

The background features a light gray gradient with several realistic water droplets of various sizes scattered across the frame. A faint, concentric circular pattern is visible in the upper-middle section.

ANIMATION FUNCTIONS

- 1. MORPHING
- 2. TWEENING
- 3. WARPING
- 4. PANNING
- 5. ZOOMING
- 6. FARCTALS

MORPHING

- MORPHING IS AN ANIMATION FUNCTION WHICH IS USED TO TRANSFORM OBJECT SHAPE FROM ONE FORM TO ANOTHER.
- 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:



(a)



(b)



(c)

WARPING

- 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.

Image Warping

Image filtering: change **range** of image

$$g(x) = h(f(x))$$

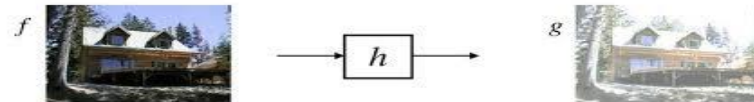
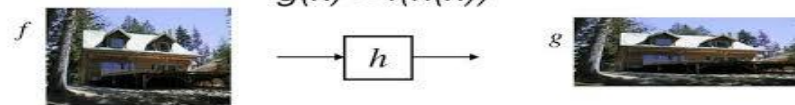


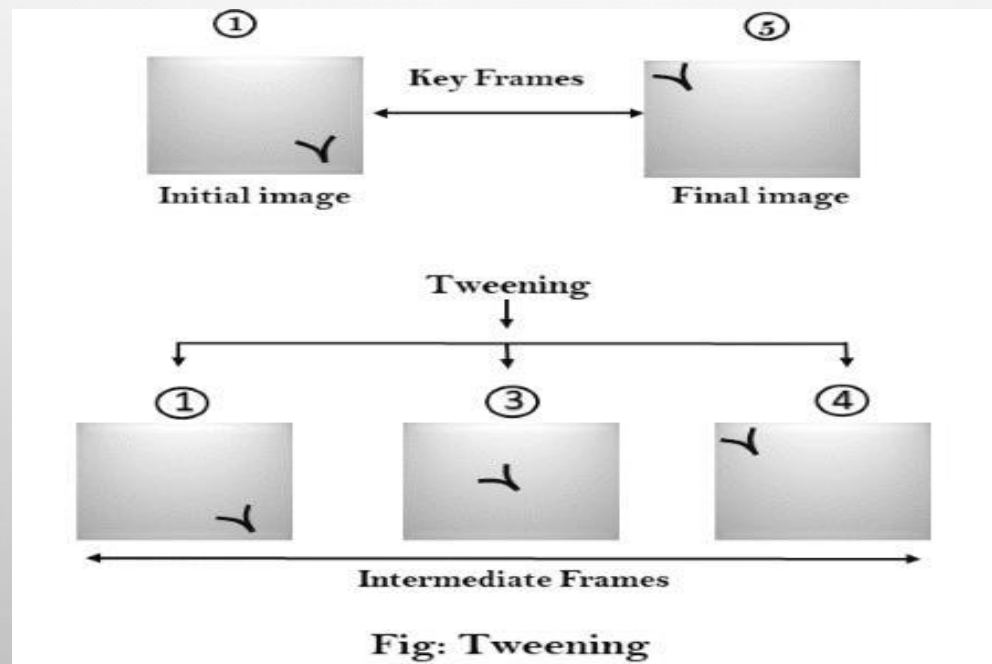
Image warping: change **domain** of image

$$g(x) = f(h(x))$$



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.



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.
- 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.



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**.

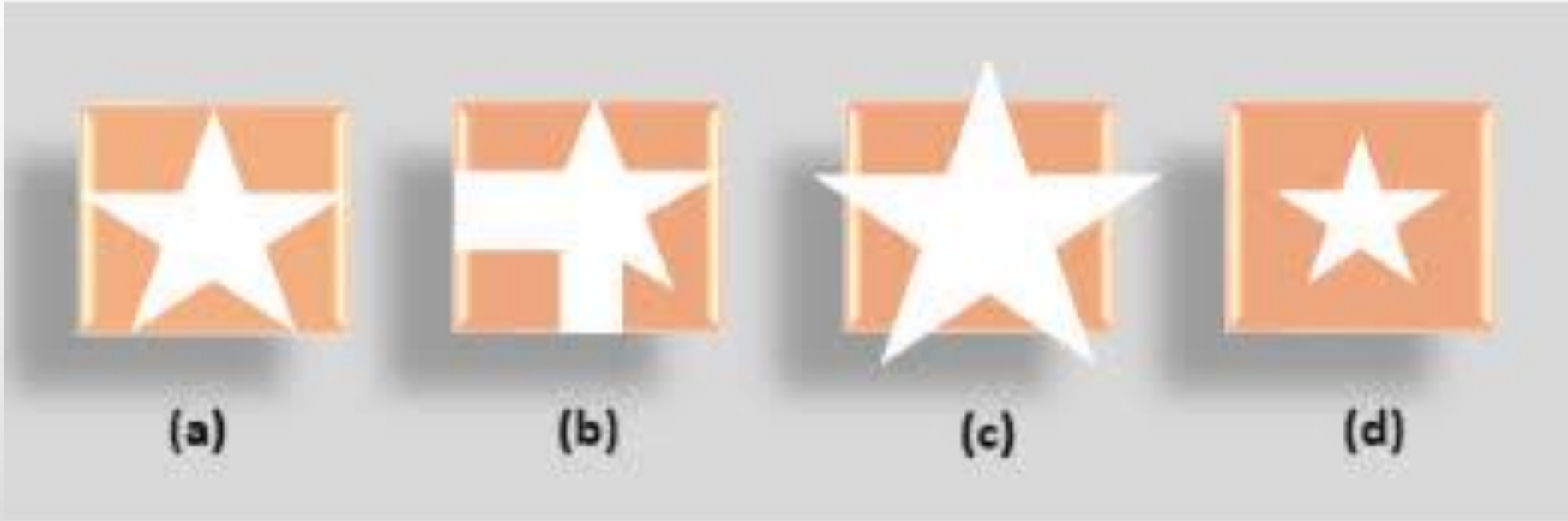
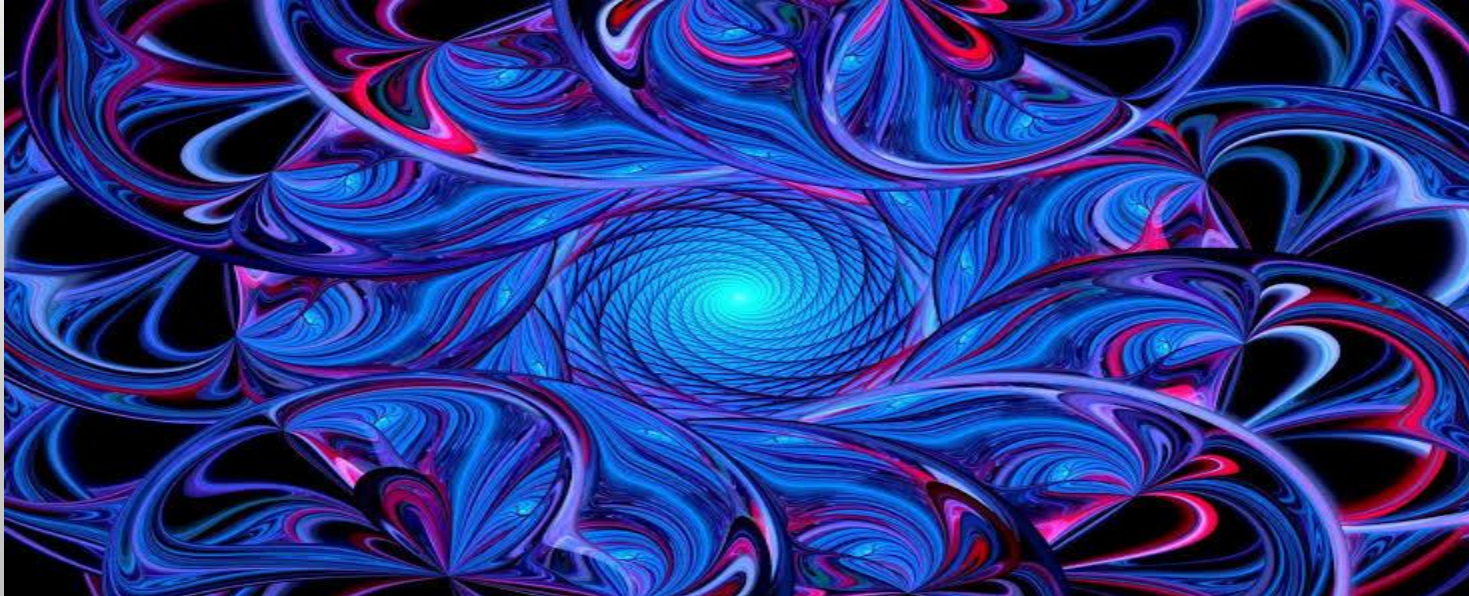


Fig: Zooming in & Zooming Out

FRACTALS

- FRACTAL FUNCTION IS USED TO GENERATE A COMPLEX PICTURE BY USING ITERATION.
- ITERATION MEANS THE REPETITION OF A SINGLE FORMULA AGAIN & AGAIN WITH SLIGHTLY DIFFERENT VALUE BASED ON THE PREVIOUS ITERATION RESULT.
- THESE RESULTS ARE DISPLAYED ON THE SCREEN IN THE FORM OF THE DISPLAY PICTURE.



TYPES OF ANIMATION

5 Types of Animation

1. **Traditional Animation**
2. **2d Vector-based Animation**
3. **3d Computer Animation**
4. **Motion Graphics**
5. **Stop Motion**

Traditional Animation

- ❑ Traditional Animation is one of the older forms of animation.
- ❑ Traditional Animation is sometimes referred hand-drawn or cel animation.

- ❑ In Traditional Animation, the animators draw images on a plain piece of paper fitted on a peg using a coloured pencil, one frame at the time.
- ❑ Sequential drawings screened quickly one after another creates the illusion of movement.

2d Vector-based Animation

- ▣ 2D Animation has become very popular due to the accessibility of the technology. The growth is increases of online video.
- ▣ 2D animation can use many layers to build up pictures. It can show anything from backgrounds and landscapes to multiple characters.

- ❑ Flash easy to use, as are other vector-based animation programs.
- ❑ 2D Animation can be created using software such as Flash, Cel Action, After Effects and TV Paint.

3D Computer Animation

- ▣ 3D Computer Animation is digitally modeled in the program and then fitted with a 'skeleton' that allows animators to move the models.
- ▣ 3D animation can be very realistic, and animators can be very artistically skilled to create a character.
- ▣ 3D animation, also referred as CGI or CG.

- ❑ It is made by generating images using computers.
- ❑ The series of images are the frames of an animated shot.
- ❑ In 3D Animation, they use programmes such as Maya to create animation.

Motion Graphics

- ❑ It is the art of creatively moving graphic texts or elements, usually for commercial or promotional purposes.
- ❑ The process of creating Motion Graphics depends on different programs.

- ▣ An actor will be filmed doing actions, speaking, or even acting full scenes, while special sensors on body and face are 'captured' using a film camera.
- ▣ This is then translated into a digital character, which can be controlled by the animator.

Stop Motion

- ❑ The process of Stop Motion is done by taking a photo of an object, and then moving a little bit and then taking another picture.
- ❑ The process is repeated and when the photos are played one after another they give the illusion of movement.

- ❑ Stop-motion uses photographic materials to create the physical objects.
- ❑ Many animators work with stop-motion for artistic reasons, as it is still difficult to recreate stop-motion models digitally.