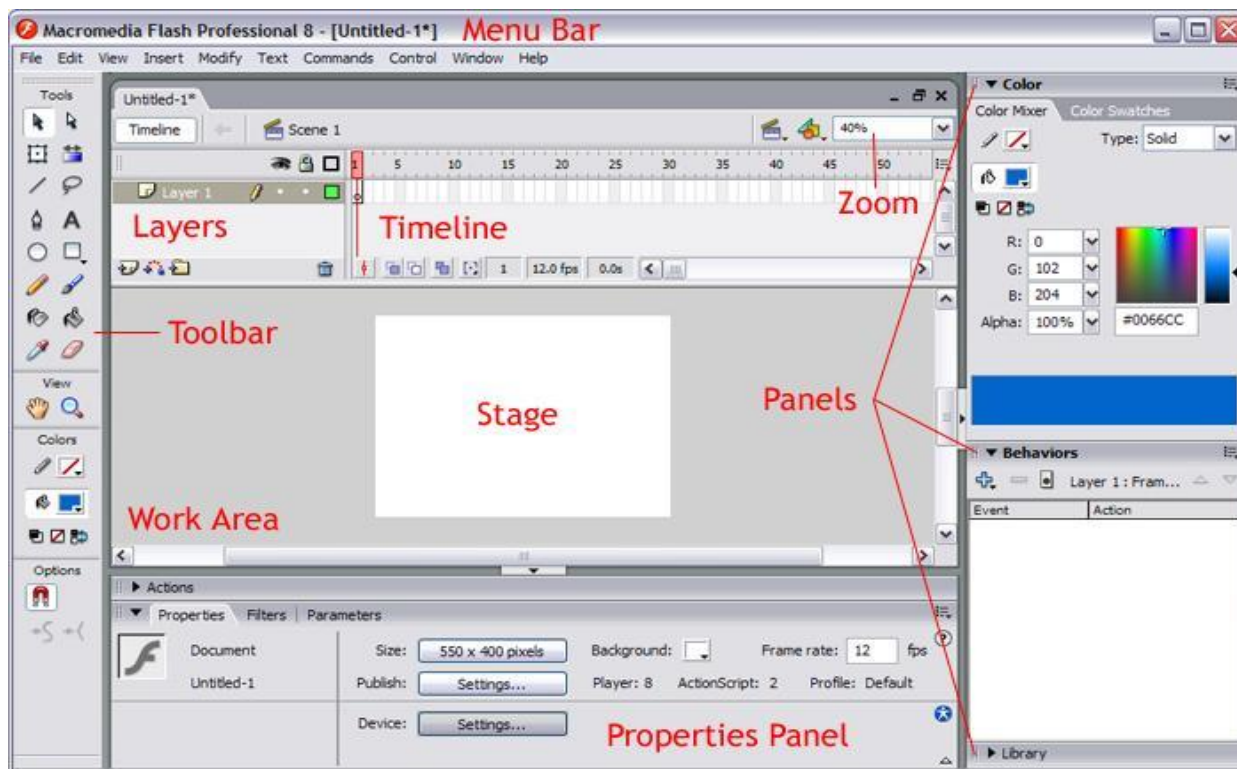# FLASH

FLASH

Bitmap Graphics	Bitmap Graphics
Bitmaps are created with lots of dots	Vector graphics are defined with equations that specify lines, shapes, and locations
Bitmap image is displayed on monitor with pixels	Blank space does not have to be recorded
Bitmap images cannot be scaled because of losing their quality or clarity	Vector graphics are scalable
Its files are big than vector graphics	File sizes are usually smaller than bitmap file sizes

Component of Flash Interface

Stage is the actual canvas in flash where all the objects to be included in a movie or animation are placed. It allows to the draw the graphics and preview the movie in design time.

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Timeline : The Timeline is used to organize and control the contents of a movie over time in the layers and frames so that each movie instance can occur at the correct time.

The major components of the Timeline are

Layer Panel→ Normal Layer/Mask Layer/Guided Motion Layer

Frames→ Blank Frames/Blank Key Frame/Key Frame/ End of Animation Frame

Play-head.

Tools on Time Line→ Onion Skin/Onion Skin Outlines/Frame Per Second/Current Frame Position

Layer helps us to organize the artwork in your document. When we create a flash document it contain one layer but we can add more. Objects are placed in layer to create animation.

Working with layers has several advantages:

- You can draw and edit objects in one layer without affecting objects in another layer.
- You can lock layers (to protect their embedded objects from unwanted editing)
- You can hide layers, make them visible (i.e. you can see their objects in the workspace), or you can display just the outlines of their objects.

Different Types of Layer

1. **Normal Layer** by default all layer added on time line are normal layers, which means all objects on layer will appear on movie,
2. **Motion Guide Layer** a motion guide layer contains an animation path that links to an object on another layer. It is always added above the layer which is linked it is not visible when we run the movie
3. **Mask Layer** A mask is used to hide any layer linked to it. Only certain portions of the underlying layer appear through mask design. While other parts of layer are hidden or masked.
4. **Sound Layer:** it is added automatically on timeline when we add sound on stage

Inserting a New Layer

Insert > Layer   or   Click "Insert Layer" icon at bottom of layer panel   in Timeline

- **Copy Layer**
    1. Click layer name to select the entire layer.
    2. Edit > Copy Frames.
    3. Click **Add Layer** button to create new layer.
    4. Select new layer and choose Edit > Paste Frames.
- **Copy Contents of Layer Folder**
    1. Click triangle to left of folder name to collapse it, if necessary.
    2. Click folder name to select the entire folder.
    3. Edit > Copy Frames.
    4. Insert > Layer Folder to create new folder.
    5. Select new folder and choose Edit > Paste Frames.

As we work with your animation, you can hide layers to prevent the stage from getting cluttered we can lock layers to prevent accidental changes to the objects on them.

To delete a layer, select it by clicking on the layer name and then clicking on the trash can icon

A frame represents a particular instant in time and contains the content of the Stage at that instant

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Key frames*:* Frames that define a change in what is displayed in a movie or include frame actions to modify a movie. When you open a new blank movie document, it contains one layer with one blank keyframe. Keyframe is denoted by black circle

Blank Key frame indicates the beginning point for which there is no content on the layer. **Blank Key frame** is denoted by outline circle
End of Content Sequence indicates the end point for which there is the same (or no) content on the layer

Playhead- displayed as a red bar, identifies the current frame as it is displayed on the Stage.
When the movie plays the playhead plays through the frames until all the frame content has been displayed**.**

Frame rate: the speed of animation in measured in **FPS (Frame Per Second**) Frame rate tell how many frame will be covered/displayed in 1 Second. **Default rate is 12fps**

A scene is a clip of a movie which can be treated as an entire single unit all on its own and arranged around other clips. The advantage of breaking the movie into scenes is that every scene can be accessed individually and thus the sequence or order of scenes can be changed.

Stroke: stroke is an outline of an image. Each image can consist of a stroke and a fill. To create a shape stroke and fill are two primary elements.
Default stroke style: the default **storke style is solid,** meaning a solid line will be drawn.

PANELS: panels are the small windows that let us to see and make change in the properties of objects and work with color, text, instances etc.
Example: Properties panel, effect panel Library Panel, Color Panel

The Property Inspector
In the Property inspector, you can set the attributes of objects as you work. You will use the Property inspector frequently when working in Flash Professional 8. To open the Property inspector:

Library panel is used to access, organize, and modify symbols in a document's library. Symbols are stored in a document's library. The library also stores imported bitmap images and sounds

Symbol : A reusable graphical object that is stored in a Library. You can then create multiple instances of the symbol. There are three symbol types: graphic, button, and movie clip.

Graphic **Symbol** Used for static images and to create reusable pieces of animation that are tied to the Timeline of the main movie

Movie Clip **Symbol** Movie inside a movie. On their own time, not necessarily in sync with the main timeline.Good for interactive things and sounds.

Buttons **Symbol** Used to create interactive buttons in a movie that respond to mouse clicks or other actions. You define the graphics for each of the various button states, and then assign particular action to an **instance** of a button.
Instance of Symbol is copy of Symbol on Stage. All instances of a symbol share the same properties, animations, code, etc., but can be in different places and times on the timeline

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Any change in Instance will not be reflected on Symbol . Any Change in Symbol will be automatically will be reflected in all instance

The **onion-skinning** feature allows the designer to see multiple frames and how their movements relate to the current frame. When creating an animation, this feature can be a great help to see what the objects in the preceding and succeeding frames look like.

The various selection tools available are:
- **Arrow tool** : Used to grab, select and move items on the Stage.
- **Subselect tool** : Displays edit points that can be adjusted to change the shape of a line.
- **Lasso tool**: Used to select irregularly shaped object on the Stage.

GAP SIZE: it is tool of paint bucket tool, when a shape without a fill has as outline that is not closed (such as a circular line with ends that do not meat); then the paint bucket uses Gap size modifier to fill the color.

ALPHA VALUE: using alpha value we can add transparency effect to a color. At 100% alpha the color is opaque. All 0% the color is entirely transparent. The range in between affects the level of translucency the color has applied.

A filter is a special graphic effect which can be applied to movie clips, buttons, and text
Applied using the Filters section of the Property inspector Effects are -Drop shadow/Blur/ Glow

Animation illusion of motion by creating a change over time (changing the contents of successive frames). Two Types of Animation
1. **Frame-by –Frame Animation**   2. **Tween Animation**

Frame-by-frame animation	Tweened animation
- Flash animates object gradually over several consecutive frames - You can control action in every frame - Can be time-consuming and result in large file size	- Flash automatically creates animation between two keyframes - You define starting and ending keyframes, then modify object/symbol - Types of tweens - Motion tweens - Shape tweens

<u>TWEENING</u>: in tweening we select the starting and finishing points for an object and flash animates it by filling in between , tweened animation is called tweening.

Motion Tweening	Shape Tweening,
In motion tweening, you define properties such as position, size, and rotation for an image, group, or text block at one point in time, and then you change those properties at another point in time.	In shape tweening, you draw a shape at one point in time, and then you change that shape or draw another shape at another point in time. Flash interpolates the values or shapes for the frames in between, creating the animation
Motion Tweening is done on Symbol or Group	Shape Tweening is done on images/shapes not on symbol
It is Denoted by Purple Grey Color on time line	It is denoted by Green color on time line
can also apply a motion tween along a Guided path.	Cannot apply a shape tween along a Guided path

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Easing property is used easing to speed up or slow down start or end of an animation
  - ➢ Object eases in: starts out slow, then speeds up at the end
  - ➢ Object eases out: starts out fast, then slows down

Publishing	Exporting
1. Publishing is preparing movie files and accompanying HTML codes for uploading movies on the Internet. 2. Settings can be saved for reuse. 3. A movie is published only if the recipients are expected to play it on the internet using Flash player .	1. Exporting is saving a movie file in different formats to be played using a particular player. 2. Settings cannot be saved. 3. A movie is exported from Flash only if the recipients are expected to play it using software other than Flash .

Publishing Formats :   swf, html,gif,jpg,png,mov,Windows Projector(.exe) macintosh Projector(.hqx)
Exporting Formats: swf,avi,mov,jpg,gif,bmp,png,wav,wmf

Windows Projector(.exe) These are standalone format which can play on Windows Platform without Flash Player installed
Macintosh Projector(.hqx) These are standalone format which can play on Mac(Apple) Platform without Flash Player installed

.FLA	.SWF
i) .FLA is the extension of the flash source file. ii) .FLA file can be opened and edited at any point of time	i) .SWF is the extension of the flash publish file. ii) .SWF file cannot be edited, it can only be viewed.

Publish Preview option: The Publish Preview option allows one to preview the movie in a browser before publishing to see if the movie is appearing fine

Using Sound in Flash
There are several ways to use sound in Flash. You can loop sounds to play continuously, independent of the timeline, or synchronize your sounds to an animation. You can import and edit your sounds in the Sound Panel.

Importing
    Import sounds into Flash by choosing **Import** from the **File** menu. The following audio file formats can be imported into Flash:
  - • WAV
  - • AIFF
  - • MP3

If you have QuickTime 4 or higher, you can also import these file formats:
- • WAV (Macintosh and Windows)

Flash stores audio files in the Library as a symbol along with the graphics, movies and buttons. Sound files are indicated by a loudspeaker icon. Because the sound is a symbol, you only need one copy of it and you can use it in many ways in your Flash movie. In the Library and on the Timeline, audio files are represented as sound waves.

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Two types of sounds in Flash -- event sounds and stream sounds

- **Event sounds** must download completely before they start playing and they will continue playing until explicitly stopped (usually by a stop action). Event sounds are associated with an event such as a mouse click, and are independent of the Timeline.
- **Stream sounds** begin playing as soon as there's enough data to play. These sounds are synchronized to the timeline. Flash forces the animation to keep in sync with the sound. If it can't draw frames fast enough, Flash will drop frames to keep the sound in sync.

Editing with the Sound Panel

The Sound Panel allows you to modify the properties of the selected sound, for example:
- specify if the sound is an Event or Stream
- start a new sound, or Stop the sound
- apply effects to the sounds, such as None (which strips any previous effects off the sound), Fade In or Out, Left to Right, etc.
- If you choose Custom, you can modify the in and out points of the fade, the duration, etc. in the window that opens up. Click on the boxes at the corners of each channel and also add points along the line by clicking.

Steps of Shape Tweening
- Open up a new flash stage
- Set the background colour
- Set the frames per second rate
- On the left hand side select the shape tool- draw a circle on you stage at frame 1
- Select colour of your circle
- Once drawn circle onto stage –go to key frame 30-press f6 button to insert key frame
- In key frame 30 delete the shape that is there and instead using the rectangle draw tool draw out a rectangle
- Select a colour for the rectangle-make it different to the original circle
- Choose any keyframe between 1 and 30 ideally 15-go to properties tab
- Select shape tween

Steps of Motion Tweening
- Open up a new flash stage
- Set the background colour
- Set the frames per second rate
- On the left hand side select the shape tool- draw a circle on you stage at frame 1
- Select colour of your circle
- Select Circle alongwith Stroke with the help of selection arrow tool.
- Right click and choose **"Convert to symbol" option to convert circle to symbol/press F8 key to convert it to symbol**
- Go to key frame 30-press f6 button to insert key frame
- In key frame 30 drag the Circle Symbol to any other position . You can change the size of symbol by suing resize tool from tool box
- Choose any keyframe between 1 and 30 ideally 15-Right Click and Select Motion Tween

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Animating along a Guided Path
Let's say you want a small airplane to follow a path from the ground up to the clouds.

- Create a movie symbol of a little airplane with an animated propeller.
- Drag the symbol out onto the stage. You may want to add a runway and some clouds in the sky to make your animation more complete.
- Select the airplane layer and from the **Insert** menu, choose **Motion Guide**. This creates a new layer called a Guide Layer on top of the airplane layer.
- Insert another keyframe in the Guide:airplane layer at the point where you want the motion to stop.
- Using the Pencil tool, draw a curve that you want the airplane to follow from the runway to the clouds. (It won't show up in the movie)
- Select the first keyframe in the airplane layer. Select the Arrow tool and move the airplane to the beginning of the curve.
- Now select the last keyframe. Move the airplane along the curve to the end of the curve.
- Double-click the first keyframe to open the Frame panel. Choose Motion from the Tweening menu and check Snap (snaps the registration point to the path).
- Scrub along the Timeline, and the airplane will follow the curve from first to last frame. When you publish, the plane's propellers will move.

Steps for Masking

i. Draw an object , say a text " learn flash 5.0 in 3 days" with the help of text tools on layer 1 at frame 1st and press ctrl+g. (Rename it Background layer by double click on Layer)

ii. Select the frame 50. press F6 to make it KeyFrame

iii. Click on insert new layer icon on layer panel , a layer will be created above the background layer. Select the frame 1 of new layer 2 (Rename it mask layer by double click on lalyer)…

iv. Draw a solid circle on the Mask layer at frame 1 and press F8 to convert it to Symbol

v Press F6 at frame 50 to make it key Frame , move the circle symbol to other side of stage over the text

v. Right click on any frame between 1 to 50 in mask layer and select create motion tween .

vi. Right Click on Mask Layer at Layer Panel and choose "Mask". It will make   Background layer disappear and masking is done

vii Play the Movie by pressing **Ctrl+ Enter Key**