| Challenge 10 - Media Format |
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| General Goal *Learn about the different types of popular formatting in media, including images, videos, music and text files.* |
| Learning Objectives *Learning what the most popular types of media are (images, documents, music, video).*  *Learning the popular types of media formatting.*  *Learning about the ways a media file can be viewed through programs.*  *Learning about the differences between the types through examples.*  *Learning about extracting, exporting, and converting files.* |
| Description The trainees will first learn about media files and will learn how to recognise the types of media from their popular formats.  They will learn how to use specific programs to play/see/edit the media they have access to.  The trainees will discover ways to convert and export types of the same media (e.g. document) and what their differences are, especially in images and documents.  (To go further) The trainees will learn about compression, the way it affects size and its importance in media formats. |
| Instructions What are media files and what types of formatting are available?  Follow the lesson about media files and the most popular types of formatting. It can be given by your teacher, or you can watch the different articles given as reference.  <https://www.minitool.com/lib/media-file.html>  <https://www.lifewire.com/what-are-digital-media-formats-1846786>  <https://developer.mozilla.org/en-US/docs/Web/Media/Formats/Containers>  <https://www.computerhope.com/issues/ch000573.htm>  How to open files in regard to their format?  Have programs that can play/show images/music/video/documents/compressed files (suggestions in the resources) and give the trainees a folder with several formats of different media. Teach them how to recognise the media based on details of the file and extensions and let them open and check what the files are about.  <https://www.videolan.org/index.el.html> (music/video)  <https://www.microsoft.com/el-gr/microsoft-365/word> (document editor)  <https://www.win-rar.com/download.html?&L=0> (compression tool)  <https://www.microsoft.com/el-gr/microsoft-365/excel> (sheet editor)  <https://www.pcmag.com/reviews/google-docs-sheets-and-slides> (Google’s tools)  How to convert documents into other types?  Teach export options, and let the trainees convert simple .txt files into:   * .docx file * .pdf file * .html file   Explain the differences between the formats and why each one has a different functionality importance (resources given below)  <https://quick-adviser.com/how-do-i-export-a-microsoft-word-document/> (export options in MS Word)  <https://www.canto.com/blog/html-document-file/> (HTML files explanation)  <https://nwtc.libanswers.com/faq/212721> (PDF file explanation)  <https://www.canto.com/blog/docx-document-file/> (DOCX file explanation)  What are the differences in formatting of images, why have more than one?  Show the most popular image format types, explain differences in usage and view.  Have them inspect the same image in different formats and check size difference, usage difference (e.g. transparency in png, frames in gif) and discuss them. |
| Resources Image types  <https://www.practicalecommerce.com/Image-Formats-What-s-the-Difference-Between-JPG-GIF-PNG> |
| To Go Further What is compression, how does it affect different types, size and usability?  Explain what compression is and how it helps save space, as well as create new format types.   * Give them a compressed file and let them check size * Have them extract the content and recognize the file formats seen before inside (images, videos etc.) as well as the current size of directory * Have them compress the folder again and check size again.   <https://www.techtarget.com/searchstorage/definition/compression>  <https://etc.engineering.uiowa.edu/winrar-extract-and-compress-files>  <https://en.wikipedia.org/wiki/Image_file_format> (image file types, with information on their compression techniques) |