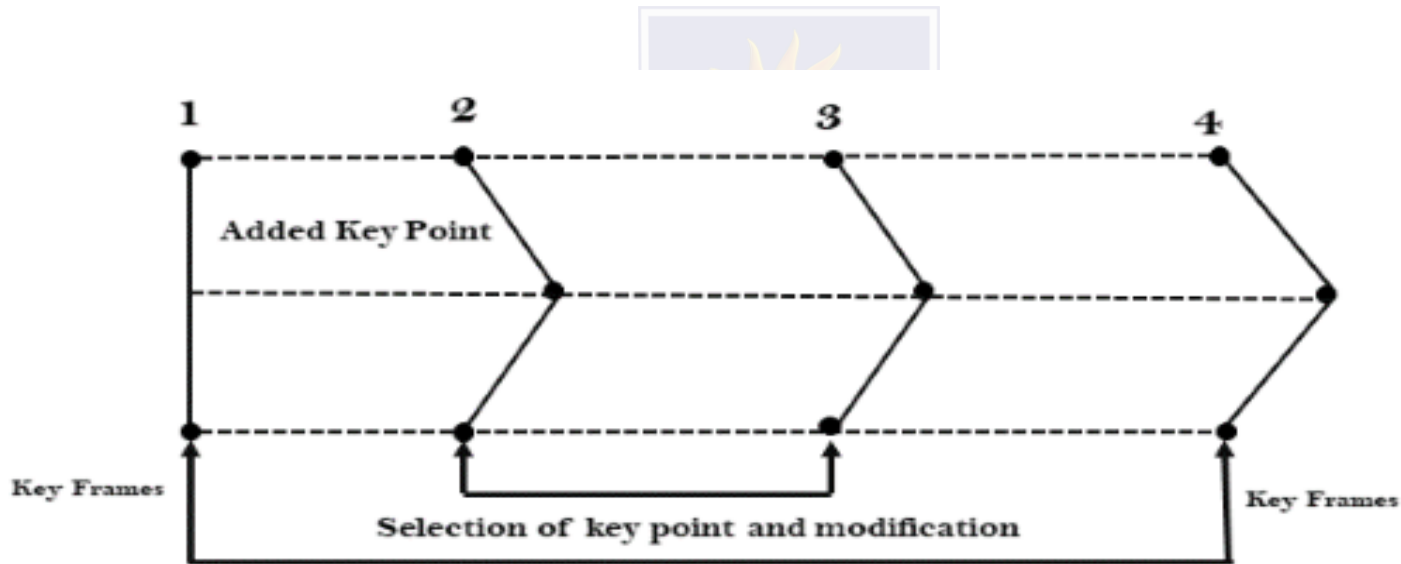


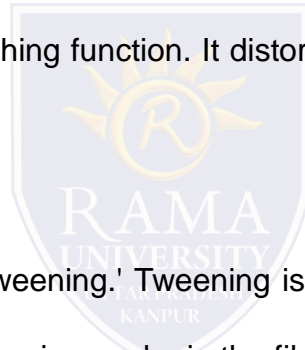
Fig: Process of Morphing

Animation Functions

3. In the third step, the key point of the first image transforms to a corresponding key point of the second image as shown in 3rd object of the figure.

Wrapping: Wrapping function is similar to morphing function. It distorts only the initial images so that it matches with final images and no fade occurs in this function.

Tweening: Tweening is the short form of 'inbetweening.' Tweening is the process of generating intermediate frames between the initial & last final images. This function is popular in the film industry.



Animation Functions

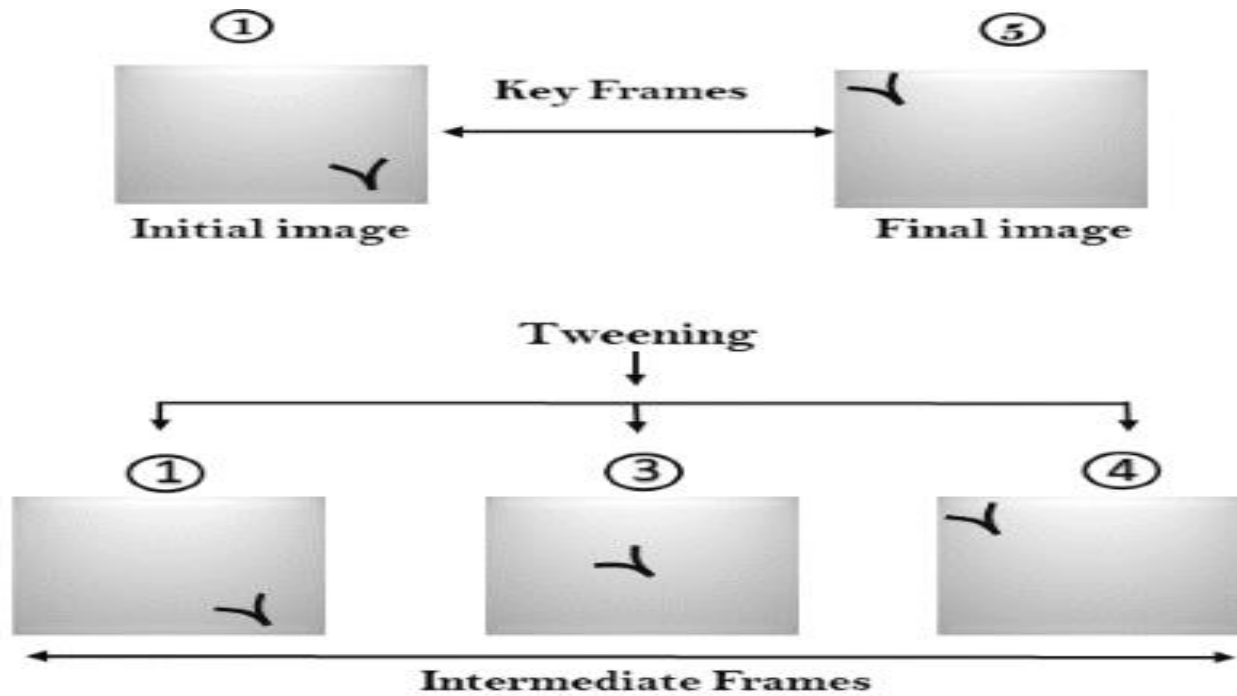


Fig: Tweening

Animation Functions

4. **Panning:** Usually Panning refers to rotation of the camera in horizontal Plane. In computer graphics, Panning relates to the movement of fixed size window across the window object in a scene. In which direction the fixed sized window moves, the object appears to move in the opposite direction as shown in fig:

If the window moves in a backward direction, then the object appear to move in the forward direction and the window moves in forward direction then the object appear to move in a backward direction.

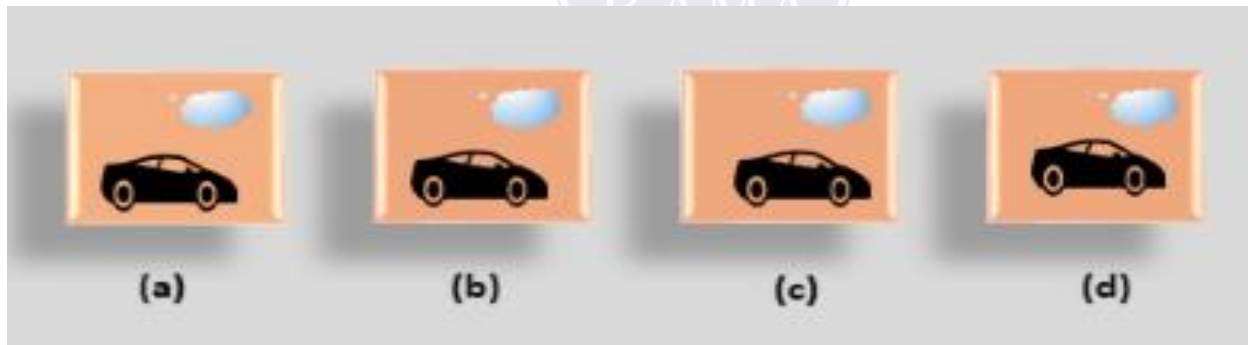


Fig: Panning

Animation Functions

5. **Zooming:** In zooming, the window is fixed an object and change its size, the object also appear to change in size. When the window is made smaller about a fixed center, the object comes inside the window appear more enlarged. This feature is known as **Zooming In**.

When we increase the size of the window about the fixed center, the object comes inside the window appear small. This feature is known as **Zooming Out**.



Fig: Zooming in & Zooming Out

Multiple Choice Question

MUTIPLE CHOICE QUESTIONS:

Sr no	Question	Option A	Option B	OptionC	OptionD
1	A procedure that eliminates those portions of a picture that are either.....a specified region of space is referred to as a clipping algorithm	inside	outside	both a & b	none of these
2	clipping region is in entire line or any part of it is to be saved for display	square	a rectangle	box	none of these
3	Applications of clipping are	Drawing	Viewing pipeline	painting programs	All of these
4	In....., we will cut the portion of line which is outside of window and keep only the portion that is inside the window	line clipping	clipping	viewport	graphics
5	system does not depend on the screen , so the interval of number can be anything positive, negative or decimal	Pivot system	coordinate system	coordination system	All of these

REFERENCES

- <http://www.engppt.com/search/label/Computer%20Graphics>

