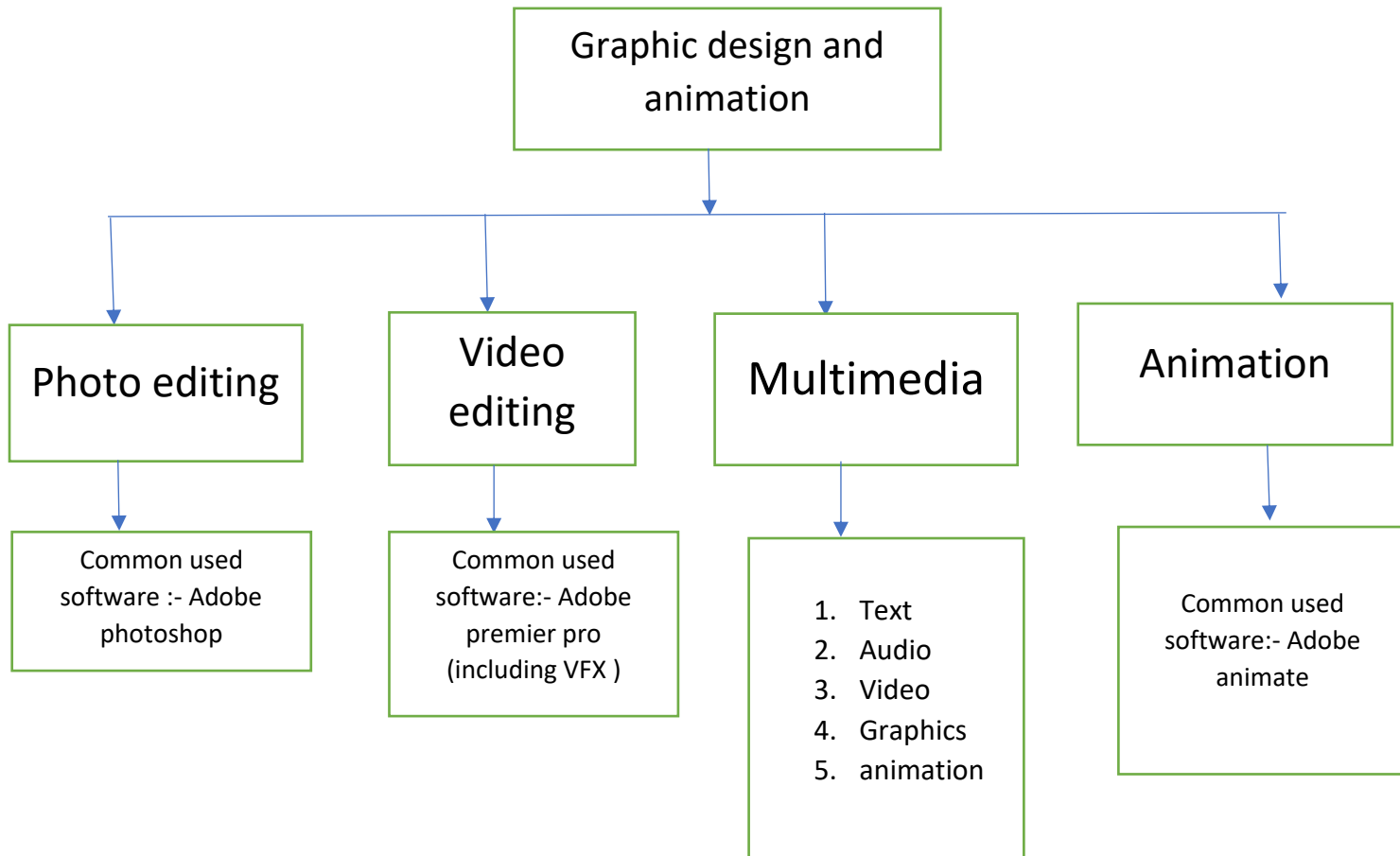


Graphics design and Animation

Road map for graphic design and animation (basic to advance):-



Graphic Design and Animation

Graphic design is the profession and academic discipline whose activity consists in projecting visual communications intended to transmit messages to social groups with specific objectives, using an applied art consisting of the use of text and graphics to communicate visually. Design is based on the principle of "form follows a specific function". Therefore, graphic design is an interdisciplinary branch of design whose foundations and objectives revolve around the definition of problems and the determination of objectives for decision-making, through creativity, innovation and lateral

thinking along with manual or digital tools, transforming them for proper interpretation. Graphic design and animation consist of photo editing and video editing and multimedia and animation in it. And for learning basics about graphic design and animation the best software is Adobe applications.

1.Photo Editing:-

What is photo editing?: A definition

- Importance of photo editing
- Types of photo editing
- Photo-editing history
- Examples of photo editing
- Editing product photos
- Learn how to edit your photos
- What is a professional photo editor?

What is photo editing?: A definition

Photo editing is the act of altering an image. But that's oversimplifying a subject that can be complex and employs different methods and tools. For example, some photo editing techniques are done manually, while others are conducted through automated software. Some photo editing is even done offline, on actual photographs, posters or other printed collateral.

Other terms for photo editing:

- Image editing
- Post-processing
- Image/photo manipulation
- Photoshopping
- Image/photo enhancement

Importance of photo editing

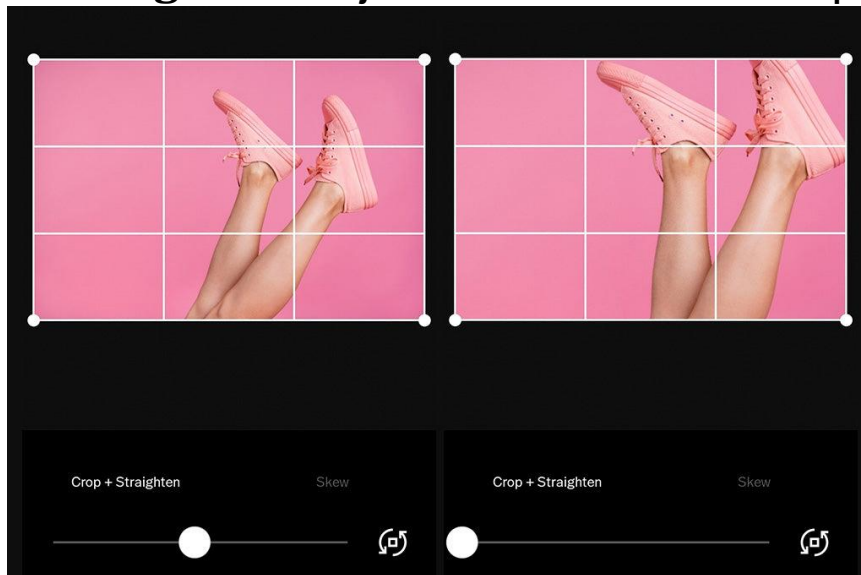
Editing helps you get the best image possible, as close to what you imagined when you took the photo (or better perhaps). Nice photographers can hone and emphasize their personal style. And for businesses, editing helps cement branding. Photo editing is particularly important for ecommerce companies. The quality of the image directly affects people's opinion of the product and sales numbers. Studies have confirmed that high-quality images outperform stock (or poorer quality) imagery and that increasing the number of high-quality images helps build trust with consumers *and* increases conversion rates.

What are the different types of photo editing?

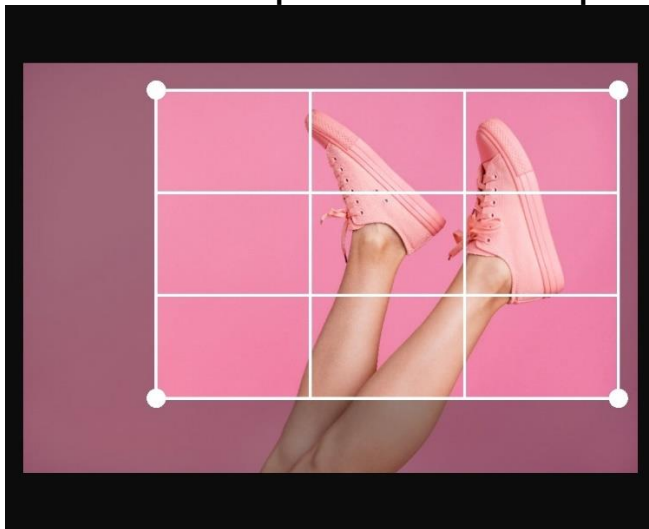
There are many ways to edit a photo — some simple and others more complicated. Most people can figure out simple photo-editing techniques on their own—though this does require time and patience. More complex adjustments may require a dedicated software program or a trained professional editor.

Simple photo-editing techniques include:

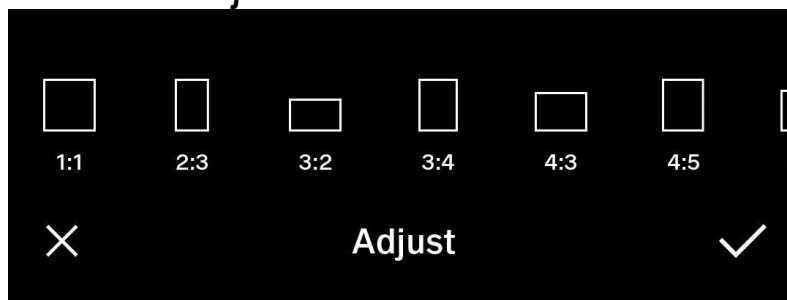
1. **Straighten:** adjust the horizon of the photo



1. **Crop:** trimming out a portion (usually peripheral) of the image to help draw attention to the subject or otherwise improve the composition



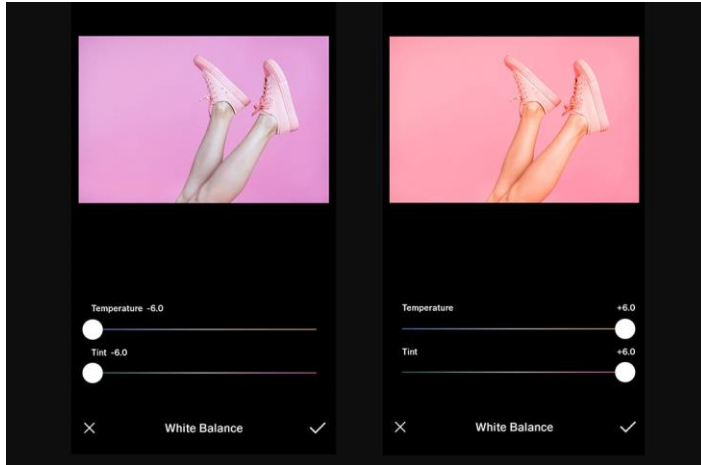
2. **Resize:** adjust the dimensions of the image



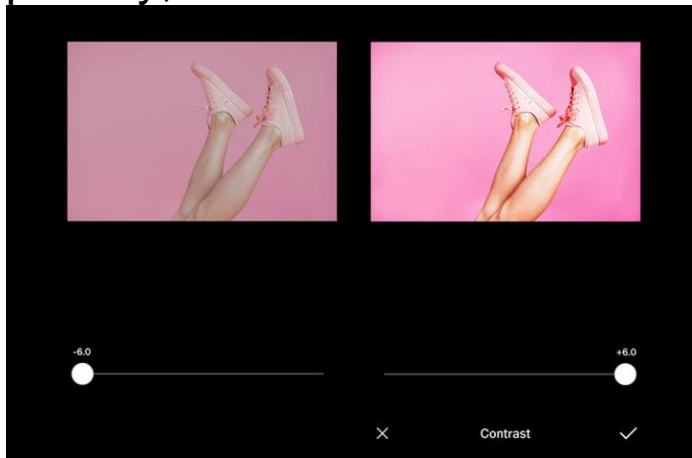
3. **Sharpen:** enhance the definition of the edges in an image (will not make a blurry image in-focus).

4. **Noise reduction:** smoothing the picture out, typically accomplished by reducing the pixel size

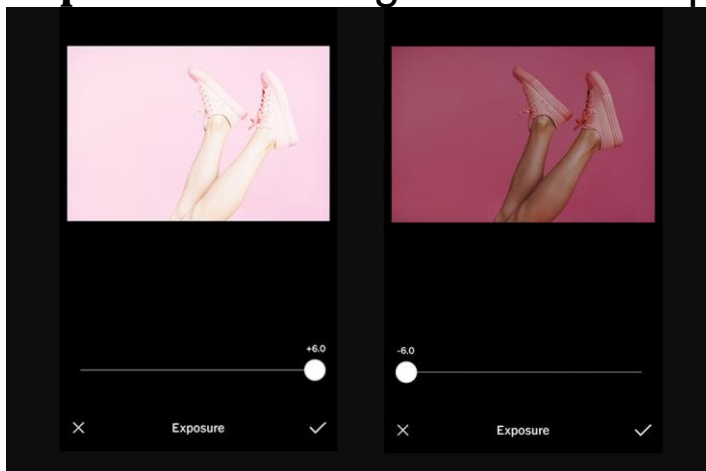
5. **White balance:** the color of the light in the image



6. **Contrast:** higher contrast makes an image more punchy, while lower contrast makes it flatter in color



7. **Exposure:** the brightness of the photo



8. **Lens correction:** lessens the effect(s) of the camera lens

9. **Color adjustments:** change the color of an item or element in the photo

10. **Background removal:** delete the background from the image, isolating the subject (this is often used for white background product photography)



More complex techniques include:

- **Clipping paths:** vector path that differentiates the part of the image that's visible and the part that's transparent (extracts a subject or element from an image)
- **Portrait corrections:** complexion touch-ups and enhancements
- **Drop and reflection shadow:** create and adjust shadows
- **Special effects:** this can mean an array of things, from animation to adding weather conditions like fog or snow
- **Adjusting text and visuals:** add overlays or manipulate what's already there
- **Photo stitching:** when you seamlessly put two images together to make it look as though they were shot that way
- **Photo masking and Layers:** the process of hiding and revealing specified portions of an image

Pixel editing and parametric image editing

Two methods of digital photo editing are pixel editing and parametric image editing. Let's look at their definitions:



What is pixel editing?

Pixel editing, or pixel-level editing, is when you alter an image at the pixel level. Because you're altering the pixels themselves, this also permanently changes the image file. That's why pixel editing is considered a destructive form of photo editing because it's not as easy to undo the changes and restore the original file. Pixel editing allows you to make extremely detailed edits and accomplish certain functions that parametric image editing can't (like CMYK color modes, for example).

What is parametric image editing?

Parametric image editing (PIE) doesn't change the pixels of the image. Instead, these edits are recorded as a set of steps to follow to accomplish the final look. Thus, it's a non-destructive mode of photo editing. However, PIE doesn't always allow for all types of edits. Many in the industry recommend starting with PIE, and then using pixel editing to refine the final details.

Editing product photos

Product images will almost always require or benefit from post-processing. One of the main things you want to be mindful of is consistency, especially if you're working on multiple products for the same company or are providing several types of photos of the same product.

Photo editing for ecommerce

High-quality photos and photo editing are especially important for ecommerce stores:

- Elevates branding
- Attracts attention
- Builds customer trust
- Increases revenue

Too Much Noise

- Shabby, low-grade looks
- Grainy (not in a good way)
- Can create discoloration

Wrong Background

- Not attractive
- Won't adhere to requirements
- Product looks dull

Poor Lighting

- Causes color deviations
- Excessive shadow or glare
- Skews white balance

Visuals help market brands and sell products, but you should also think about where the image will be used. Is it for an advertisement, ecommerce page, social media, or a print catalog? A white background shot will call for much different edits than an image for a Facebook ad. Likely, you'll be able to get more creative with advertising imagery. Here are some of the most common types of edits for product photography:



Image source

- **Brightness and exposure:** If you didn't nail the lighting, you can make substantial adjustments post-shoot.
- **Background removal:** This is a super-common edit for product photos, especially if you're listing the item on Amazon, which has a white background requirement. Regardless, white background maintains consistency.
- **Color correction:** It's important that product photos portray the item as accurately as possible so it's a smart idea to color correct all of your product images. As many as 64% of returns happen because the product didn't match customer expectations based on product images and descriptions.

- **Color change:** For products that come in several colors, it's important to showcase the variety. Instead of photographing the product in every color, photo editors can make the changes post shoot.



What is a professional photo editor?

A person who edits images can either be self-employed, contracted by an outsourced company or agency, or someone who works in-house. There are many possible job titles for a photo editor, including digital photo editor, graphic designer or art director, among others.

Typically, photo editors specialize in specific industries, much like photographers. For example, real estate, editorial, and product photography all come with their own set of trends and intricacies. Editors that focus on ecommerce images know just how to make products pop.

2. Video editing :-

Video editing is the manipulation and arrangement of video shots. Video editing is used to structure and present all video information, including films and television shows, video advertisements and video essays. Video editing has been dramatically democratized in recent years by editing software available for personal computers. Editing video can be difficult and tedious, so several technologies have been produced to aid people in this task. Pen based video editing software was developed in order to give people a more intuitive and fast way to edit video.^[1]



Types of editing

Though once the province of expensive machines called video editors, video editing software is now available for personal computers and workstations. Video editing includes cutting segments (trimming), re-sequencing clips, and adding transitions and other special effects.^[2]

- Linear video editing uses video tape and is edited in a very linear way. Several video clips from different tapes are recorded to one single tape in the order that they will appear.
- Non-linear editing systems (NLE) allow video to be edited on computers with specialized software. This process is not destructive to the raw video footage and

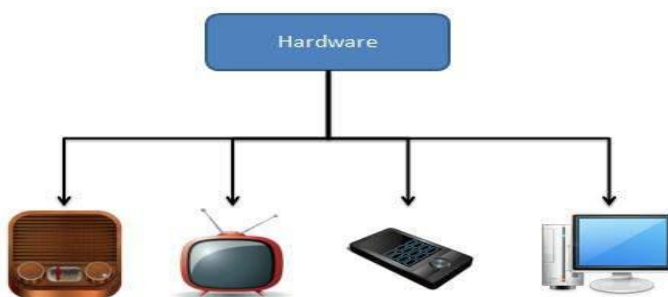
is done by using programs such as DaVinci Resolve, Avid Media Composer, Adobe Premiere Pro and Final Cut Pro.

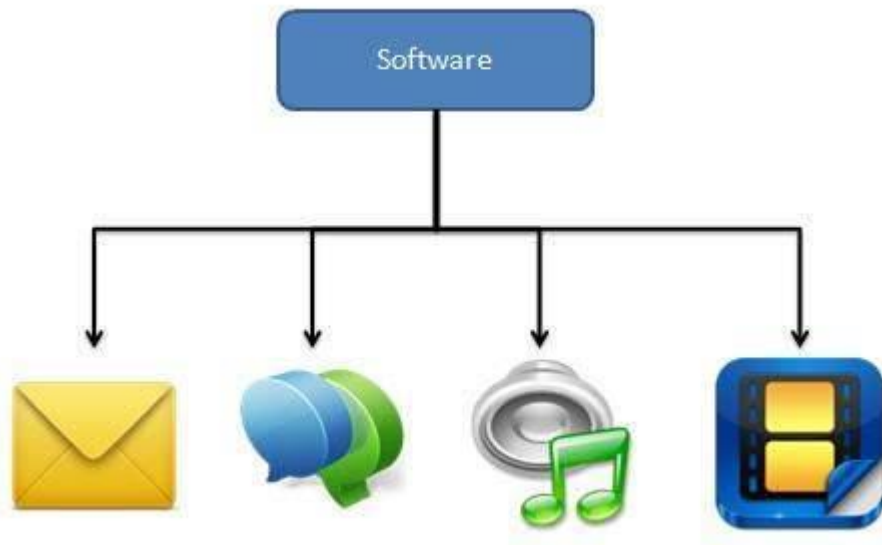
- Offline editing is the process by which raw footage is copied from an original source, without affecting the original film stock or video tape. Once the editing is complete, the original media is then re-assembled in the online **editing** stage.
- Online editing is the process of reassembling the edit to full resolution video after an offline edit has been performed. It is done in the final stage of a video production.
- Cloud-based editing is the process of utilising the internet to work with content remotely, collaboratively or of a time-critical nature such as editing of live sports events in real-time using video proxies (lower resolution copies) of original material.
- Vision mixing is used when working within live television and video production environments. A vision mixer is used to cut live feed coming from several cameras in real time.

3. Multimedia :-

Definition of Multimedia

Multimedia is an interactive media and provides multiple ways to represent information to the user in a powerful manner. It provides an interaction between users and digital information. It is a medium of communication. Some of the sectors where multimedia as is used extensively are education, training, reference material, business presentations, advertising and documentaries .By definition Multimedia is a representation of information in an attractive and animation. In other words we can say that Multimedia is a computerized method of presenting information combining textual data, audio, visuals (video), graphics and animations. For examples: E-Mail, Yahoo Messenger, Video Conferencing, and Multimedia Message Service (MMS).Multimedia as name suggests is the combination of Multi and Media that is many types of media (hardware/software) used for communication of information.





Components of Multimedia

Following are the common components of multimedia:

- **Text-** All multimedia productions contain some amount of text. The text can have various types of fonts and sizes to suit the professional presentation of the multimedia software.
- **Graphics-** Graphics make the multimedia application attractive. In many cases people do not like reading large amount of textual matter on the screen. Therefore, graphics are used more often than text to explain a concept, present background information etc. There are two types of Graphics:
 - **Bitmap images-** Bitmap images are real images that can be captured from devices such as digital cameras or scanners. Generally bitmap images are not editable. Bitmap images require a large amount of memory.

- **Vector Graphics-** Vector graphics are drawn on the computer and only require a small amount of memory. These graphics are editable.
- **Audio-** A multimedia application may require the use of speech, music and sound effects. These are called audio or sound element of multimedia. Speech is also a perfect way for teaching. Audio are of analog and digital types. Analog audio or sound refers to the original sound signal. Computer stores the sound in digital form. Therefore, the sound used in multimedia application is digital audio.
- **Video-** The term video refers to the moving picture, accompanied by sound such as a picture in television. Video element of multimedia application gives a lot of information in small duration of time. Digital video is useful in multimedia application for showing real life objects. Video have highest performance demand on the computer memory and on the bandwidth if placed on the internet. Digital video files can be stored like any other files in the computer and the quality of the video can still be maintained. The digital video files can be transferred within a computer network. The digital video clips can be edited easily.
- **Animation-** Animation is a process of making a static image look like it is moving. An animation is just a continuous series of still images that are displayed in a sequence. The animation can be used effectively for attracting attention. Animation also makes a presentation light and attractive. Animation is very popular in multimedia application.

4. Animation :-

Animation is a method in which figures are manipulated to appear as moving images. In traditional animation, images are drawn or painted by hand on transparent celluloid sheets to be photographed and exhibited on film. Today, most animations are made with computer-generated imagery (CGI). Computer animation can be very detailed 3D animation, while 2D computer animation (which may have the look of traditional animation) can be used for stylistic reasons, low bandwidth, or faster real-time renderings. Other common animation methods apply a stop motion technique to two- and three-dimensional objects like paper cutouts, puppets, or clay figures. A **cartoon** is an animated film, usually a short film, featuring an exaggerated visual style. The style takes inspiration from comic strips, often featuring anthropomorphic animals, superheroes, or the adventures of human protagonists. Especially with animals that form a natural predator/prey relationship (e.g. cats and mice, coyotes and birds), the action often centers around violent pratfalls such as falls, collisions, and explosions that would be lethal in real life. The illusion of animation—as in motion pictures in general—has traditionally been attributed to persistence of vision and later to the phi phenomenon and/or beta movement, but the exact neurological causes are still uncertain. The illusion of motion caused by a rapid succession of images that minimally differ from each other, with unnoticeable interruptions, is a stroboscopic effect. While animators traditionally used to draw each part of the movements and changes of figures on transparent cels that could be moved over a separate background, computer animation is usually based on programming paths between key frames to maneuver digitally created figures throughout a digitally created environment.

2D (Vector)

2D animation can fall under traditional animation like most early Disney movies — *Pinocchio*, *Beauty and the Beast*, etc. But there is something called Vector-based animation that can be 2D without being traditional. With Vector-based, the motion here can be controlled by *vectors* rather than *pixels*. So, what the heck does that mean? Images with familiar formats like JPG, GIF, BMP, are pixel images. These images cannot be enlarged or shrunk without affecting image quality. Vector graphics don't need to worry about resolution. Vectors are characterized by pathways with various start and end points, lines connecting these points to build the graphic. Shapes can be created to form a character or other image. Below is an example.



Vector-based animation uses mathematical values to resize images, so motion is smooth. They can re-use these creations so the animator doesn't need to keep drawing the same characters over and over again. You can move around these vectors and animate that way. This is also helpful for animators who aren't the best drawers. Yes, these people exist.

3D

Today, 3D or computer animation is the most common type. But just because computers have stepped in instead of actual drawings, it's not necessarily easier. The computer is just another tool, and 3D animation is still a long, intense process. In 3D animated movies, the animator uses a program to move the character's body parts around. They set their digital frames when all of the parts of the character are in the right position. They do this for each frame, and the computer calculates the motion from each frame. Animators adjust and tweak the curvatures and movements their characters make throughout. From *Toy Story* in 1995 to today's *Coco*, 3D animation has become the dominant style in animated films.



3D animation is also unique in that, unlike 2D or other traditional methods, the character's entire body is always visible. If a character turns to the side, the animator only needs to draw the side profile in 2D animation, but in 3D, the entire body still needs to be visible. So again, even though computers are being used, with new technology comes with way more considerations. Whether you're using drawing in 2D or computing in 3D, animators and filmmakers alike look to storyboards to plan out each frame. Unlike live-action, animation movies can't rely on camera tricks in a shot. Storyboards are the lifeline for creating animation. Here are the storyboards used for Disney's classic animated feature *Aladdin* organized in [StudioBinder's storyboard tool](#).

Motion Graphics

Motion Graphics are pieces are digital graphics that create the illusion of motion usually for ads, title sequences in films, but ultimately exist to communicate something to the viewer. They're often combined with sound for multimedia projects. They're a type of animation used mostly in business, usually with text as a main player. Below are a few examples of motion graphic animation, using the top trends of today.



Stop Motion

[Stop motion](#) encompasses claymation, pixelation, object-motion, cutout animation, and more. But the basic mechanics are similar to the traditional style like a flipbook. However, instead of drawings, stop motion adjusts **physical objects** in each frame. If moved in small increments, captured one frame at a time, the illusion of motion is produced. Whether puppets, clay, or even real people, these manual adjustments can make it a long, arduous process. [Wallace and Gromit](#), [Chicken Run](#), and [The Nightmare Before Christmas](#) are all great examples of stop motion films.



Stop motion is definitely an older form of animated storytelling, especially compared to 3D computer animation. But the process of animating pictures dates back way before Disney or Pixar.

History of animation

While it's unclear when and where animation first came to life, the concept of storytelling has been around for centuries. From shadow puppetry in about 200 A.D., to the magic lantern in the 1650s, the first real image projector — telling a story through motion has been happening forever. But it was in 1832 when the Phénakisticope was invented by Joseph Plateau that the first widespread *animation* device came into place. Using the persistence of vision principle, it created a fluent illusion of motion. When multiple images blend into a single moving image in the brain it's called persistence of vision. See below.

