**Text File Formats**

**1. \*.DOC File Extension**

Microsoft Word Document

Developer : Microsoft

Format : Binary

A DOC file is a word processing document created by Microsoft Word, or another word processing program, such as OpenOffice Writer or Apple Pages. It may contain formatted text, images, tables, graphs, charts, page formatting, and print settings.

DOC files are used to create a variety of documents including letters, resumes, essays, and invitations. When you create a document in Word you can choose to save it in the DOC file format. The program then creates a DOC file to store the contents of the document, which can be closed and opened again for further editing. When you are done editing your DOC file you can print it or save it as another file such as .PDF or .DOT.

The DOC file was designated as Microsoft Word's primary format in 1983. DOC files were saved in the same format up until Word 97 when another version of the binary format was introduced and used by Microsoft Word 97 to 2003. In 2006, the DOC file format was replaced by the .DOCX file format with the release of Microsoft Word 2007. DOCX files store documents in the OpenXML format.

Word is the most popular word processing application in the world. It comes with every edition of the Microsoft Office suite and is used in home, academic, and business environments.

**2. \*.DOCX File Extension**

Microsoft Word Open XML Document

Developer : Microsoft

Format: ZIP

A DOCX file is a document created by Microsoft Word or another word processing program, such as OpenOffice Writer or Apple Pages. It contains formatted text but may also include images, drawn objects, and other document elements. DOCX files are widely used in home, academic, and business environments for drafting letters, resumes, invitations, newsletters, and other documents.

Unlike .DOC files, which store document data in a single binary file, DOCX files are created using the Open XML format, which stores documents as a collection of separate files and folders in a compressed zip package. Within a DOCX file are XML files and three folders, docProps, Word, and \_rels, which hold the document properties, content, and relationships between the files. This structure is designed to make document content more accessible. For example, document text is saved using plain text files and document images are stored as individual image files within the DOCX file. These files may also include page formatting information, authorship data, and document review notes.

DOCX files can be opened by Word 2007 or later for Windows, or with Word 2008 or later for Mac OS X. They may also be opened with earlier versions of Word for Mac and Windows via Open XML document support.

NOTE: To explore the contents of a DOCX file manually, rename the ".docx" extension to ".zip" and then decompress the resulting file with any zip decompression utility.

**3. \*.ODT File Extension**

OpenDocument Text Document

Developer : Oracle

Format : Zip

An ODT file is a text document created by various word processors, such as the Writer program included in Apache OpenOffice and LibreOffice. It contains different elements such as text, images, drawn objects, and styles. ODT files are formatted using the OASIS OpenDocument XML-based standard.

ODT files are commonly created and opened by the Writer word processor, which is one of several programs available in the OpenOffice and LibreOffice suites. It is similar to the Word program available in the Microsoft Office suite. The ODT file is the main file used by Writer to save documents the same way that Word saves documents in the .DOCX file.

OpenDocument text files can be opened and edited with any OpenOffice-compatible program, including: NeoOffice (Mac), AbiWord (Mac & Windows), and KWord (Unix). They can also be imported into Google Docs, Google's web-based word processor included with Google Drive. ODT files can also be opened in Microsoft Word and saved as DOCX files.

**4. \*.RTF File Extension**

Rich Text Format File

Developer : Microsoft

Format : Text

An RTF file is a common text file format that supports "rich text." It includes several types of text formatting, such as bold type, italics, different fonts and font sizes, and custom tab settings. RTF files also support objects and images, such as .JPG and .PNG files, saved within the text file.

The Rich Text Format (RTF) was introduced by Microsoft in 1987 and developed up until 2008 when Microsoft stopped updating the format. There have been many revisions to RTF over the years with most word processors supporting some version of the format.

One of the main benefits of RTF files is its interoperability between word processors and operating systems. This means that you can save the file in WordPad in Windows and open it in TextEdit in OS X with little change in formatting. Any changes in formatting can be attributed to the different versions of the RTF specification supported by different programs and program versions.

**5. \*.TEX File Extension**

LaTex Source Document

Developer : Donald Knuth

Format : Text

A TEX file is a source document prepared by LaTeX, a high-quality typesetting system. It can include text, symbols, mathematical expressions, and graphics. TEX files are commonly used in computer science, electrical engineering, statistics, economics, and physics for typesetting articles, books, and other publications.

TEX files contain plain text unlike the .DOCX and .ODT files created by the Microsoft Word and LibreOffice Writer WYSIWYG programs, which contain formatted text. The TEX file typically contains markup conventions that define the structure of the document such as a letter, book, or article.

Since TEX files contain plain text they can be opened with any text editor. However, the files are most commonly used by the TeXworks, LaTeX Editor, LyXMac, and Texmaker programs.

NOTE: TEX files can LaTeX files also use the .LTX extension.

**6. \*.WPS File Extension**

Microsoft Works Word Processor Document

Developer : Microsoft

Format : Binary

A WPS file is a document created with Microsoft Works word processing software. It contains document elements similar to a Microsoft Word (.DOC) document, but does not include advanced formatting options and macros that a Word document may contain.

Microsoft Works 9 was the final version of Works and the software was discontinued in 2010. However, Windows users can still open WPS files with Microsoft Word or Microsoft Publisher. To open WPS files with either of these programs, you may need to select "Word 2000" or "All File Types" in the Open dialog box. You can also convert Works documents to Word documents using the "Microsoft Works 6–9 File Converter" application.

The macOS (Mac OS X) version of Microsoft Works was discontinued after version 4.0. Therefore, most modern Works documents cannot be opened using Works for Mac. However, WPS files can be opened in Mac OS X using NeoOffice 2.2 or later, which includes the "libwps" library.

On Linux systems, WPS files can be opened using OxygenOffice Professional or another variation of the OpenOffice.org suite that includes the "libwps" library. Some Linux distributions may also include a program called wps2odt, which uses libwps and can convert WPS files to .ODT files. A package called "writerperfect" may also include wps2odt if the appropriate version of libwps is available.

Also, the Writer program included with the free LibreOffice suite is another program that supports WPS files. It is a great alternative for Windows, macOS, and Linux users.

NOTE: The WPS format was discontinued by Microsoft in 2006 and was replaced by the standard Microsoft Word ".DOC" format.

**7. \*.LOG File Extension**

Log File

Developer : N/A

Format : Text

A LOG file is a log used by various operating systems and programs. It typically contains a plain text log of certain events with their timestamps. LOG files may be created by the operating system to keep track of system events or by a software installation program to list location and names of installed files.

Web servers also generate log files to track visitors and to monitor bandwidth usage. Web stats programs allow Web hosts to analyze log files through generated charts and graphs, which present logged website traffic data in a graphical format.

**8. \*.MSG File Extension**

Outlook mail Message

Developer : Microsoft

Format : Binary

An MSG file is an email message, contact, appointment, or task created or saved within Microsoft Outlook. It may contain one or more email fields, which includes the date, sender, recipient, subject, and message body, or contact information, appointment details, and one or more task descriptions. MSG files are also compatible with other programs that use Microsoft's Messaging Applications Programming Interface (MAPI).

You can create an MSG file by simply dragging and dropping a message, appointment, contact, or task item from an Outlook folder to a folder in Windows Explorer. The message subject will be used as the name of the MSG file. You can also drag and drop the MSG file back into Outlook and it will be formatted appropriately to appear the same way it did before it was exported.

**9. \*.PAGES File Extension**

Developer : Apple

Format : Zip

A PAGES files is a document created by Apple Pages, a word processor and page layout program. It may be a basic text document or a complex multi-page brochure. PAGES files can include text, pictures, tables, graphs, and charts and may be created from a blank page or built from a template.

PAGES files are stored in the .ZIP format and include a .JPG file and an optional .PDF file that provide a preview for the document. Therefore, if you want to view the contents of a PAGES file manually in Windows, use the following instructions:

1. Rename the ".pages" file extension to ".zip."

2. Extract the resulting Zip file with a Zip decompression utility. The extracted files should contain a folder named QuickLook. Navigate to this folder.

3. In the QuickLook folder, open the file Thumbnail.jpg. This file only gives a preview of the first page of the document, but can still be helpful in some situations.

4. In the QuickLook folder, there may also be a PDF file named Preview.pdf. Open this file to view a preview of the entire PAGES document. Note that the PDF file is only created if the user chose to save the original document with additional preview information in Pages.

NOTE: Pages is part of Apple's iWork suite, which also includes Keynote (for presentations) and Numbers (for spreadsheets).

**10. \*.TXT File Extension**

Plain Text File

Developer : N/A

Format : Text

A TXT file is a standard text document that contains unformatted text. It is recognized by any text editing or word processing program and can also be processed by most other software programs.

TXT files are useful for storing information in plain text with no special formatting beyond basic fonts and font styles. The file is commonly used for recording notes, directions, and other similar documents that do not need to appear a certain way. If you are looking to create a document with more formatting capabilities, such as a report, newsletter, or resume, you should look to the .DOCX file, which is used by the popular Microsoft Word program.

If you have a computer running Windows, Notepad and Wordpad come bundled with the operating system (OS) and allow you to create and edit TXT files. If you have a computer running macOS (OS X), TextEdit comes bundled with the OS and is a good choice for creating and editing TXT files.

NOTE: Various hardware devices, such as smartphones and the Amazon Kindle, and web browsers, such as Chrome and Firefox, also recognize plain text files.

**Audio File Formats**

**1.\*. WAV Audio File Extension:**

**Microsoft** Developed the WAV Audio file format. WAV is short for "Waveform Audio File Format," and is pronounced "wave." WAV files are similar to .AIF files, but they are based on the Resource Interchange File Format (RIFF), rather than the Audio Interchange File Format (AIFF). WAV files are most often seen on Windows-based computers, while AIF files are more common on Macintosh systems.

A WAV file is an audio file that uses a standard digital audio file format utilized for storing [waveform](https://techterms.com/definition/waveform) data. It allows audio recordings to be saved with different [sampling](https://techterms.com/definition/sampling) rates and [bitrates](https://techterms.com/definition/bitrate) and are often saved in a 44.1 KHz, 16-bit, stereo format, which is the standard format used for CD audio.

**2.\*. MP3 Audio File Extension:**

**Moving Picture expert Group** Developed this format. An MP3 file is an audio file saved in a compressed audio format developed by the Moving Picture Experts Group (MPEG) that uses "Layer 3" audio compression. It is commonly used to store music and audio books with near-CD quality sound (stereo, 16-bit) and roughly 1/10 the size of a .WAV or .AIF file. The quality of an MP3 file depends largely on the [bit rate](https://techterms.com/definition/bitrate) used for compression. Common bit rates are 128, 160, 192, and 256 kbps. Higher bit rates result in higher quality files that also require more disk space.

MP3 files are supported by most portable music players, such as the Apple iPod and Sony Walkman devices. They can also be played on the Amazon Kindle. Symbian OS mobile phones can play MP3 files using the UltraMP3 program.

**3.\*.MKA Audio File Extension :**

**Matroska** is the Developer of MKA file format. It Stands for Matroska Audio File

Format : Binary

Audio container format that supports several types of audio compression algorithms; related to the [.MKV](https://fileinfo.com/extension/mkv) video format, but only contains audio data.

MKA audio files can also be played on Palm, Symbian, and Pocket PC mobile devices using the CorePlayer Mobile software.

**4.\*. M4A Audio File Extension:**

**Apple** is the developer of this file format. An M4A file is an audio file created in the MPEG-4 format, a multimedia container format used to store compressed audio and video data. It contains audio encoded with either the Advanced Audio Coding (AAC) [codec](https://techterms.com/definition/codec) or the Apple Lossless Audio Codec (ALAC).

M4A files are similar to [.MP4](https://fileinfo.com/extension/mp4) video files since both file types use the MPEG-4 container format. However, M4A files only contain audio data. The use of the ".m4a" extension arose due to the confusion between MPEG-4 video files and MPEG-4 audio-only files.

The iTunes Store provides songs in the M4A format. These songs are encoded using AAC compression, which significantly reduces the size of each file. Songs that include copyright protection have an [.M4P](https://fileinfo.com/extension/m4p) extension.

**NOTE:** Windows Media Player 11 requires the K-Lite Codec Pack in order to play M4A files. Windows Media Player 12 (included with Windows 7) provides native support for the M4A format.

**5. \*.WMA Audio File Extension :**

**Microsoft** is the developer of this file format. A WMA file is an audio file saved in the Advanced Systems Format (ASF) proprietary format developed by Microsoft. It contains Windows Media Audio and [metadata](https://techterms.com/definition/metadata) objects such as the title, artist, album, and genre of the track. WMA files are similar to [.MP3](https://fileinfo.com/extension/mp3) files and primarily used for streaming music from the web.

ASF is Microsoft's proprietary digital audio and video container format. If it contains Windows Media Video instead of Windows Media Audio it uses the [.WMV](https://fileinfo.com/extension/wmv) extension. WMA and WMV files are the same as [.ASF](https://fileinfo.com/extension/asf) files but are more commonly used.

Microsoft Windows Media Player 9 was the last version of the Windows Media Player developed for Mac OS X. However, Mac users can use Flip4Mac WMV (also known as Microsoft Windows Media Components for QuickTime) to play WMA files. Windows Media video files use a [.WMV](https://fileinfo.com/extension/wmv)extension.

**6. \*.M3U Audio File Extension :**

**Nullsoft** is the developer of this file format. An M3U file is a media playlist file supported by several media players such as Winamp and iTunes. It contains a playlist of MP3s and other audio or video files and lists the locations of media files in a [plain text](https://techterms.com/definition/plaintext) format.

M3U playlists are typically used for audio playlists, but some may also include references to video files. M3U files contains references to media files, but not the actual files themselves.

NOTE: "M3U" is short for "MP3 URL" or "Moving Picture Experts Group Audio Layer 3 Uniform Resource Locator."

**7. \*.IFF Audio File Extension :**

**Electronic Arts** is the developer of this format. An IFF file is a universal file format created by Electronic Arts. It may contain image, text, or audio data and is used for interchanging different types of data across applications and platforms. IFF files are supported by many programs and are used as the basis for several other file formats, including [AIFF](https://techterms.com/definition/aiff).

IFF files are comprised of sections of data called "chunks," which are defined by four-letter IDs. There are three main chunk types, each of which may contain text, numerical data, or raw data:

* FORM: specifies the format of the file
* LIST: includes the properties of the file
* CAT: contains the rest of the data

The IFF format is also known as "EA IFF 1985" since Electronic Arts designed the file format in 1985.

**8. \*.AIF Audio File Extension :**

**Apple** is the developer of this file format. An AIF file is an audio file created using the Audio Interchange File Format ([AIFF](https://techterms.com/definition/aiff)). It contains uncompressed CD-quality audio similar to a [.WAV](https://fileinfo.com/extension/wav) file and is commonly used to store standard CD audio.

Apple Computer developed the AIFF format, basing it on Electronic Arts' [.IFF](https://fileinfo.com/extension/iff) format. Standard AIFF files use a sampling rate of 44.1KHz, are 16-bit, and have two channels for stereo sound.

**9. \*.MID Audio File Extension :**

A MID file is a standard [MIDI](https://techterms.com/definition/midi) (Musical Instrument Digital Interface) file used by music authoring and mixing programs as well as MIDI hardware devices. It contains music data, such as what notes are played, when they are played, how long each note is held, and how loud each note is played.

MID files are used to encode MIDI data into a standard format that is interoperable between different types of software programs and hardware devices. They may also contain controller data for a device. For example, a MID file can be used to change instruments on a MIDI hardware device or modify sustain pedal information.

MID files contain attributes of music data rather than music data itself. They can be played back using software instruments that interpret this data.

**10. \*.MPA Audio File Extension :**

An MPA file is an audio file compressed with MPEG Layer II compression, which reduces the file size while minimally affecting the overall sound quality. It is based on the MPEG-1 audio-coding standard and was later updated for the MPEG-2 specification.

**Video file format**

**1.\*.AVI file Extension:**

Developer : Microsoft

Theory : Developed by Microsoft and introduced to the public in November 1992 as part of its Video for Windows technology, the AVI format is one of the oldest video formats. It is so universally accepted that many people consider it the de facto standard for storing video and audio information on the computer. Due to it’s simple architecture, AVI files are able to run on a number of different systems like Windows, Macintosh, Linux; is also supported by popular web browsers. AVI files stores data that can be encoded in a number of different codec’s, although most commonly with M-JPEG or DivX codecs. This means that all AVI files, while they may look similar on the outside, differ substantially from one another on the inside.

AVI video file format became swept up in the rise of the Internet, allowing individuals to share video files. Today, AVI file format remains one of the most popular among different video formats. Both amateurs and professionals alike rely on it for video production.

**2. \*.FLV (Flash Video Format)**

Developer : Macromadia

Theory : FLV files are videos that are encoded by Adobe Flash software, usually with codecs following the Sorenson Spark or VP6 video compression formats. They can be played via the Adobe Flash Player, web browser plugins or one of several third party programs. Since virtually everyone has the player installed on their browsers, it has become the most common online video viewing platform used on the Web today. As almost all video sharing sites such as Youtube stream videos in Flash, practically all browsers support and are compatible with the Flash Video format and can play the video with ease. In addition to being an online video viewing format, the Flash Video format is also what many video-sharing sites convert videos to, from formats that were uploaded by their users in something other than Flash. This is because videos in the FLV format remain in high quality even after compression to a smaller file size, which means that the videos on the Web load quickly and won’t spend a lot of time using up bandwidth. Some notable users of the Flash Video are Youtube, Yahoo! Video, VEVO, Hulu and Myspace among many others.

**3. \*.WMV (Windows Media Video)**

Developer : Microsoft

Theory : Developed by Microsoft, WMV was originally designed for web streaming applications, as a competitor to RealVideo, but it can now cater to more specialized content. WMV files are the tiniest video files over the Web, as their file size decreases significantly after compression, which results in poor video quality. However, one advantage of this small file size is that it is probably the only video file format that allows users to upload and share their videos through the e-mail system. Being a Microsoft software, the Windows Media Player is the main application that is used to play WMV files on all Microsoft’s Windows operating systems, but there are also WMV players available for free for the Macintosh operating system.

**4. \*.MOV (Apple QuickTime Movie)**

Developer : Apple

Theory : Developed by Apple. Inc, the QuickTime file format is a popular type of video sharing and viewing format amongst Macintosh users, and is often used on the Web, and for saving movie and video files. In recent years, Apple came up with a newer version called QuickTime X, currently available on Mac OS X Snow Leopard, Lion and Mountain Lion. MOV files are most commonly opened via the Apple QuickTime Player for the Macintosh Operating System. However, MOV files are not just limited to being played on Apple computers, as there is a free version of the QuickTime Player available for the Windows Operating System among many other players. Considered one of the best looking file formats, MOV files are of high quality and are usually big in file size.

**5. \*.MP4 (Moving Pictures Expert Group 4)**

Developer :- Motion Pictures Expert Group

Theory :- MP4 is an abbreviated term for MPEG-4 Part 14, a standard developed by the Motion Pictures Expert Group who was responsible for setting industry standards regarding digital audio and video, and is commonly used for sharing video files on the Web. First introduced in 1998, the MPEG-4 video format uses separate compression for audio and video tracks; video is compressed with MPEG-4 or H.264 video encoding; and audio is compressed using AAC compression. The MP4 file format is also another great file sharing format for the Web, MP4 file sizes are relatively small but the quality remains high even after compression. MP4 standard is also becoming more popular than FLV for online video sharing, as it compatible with both online and mobile browsers and also supported by the new HTML5.

**6. \*.Mpg format**

Developer :- Moving picture expert group

Theory :- The Moving Picture Experts Group is an organization that develops standards for compression of digital video and digital audio. This group is supported by the International Standardization Organization (ISO).The format is defined in the ISO 13818, which has eleven sections. Each section is in an independent file named as 13818-I, where I is the number of the section. Amongst them, section 2 and section 3 describe the video and audio coding format respectively.

Mpeg is based on television standards used in the United States. As European and Japanese standards are different, MPEG players must be designed to recognize these variations.

**7. \*.MPEG-4**

Developer : Moving picture expert group

Theory : MPEG-4 is a collection of methods defining compression of audio and visual (AV) digital data. It was introduced in late 1998 and designated a standard for a group of audio and video coding formats and related technology agreed upon by the Moving Picture Experts Group (MPEG) under the formal standard . Uses of MPEG-4 include compression of AV data for web (streaming media) and CD distribution, voice (telephone, videophone) and broadcast television applications.

MPEG-4 absorbs many of the features of MPEG-1 and MPEG-2 and other related standards, adding new features such as (extended) VRML support for 3D rendering, object-oriented composite files (including audio, video and VRML objects), support for externally-specified Digital Rights Management and various types of interactivity. AAC (Advanced Audio Codec) was standardized as an adjunct to MPEG-2 before MPEG-4 was issue

**8. \*. HEVC**

Developer : video coding experts group

Theory : HEVC stands for high-efficiency video coding. Also known as H.265, this new video codec will compress video files to half the size possible using the most-efficient current encoding format, MPEG-4, aka H.264 (used on Blu-ray discs and some satellite TV broadcasts). That will be one-quarter the size of files compressed using the MPEG 2 codec that most cable-TV companies still employ.

If you've ever watched a DVD or Blu-ray, caught up with a show using an on-demand service, streamed a film with Netflix or laughed at the latest viral video, you have benefited from a video codec. This technology compresses a video file into a smaller package, making it easier to store or transmit. The next generation of codecs — including a technology called HEVC — will make several things possible or easier to do.

**Animation File Formats**

**1. \*.SWF File Extension :**

Small Web Format (Flash) - originally "ShockWave Flash"

Developer : Micromedia

Contains : Animation/Multimedia/Video

SWF is a file extension for a [Shockwave](https://whatis.techtarget.com/definition/Shockwave) [Flash](https://whatis.techtarget.com/definition/Flash) file format created by Macromedia and now owned by Adobe. SWF stands for Small Web Format.

SWF files can contain video and vector based animations and sound and are designed for efficient delivery over the web.  SWF files can be viewed in a web browser using the Flash [plug in.](https://whatis.techtarget.com/definition/plug-in) This is a dominant format for displaying animated vector graphics on the Web and used in programs and games with action scripting.

**2. \*.SWI File Extension :**

SWisH Project File

Developer  : Adobe

Contains : Animation/Multimedia/Video

An SWI file is a [Flash](https://techterms.com/definition/flash) project developed with SWiSH, an easy-to-use Flash authoring tool. It can be used to create basic Flash animations, interactive Flash programs, and web-oriented Flash projects that can access database information. SWI files may also be used to convert video and PowerPoint files to Flash documents.

SWiSH projects can be exported in the standard Flash ([.SWF](https://fileinfo.com/extension/swf)) format, but may also be saved in other formats such as [.AVI](https://fileinfo.com/extension/avi) movies and executable Flash Projector files.

**3. \*.GIF File Extension :**

Graphics Interchange Format

Developer : CompuServe

Contains : Bitmaps/Animation

GIF is the abbreviation of *Graphics Interchange Format*. It was originally developed by CompuServe (an online service that was pretty successful in the early nineties). The format includes some key features which make it a unique and valuable format for the internet. These features include file compression, transparency, interlacing and storage of multiple images within a single file which allows for a primitive form of animation.

There are two versions of the GIF format; versions 87a and 89a. These versions were released in 1987 and 1989 respectively.

* GIF 87a: the initial version of the GIF file format supported [**LZW**](http://www.prepressure.com/library/compression-algorithm/lzw) file compression, interlacing, 256-color palettes and multiple image storage.
* Version 89a added background transparency and a few other additions such as delay times and image replacement parameters to make the multiple image storage feature more useful for animation.

Features of the GIF format:

~ Limited color palette

A GIF image can contain 2, 4, 8, 16, 32, 64, 128 or 256 colors which are stored in a color palette or color lookup table within the image file. Each color in the GIF color table is described in RGB values, with each value having a range of 0 to 255. CMYK colors are not possible in GIF.

~ Dithering

The limited number of colors in GIF is used to limit the file size of images. While a small image using 256 colors may take up 9.5 K, the same image using 32 colors takes up only 4.4 K and going down to 16 colors get it down to 1.9 K. Another  trick that is used to limit the file size is dithering. This technique is used to create the illusion of greater color depth by blending a smaller number of colored ‘dots’ together. Dithering is not really a feature of GIF, it is simply a technique that is often used within GIF images. Dithering adds noise to the image and it reduces sharpness.

~ LZW compression

GIF supports LZW compression, which is a lossless compression algorithm that is also used frequently in prepress. TIFF images, for example, are also often LZW compressed.

~ Transparency

Transparency is the feature of the GIF89a format which allows for the specification of one of the colors in the palette to be ignored while processing the image for your display device.

~ Interlacing

Interlacing is another web-specific feature of GIF. It is a mechanism that makes images appear faster on-screen by first displaying a low-res version of the image and gradually showing the full version. Physically, an interlaced GIF just has the scanlines stored in an unusual order:

* The first pass has pixel rows 1, 9, 17, etc (every eighth row)
* The second pass has rows 5, 13, 21, etc. (every remaining fourth row)
* The third pass has rows 3, 7, 11, 15, etc. (every remaining odd row)
* The last pass has rows 2, 4, 6, etc. (all the even-numbered rows).

How the web browser chooses to display this is up to the browser. This feature cannot be used by prepress software.

~ Animation

The GIF89a specifications add a few enhancements to the file header which allows browsers such as Netscape to display multiple GIF images in a timed and/or looped sequence. This mechanism allows for small, rather crude animations and it is a very popular feature that used often used in banners. This feature is of no use for prepress software.

**4.\*.FLA File Extension:**

Adobe (Macromedia) Flash FLA Project File Format

Developer : Adobe

Contains : Animation/Multimedia/Video

An FLA file is an animation project created by Adobe Animate, a program used to draw and publish interactive animations. It contains graphics, video, text elements, audio, and other assets. FLA files are often saved as [.SWF](https://fileinfo.com/extension/swf) files for use on the web as they are viewable in most web browsers with the Flash plugin.

When you open an FLA file in the Animate environment you will see five main parts. The environment includes a stage that shows the visible area, a timeline that controls the timing of the elements, a tools panel that contains tools for working with elements in the project, a property inspector that displays information about elements, and a library panel that stores media elements.

Animate was formerly known as Flash, which was originally developed by Macromedia but then merged with Adobe in 2005. Flash became Animate in 2016.

The information included in the file consist of vector image data for use in animations, and timelines used to control animation playback, and audio.

In addition, it may also include “bitmapped” video content, and references to Action Scripts. Action Scripts are scripts used to provide interactivity to the project.

In addition, [FLA](https://en.wikipedia.org/wiki/Adobe_Flash#FLA) files saved in CS5 or later are also ZIP files that use open XFL format. This means that they can be opened and decompressed by programs such as 7z.

The XFL format has a folder structure. It is composed of files and folders that match a Flash file. It includes folders for the library and binary data, and XML files with settings and graphic information.

**5.\*.FLI File Extension**

Flic File Format

Developer : Autodesk

Contains : Animation

FLI is limited to images 320 by 200 [pixels](http://www.graphicsacademy.com/what_pixel.php) and allows a [palette](http://www.graphicsacademy.com/what_palette.php) of 256 colors (although the [palette](http://www.graphicsacademy.com/what_palette.php) can be changed from line to line to give more colors per frame).

FLI is based on a fixed frame rate specified in "ticks per frame" (there are 70 ticks per second), and has an implicit 6:5 [aspect ratio](http://www.graphicsacademy.com/what_aspectratio.php).

In theory, all FLI animations must loop, but in practice this requirement is often ignored.

The image data in FLI files is [compressed](http://www.graphicsacademy.com/what_compress.php) using a [Run-length compression](http://www.graphicsacademy.com/what_rle.php) scheme. This is suitable for animations, but is inappropriate for videos or [dithered](http://www.graphicsacademy.com/what_dithering.php) images.

The FLI format has largely been superseded by its close cousin, (but more flexible) [FLC](http://www.graphicsacademy.com/format_flc.php) format.

**6.\*.FLC File Extension:**

Flic File Format

Developer : Autodesk

Contains : Animation

This is the format developed by AutoDesk that is designed for storing brief animations. FLC can store images of variable size, and allows a [palette](http://www.graphicsacademy.com/what_palette.php) of 256 colors (although the [palette](http://www.graphicsacademy.com/what_palette.php) can be changed from line to line to give more colors per frame).

FLC supports a variable frame rate specified in frames a fixed frame rate specified in milliseconds per frame, and maintains information about the original [aspect ratio](http://www.graphicsacademy.com/what_aspectratio.php).

In theory, all FLC animations must loop, but in practice this requirement is often ignored.

The image data in FLC files is [compressed](http://www.graphicsacademy.com/what_compress.php) using a [Run-length compression](http://www.graphicsacademy.com/what_rle.php) scheme. This is suitable for animations, but is inappropriate for videos or [dithered](http://www.graphicsacademy.com/what_dithering.php) images.

**7.\*.APNG File Extension**

Animated Portable Network Graphics

Developer : [Mozilla Corporation](https://en.wikipedia.org/wiki/Mozilla_Corporation)

Contains : Bitmaps/Animation

APNG (Animated Portable Network Graphics) is a file format for storing [bitmap](http://www.graphicsacademy.com/what_bitmap.php) animations. It builds on the [PNG](http://www.graphicsacademy.com/format_png.php) file format with a backward-compatible design intended to allow older software that reads PNGs, to simply display the first frame of an APNG animation.

The advantage of using an APNG over [GIF](http://www.graphicsacademy.com/format_gif.php) is that it allows 24 bit [True Color](http://www.graphicsacademy.com/what_truecolor.php), and [alpha transparency](http://www.graphicsacademy.com/what_alphatransparency.php), whereas GIF is limited to a maximum of 256 colors and very basic[transparency](http://www.graphicsacademy.com/what_transparency.php).

The main disadvantage of using APNG is that although it is supported by several applications, web-browser support is patchy. Additionally, some developers of the [PNG](http://www.graphicsacademy.com/format_png.php) and [MNG](http://www.graphicsacademy.com/format_mng.php)file formats disapproved of APNG, and in particular the way that backward compatibility was implemented in the APNG format, as it does not allow older legacy software to negotiate for PNG instead of APNG, to distinguish between PNG and APNG once received, or even to alert the user to the presence of additional frames existing after the initial frame.

**8.\*.EVA File Extension**

Extended Vector Animation

Developer : Sharp Corporation

Contains : Vector Animation

EVA is a file format devised by Sharp Corporation in [**1996**](http://www.fun4birthdays.com/year/1990s_1996.html), and apparently very popular in [**Japan**](http://www.travelguide2japan.com/). It allows animations to be displayed using inside web-browsers using a special plug-in, in a similar way to how the [SWF](http://www.graphicsacademy.com/format_swf.php) files can be played used the Flash player plug-in.

The advantage of EVA is said to be very small files - it is is claimed to produce significantly smaller animation files than [SWF](http://www.graphicsacademy.com/format_swf.php) for example.

The disadvantages of EVA is the requirement for a browser plug-in to display files in the format, and the fact that the EVA Animator software (used for creating animations) is only available in [**Japanese**](http://www.downloadfocus.com/cat_language_japanese.php), and only works with Japanese versions of [**Microsoft Windows**](http://www.wildcomputer.com/software_os_win.php).

**9.\*.MNG File Extension**

Multi-image Network Graphics

Contains : Bitmaps/Animation

MNG (pronounced "ming") is a format for storing multiple [bitmaps](http://www.graphicsacademy.com/what_bitmap.php) and animations and is a close cousin of the [PNG](http://www.graphicsacademy.com/format_png.php) format.

When storing images, MNG allows both [lossless](http://www.graphicsacademy.com/what_lossless.php) compression similar to [PNG](http://www.graphicsacademy.com/what_png.php), and [lossy](http://www.graphicsacademy.com/what_lossy.php) compression similar to [JPEG](http://www.graphicsacademy.com/what_jpeg.php).

When storing animations, MNG does **not** allow audio or video, but does include more sophisticated animation features than [GIF](http://www.graphicsacademy.com/format_gif.php), which help keep file size to a minimum.

While MNG is in principle an excellent file format, there is a major problem with using MNG for web publishing - namely that most/many web browsers do not support it all, or only if special plug-ins (which most people won't have are installed).

**10.\*.WEBP File Extension**

WebP file Foramt

Developer : Google

Contains : Bitmap/Animation

WebP is a [bitmap](http://www.graphicsacademy.com/what_bitmap.php) file format developed by Google, and released as an open standard, and intended to be a competitor to the [JPEG](http://www.graphicsacademy.com/format_jpeg.php) and [PNG](http://www.graphicsacademy.com/format_png.php) file formats.

The first iteration of WebP, introduced in 2010, was like [JPEG](http://www.graphicsacademy.com/format_jpeg.php), [lossy](http://www.graphicsacademy.com/what_lossy.php) [compression](http://www.graphicsacademy.com/what_compress.php) but intended to produce comparable quality files but smaller in size.

The second iteration , introduced in 2011, add a whole host of additional features, including a [lossless](http://www.graphicsacademy.com/what_lossless.php) [compression](http://www.graphicsacademy.com/what_compress.php) mode (intended to compete with [PNG](http://www.graphicsacademy.com/format_png.php), but intended to produce smaller files). Many other features were also added at this point, including support for animations, [alpha transparency](http://www.graphicsacademy.com/what_alphatransparency.php). and tiling WebPs to produce a very large composite image.

At the time of writing, the WebP file format is supported natively by the Google Chrome and Opera web browsers. In other web browsers, where native support for the file format is not built-in to the browser, a Javascript library ("WebPJS") or similar methods can be used to display WebP images.