Final Documentation Submission

—— Connor Christensen ——————————

As the ending of our semester approaches, it is time for the final documentation of our research thus far. To make this a fluid and organized submission, I wanted to first begin by talking about the formats involved in this project. I then wanted to go over asset management to show how difficult and confusing a project can be. I then wanted to finish with the summary and Use Case Scenario. This experiment took place so that I could better get an understanding of how media can be affected when uploaded to the wonder that is the Internet! I feel as though many people do not have an understanding, or at least not a solid one, of how media can be messed with when trying to upload.

While I was not exactly sure where this project would take me, I was hoping to learn not only how I can successfully compress media, but also how websites may mess with your images without your knowledge. Luckily, through this documentation, you will be able to see that my mission was successful. Hopefully by the end of the document, you will be able to get a feel on how to compress and use image editing software to your advantage! So without further ado, lets take a look at the formats involved!

Formats

—Part 1——

To begin the final documentation, I wanted to make sure I took some time to quickly go over the whole basis of our project, media compression. When deciding to upload media to the Internet, it is extremely important to understand how that media will function and how it may be affected upon upload. While we are going to be focusing on image formats for this project, it is important to know that all media have file types and extensions, each with their own reasons for use.

IMAGE	AUDIO	VIDEO
TIFF	M4A	MP4
Bitmap	FLAC	WMV
JPEG	MP3	WebM
GIF	WAV	AVI
PNG	WMA	AVCHD
RAW	AAC	FLV
EPS		MKV
		MOV

As this was mostly an image compression assignment, I just wanted to quickly go over the most common file formats for images, these also being the image types that I used for my project and my experimentation. I also wanted to quickly explain both lossy and lossless compression as those are extremely key in trying to understand compression.

JPEG - Joint Photographic Experts Group (.jpg, .jpeg) **Created 1986 by Nasir Ahmed**

Compression: Lossy Best For: Web images, Email, Powerpoint Special Attributes: Can choose the amount of compression when saving files.

GIF - Graphics Interchange Format (.gif) **Created 1987 by Steve Wilhite**

Compression: Lossless Best For: Web images Special Attributes: Can be Animated Saves Transparency

PNG -Portable Network Graphics (.png) **Created 1995 by Thomas Boutell**

Compression: Lossless Best For: Web images Special Attributes: Can Save Transparencies

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Lossy vs Lossless:

Lossy:

Eliminates data that is not as noticeable

Compromises Quality of files

Smaller file sizes

A file will not restore or rebuild it in its original form

Used in images, video, and audio

Lossless:

Does not eliminate data that is not as noticeable

Does not compromises Quality of files

Larger file sizes

A file can be restored to its original form

Used in images, text, and audio

The basic idea behind the two compressions are simple. Lossy losses data while Lossless does not. Now this data that it loses is known as metadata. Now in a very simple yet possibly more confusing way, metadata is described as data about data. The reason for this is because metadata hold information about an image for example. Now in a lossy compression scenario, there can be pixels that are lost or merged together, the size of the file will likely lower, and the quality follows. As opposed to this, Lossless scenarios retain all of the information about the media and will stay the same as the original. This, of course, is usually followed by larger file sizes.

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After discussing the types of formats, it may be easy to feel overwhelmed and confused as to what each of these file types mean. Well you are not alone! And before we get into the ins and outs of a few of these types, it is important to first go over organization. When saving assets for a project, it can very quickly get out of hand and you can find your self in a sea of random file names. While you may not be the most organized person, you need to take the small amount of time it requires to name these files in a way that is advantageous to you.

Below is the way that I like to sort my Assets, however there are many different options when it comes to how you want to sort documents!

Asset Management

—Part 2——

Step 1

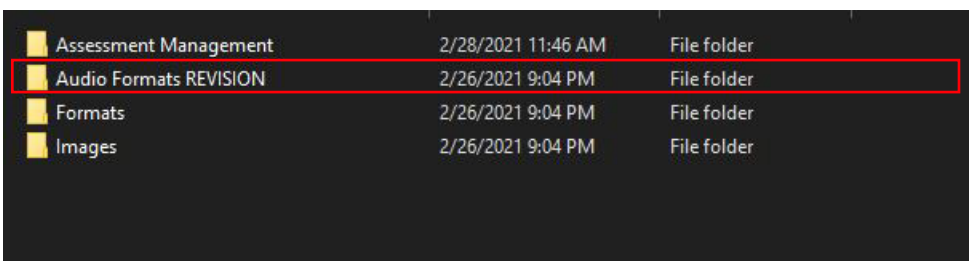
Navigation

When deciding to save Assets, it is first important to have a destination for these files to go. You can have the best naming conventions, but if you lose your assets, you are almost worse off! So hence we have Step 1: Navigation. For me personally, I have a RainMeter Skin with a customized folder icon that launches me right to my school folder. This saves me time and hassle when trying to find the files I need. Other simple options could include pinning your file explorer to your task bar or possible creating a shortcut directly to a folder.

Step 2

Folders, Folders, Folders

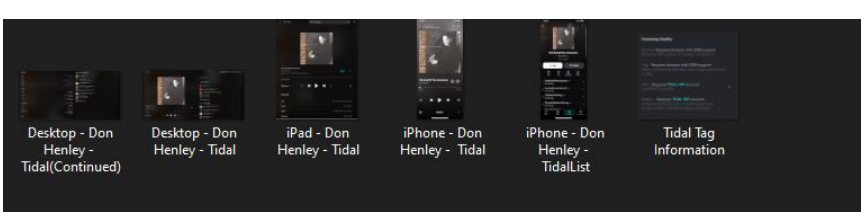
The next step is to create folders! This is the absolute first key in staying organized in a file explorer. Having different folders for each class, project, assignment, or whatever you are working on is not only smart but saves you so much time! As shows, I have separate folders for each of my classes, this helps me keep files in completely different spots with no confusion of where some class' assignments are. There are not many tips here, other than possibly alphabetical. As you will not have as many folders as files, it is good to know that alphabetical sorting will be your friend in most situation.



More folders! You can never have too many! As you can see, I have many different levels of folders depending on the class that you choose. For this class in particular, I then have all of my assignments in their own folder. This gives even more organization and control to your files.

Step 3

Naming Conventions



The final and possible most important step when saving assets is how you decide to actually name them. The reason for this is again it saves time and keeps you organized, but the most important reason for this is if you are working in a group! Having solid and similar naming conventions leaves nothing up to chance and erases the possibility for any confusion. Now, the way that you decide to go about naming your files is completely your call, the consistency is key here. You need to be 100% accurate and the same with every file or your management is useless.

Another key piece that can play in this part of Asset Management is how you view the files. As you can see, there are a couple different view options, and I would say List (left) and Icon (right) view are probably the two most popular views. This again comes more from personal preference, but I switch between the two depending on the amount of images as well as reason for the project. These are some things that you will get comfortable with, this is just one of those things that takes time. Learn the steps, and then practice until you find what works for you!

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Now that we know about the different file types, and how you should go about saving them to your computer, it's now important to learn how images can be affected by compression! As this is just a summary, I wanted to make sure to get the highlights. While this is just a basic idea of how images can be compressed and affected, I will go into how you can see this play out every day in the Use Case Scenario part of the documentation.

In this part of the compression summary, we are going to go over some dialogue boxes you might see, as well as some facts about the different compression methods.

Compression Summary

Part 3

To begin, when saving media, you are often going to be left with two options: Save As and Export As. Now while these two are very similar, there are a few differences. The largest being that generally, Save As is used more for a work in progress and Export As is for a final design. This is because the Save As allows you to save the same file under a different name, and especially in a file type that can be re opened in that program. Export As will often give you a file type that cannot be opened in that program as it is usually seen as ready to be shared or presented, not to be worked on again. Knowing this, especially as the three image formats we are looking at can be seen in both save options, hopefully that gives you a better idea of how to save your image.

Before we start explaining how saving these files can affect the images, let's very quickly remind ourselves what their compressions are and what we might expect each file size to be:

JPEG - Lossy

Because this is a lossy compression type, we can assume the file sizes to be generally smaller as there is data that is lost when an image is saved as this file type.

GIF and PNG - Lossless

Because these are of a lossless compression type, we can assume the file sizes to be generally smaller as there is data that is lost when an image is saved as this file type.

File Size: 682 KB
Quality: 4 - Low

Fig. A

File Size: 7,149 KB
Quality: 12 - Maximum

Fig. B

Save As JPEG

Original Image Size: 12,705 KB

Here we have an example of what can happen to an image when saved under two different JPEG options. If you wanted a smaller sized file, you are paying for that with less quality. We see the opposite, as we should hope, with a higher quality option. However, we can also see that both images result in a much smaller file size due to the lossy compression.

Fig. A

File Size: 17,129 KB
Quality: Normal

Export as PNG

Original Image Size: 12,705 KB

When saving a PNG, we can see that both images are a much higher file size than the JPEG, and the highest quality surpasses even the original! This is due to the Lossless compression in the image. Because all of the data is saved, we get a much larger file size. While the size is large, the quality is amazing.

Fig. B

File Size: 6,409 KB
Quality: Smaller

Fig. A

File Size: 9,571 KB
Transparency

GIF - "Save As"

Original Image Size: 25,016 KB

One interesting thing I noticed when testing the GIF format was with and without transparency. The image size is only smaller by less than one hundred KB for this image for a non transparent image. This may help make the decision as to whether or not you are wanting to add transparency to your image.

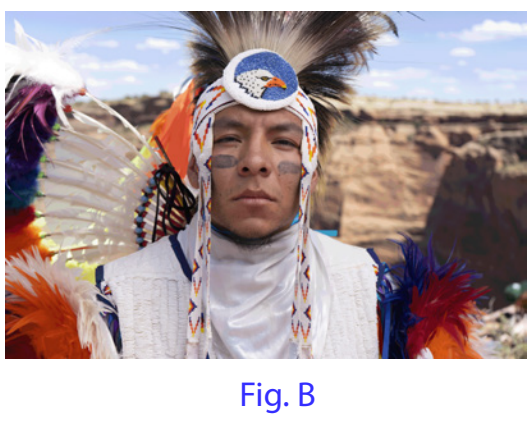

Fig. B

File Size: 9,614 KB
No Transparency

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So now we reach the final part of our documentation. The culmination of the whole semester. How do I use this information? This is the question you often find yourself wondering when learning a new skill. Hopefully I am able to show you exactly how I was able to go in and test out an actual platform, and hopefully I can show you exactly how this is used in every day life!

Use Case Scenario

—Part 4 ——

When starting this part of the project, it was very important to come up with a kind of Plan of Action. As this project was very open ended, the world felt like your oyster, and it honestly ended up being quite a lot to handle. However, after finishing up this first part of the project you really get a feel for how it's going to go. The first step in any type of experiment like when creating a plan of action is to kind of mess around with the program. Get a feel for everything it has to offer. Look through the settings, see if there are any specifications you can find. Getting a basic understanding can help you really find where you want to go with your experiment. While you may not find much, that's ok to start! You are mostly familiarizing yourself.

After getting a feel for the program, the plan of action begins! This is basically the questions you are wanting to answer through out the experimenting. The reason this is important is because it really helped me stay on track. After spending enough time on the same project you can kind of lose sight of the end goal, but if you are following some guide lines that you wrote for yourself, you will never be lost. For my Plan of Action, I had four basic ideas I wanted to answer:

The first place I wanted to go was the main profile page. I wanted to know what are the limitations for uploading an image to my profile? Can there be an animated image? What happens if the borders are larger than 1000 pixels each?

The second place I want to go is the editor. I first want to tackle my biggest question: Can I upload an animated GIF? Can I upload an Animated PNG? Can I upload other image extensions? And beyond that, I want to look at the restrictions they have on image sizes.

The next thing I wanted to test was uploading an image, posting it, and downloading the image again. I want to see if there is any type of compression or loss of quality that happens and see if I can figure out why that is the case. I would not expect this to happen, but I am curious to see what happens.

One of the final things I wanted to take a look at is the embedding process. Unfortunately I do not think this will lead to much as they use a different source for their embedding process, however I will still investigate. I also am going to try and upload an MP4 file or something similar as an image to see what error that gives me, however I believe I already know the error it will give.

These were my four basic questions that I set out to answer. These were all questions that were created after just my quick look around and investigations. Having these guidelines set out really help me. Luckily, the answers were there for me to find and I was able to solve pretty much all my questions! These all come from trial and error. A scenario in real life can take a long time, especially depending on your desired outcome! So now that we have our plan of action, next comes the experimentation!

So starting off with my Profile Page, as stated in my plan of action, I immediately went to work and began to test their limitations and expectancies. I would do this by taking their restrictions and purposefully breaking them to see if it is allowed. Now obviously you would expect them to not work as they are giving you blatant instructions that say the opposite, but you would be surprised about what you find! Unfortunately, the testing on this page did not yield many results so I moved on.

Once reaching the story editing page I was delighted to see that some work could be done here! I was able to find a couple very interesting things out:

Breaking the Rules:

One of the first cool things that I found was I was actually able to upload an MP3 file as an image file type! This is an example where they give you the allowed file types, but I was able to go in there and totally throw another type of file in! This is one of those things that you would probably never find unless you were just messing around trying to cause an issue!

Secret Compression:

The other extremely interesting thing that I found when doing this test was that Medium actually does compression on your images for you! Now one of the reasons why this is such a big deal is because there is absolutely no warning that your images are being affected! This was done by simply uploading and image and then resaving the image. After doing so, you just compare the file sizes! A file that is any smaller has been affected in some way. This can cause issues for your images that you were not intending, such as bad quality or a weird look when switching to mobile view.

While you may not immediately do onto a website and wonder what the guidelines for posting are, it's probably a good idea to at least have some baseline knowledge. Whether you are an avid social media user, a designer, photo hoarder, or whatever you may be, my guess is you are looking for the best quality image at the lowest size! Well, hopefully through reading this documentation you were able to gain a better understanding as to exactly how you can go about doing that! From the file type to use, to how to save and then upload your image, you will be able to manipulate any image in your favor! With a little trial and error, you can get any image you want, just the way you want it, at no extra cost in size! Act now for the best deal of your life! And remember, images are made for editing!