

DIGITAL FORENSICS LAB

| Exercise 6 | |
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AIM

To write about some file extensions.

EXTENSIONS

A few extensions are listed out and described below.

| EXTENSION | FILE TYPE | OPENS WITH | CROSS-PLATFORM | DESCRIPTION |
|-----------|-----------|--------------------------------|----------------|---|
| JPG/JPEG | Image | Any photo viewer (like Photos) | Yes | <ul style="list-style-type: none">• It uses lossy compression• Used for images commonly and digital photography• Other extensions .jpe, .jif, .jfif• Degree of compression can be adjusted |
| PNG | Image | Any photo viewer | Yes | <ul style="list-style-type: none">• Stands for Portable Network Graphics• It supports lossless compression• Designed for images to be transferred over the internet• Non-RGB colour spaces not supported• Contains encoded pixels in a series of "chunks" |
| GIF | Image | Any photo viewer | Yes | <ul style="list-style-type: none">• Stands for Graphics Interchange Format• Supports up to 8 bits per pixel• Compressed using the lossless data |

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| | | | | compression technique LZW <ul style="list-style-type: none"> • Can contain up to 255 colours |
| TIF / TIFF | Image | Any photo viewer | Yes | <ul style="list-style-type: none"> • Stands for Tag Image File Format • Uses lossless (LZW) or no compression • Can be used as a container for JPEG and PNG files |
| BMP | Image | Any photo viewer and graphics application | Yes | <ul style="list-style-type: none"> • Stands for Bitmap file • Has a file header size of 14 bytes • Older GUIs use bitmaps in their built-in graphics subsystem • Large file size due to low ratio or no compression |
| ART | Image | Image Viewer apps | Yes | <ul style="list-style-type: none"> • Highly compresses an image • Designed to facilitate quick download |
| PCX | Image | Image viewer apps | Yes | <ul style="list-style-type: none"> • Stands for Picture Exchange • Not used a lot anymore • Uses little endian byte ordering |
| WMF/EMF | Image | Image viewer apps | Yes | <ul style="list-style-type: none"> • Originally not device independent • Now is cross platform • Acts similar to SVG files • EMF+ is an extension to these • Consists of a series of records played to produce graphical content |
| DWG | Binary | Any CAD programs like AutoCAD | Yes | <ul style="list-style-type: none"> • Used to store two- and three-dimensional design data and meta data • It's licensed by AutoCAD and is trademarked |

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|-------------------|--------------------------|--|-----|--|
| PSD | Image | Photoshop, Illustrator, CorelDRAW | Yes | <ul style="list-style-type: none"> • Stands for photoshop document • Can hold layers with masks, alpha channels, text etc |
| RTF | Text | Word processors | Yes | <ul style="list-style-type: none"> • Stands for Rich Text Format • Standard RTF consists of only 7-bit ASCII characters with escape sequences |
| XML | Document (plain text) | Browsers | Yes | <ul style="list-style-type: none"> • Stands for eXtensible Markup Language • Uses tags to describe components in a file |
| HTML/HTM | Document (plain text) | Browser | Yes | <ul style="list-style-type: none"> • Hyper Text Markup Language • Used with CSS, JavaScript and other web content files |
| PHP3, PHP4, PHTML | Plain-text file for code | Code or text editors (VS Code) | Yes | <ul style="list-style-type: none"> • Used to develop web applications • Processed by a PHP engine on web browser • Can also be executed with command line |
| SHTML | Document (plain text) | Code or text editors | Yes | <ul style="list-style-type: none"> • It's an HTML file that includes server instructions • Similar to ASP file |
| EML | Email | Mail programs like Outlook | Yes | <ul style="list-style-type: none"> • Standard for Outlook Express • Used to store email files • Stores each message as a file |
| DBX | Email | Outlook | Yes | <ul style="list-style-type: none"> • Contains messages for a mailbox • Created by Outlook Express |
| PST | Message and mail | Microsoft Outlook, Exchange Client and Messaging | Yes | <ul style="list-style-type: none"> • Personal Storage Table • Used to store copies of messages, calendar events etc. |

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| XLS | Spreadsheet | Microsoft Excel and other spreadsheet programs | Yes | <ul style="list-style-type: none"> • Native to Microsoft Excel • Can be opened by almost any spreadsheet program using APIs • Newer versions use.xlsx |
| DOC/DOCX/DOT | Word document | Word processors | Yes | <ul style="list-style-type: none"> • Native to MS Word • But can be opened with other processors like Google Docs, Libre etc • Docx uses open XML format • Doc is older • Docx is smaller and easier to store • DOT extension files are templates created by MS Word to have preformatted settings for generation of doc and docx files |
| PPT/PPS | Slideshow | MS PowerPoint and any other slide show program | Yes | <ul style="list-style-type: none"> • PPT are PowerPoint files • PPT files are used to design slide shows • PPS files open in Slide Show mode when opened |
| PDF | Document | Any PDF viewer like Reader, Okular | Yes | <ul style="list-style-type: none"> • Portable Document Format • Developed by Adobe • Encapsulates a description of flat document • Contains 7-bit ASCII characters • Format is a subset of Carousel Object Structure (COS) |
| ZIP | Archive | Any compression program | Yes | <ul style="list-style-type: none"> • Can contain directories • Lossless data compression |

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| | | | | <ul style="list-style-type: none"> • DEFLATE is the most commonly used algorithm • Minimum size of a zip file is 22 bytes • |
| RAR | Archive | WinRAR | Yes | <ul style="list-style-type: none"> • Proprietary format • Supports error correction • Creates smaller files than ZIP |
| GZ | Archives | Any compression tool like PeaZip | Yes | <ul style="list-style-type: none"> • Created by GNU zip compression algorithm • Uses DEFLATE, a combination of LZ77 and Huffman coding |
| BZ2 | Archive | Compression tools like WinZip | Yes | <ul style="list-style-type: none"> • Made with open source BZIP2 compression method • Produces smaller files |
| ARJ | Archive | Tools like 7-Zip, WinRAR | Yes | <ul style="list-style-type: none"> • Stands for Archived by Robert Jung • Creates high-efficiency compressed files • Used to store backup of multiple files |
| WAV | Audio | Audio player | Yes | <ul style="list-style-type: none"> • Developed by IBM and Microsoft • Used for uncompressed as well as compressed audio |
| AVI | Audio/Video | Media Player like VLC | Yes | <ul style="list-style-type: none"> • Audio Video Interleave • Proprietary format by Microsoft • Derivative of Resource Interchange File Format (RIFF) |
| RAM | Audio | RealPlayer | Yes | <ul style="list-style-type: none"> • Contain URLs to other RealMedia files like RM files • Developed by RealMedia |
| RM | Only audio or video | RealPlayer | Yes | <ul style="list-style-type: none"> • Used with RAM files • Stores either only audio or video or both |

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|----------|-----------------|---------------------------|-----|---|
| MPG/MPEG | Audio and video | Any media player like VLC | Yes | <ul style="list-style-type: none"> • Most commonly used format • Used for video and audio compression |
| MOV | Audio/Video | Media players like VLC | Yes | <ul style="list-style-type: none"> • Developed by Apple • Acts as container vor audio, video and text |
| ASF | Audio/Video | Media player | Yes | <ul style="list-style-type: none"> • Developed by Microsoft • Doesn't specify how the audio/video must be encoded, only their structure |
| MID | Audio | Media player | Yes | <ul style="list-style-type: none"> • Part of a standard that describes a communications protocol related to musical instruments and audio devices • Small file sizes and easy to modify • Can be modified to sound like any other instrument |

CONCLUSION

Thus, a sundry of file formats have been discussed above.