The change in image resolution, colour depth and image size all have a significant effect on file size. This effect is usually the increase in colour depth, image size and resolution all increase the file size, however these all increase the file size differently/ different proportions. For example if I was to increase my logo’s image size to 800x800 pixels from 400x400 pixels the file size increases by about 1.2 MB but if I changed the colour depth channel for 8-Bit to 32-Bit on a 400x400 Sized logo the file size increase by about 1.7 MB. This is just a small example of changing the properties of my logo.

Image Size and its effect on file size? – Different dimensions of an image will have the second biggest effect on the image file size. This is due to each individual pixel having a different code/property and even colour depth on some file types. This means if the image size is larger than there are more pixels to be saved separately. To experiment the change of an image size to file size I enlarged my advertisement’s dimensions 5 times, which is from 800 x 600 to 4000 x 3000. This increased the file size from 1.37MB to 34.3MB which is an enlargement of about 27 times. This is to show the massive change in file size from image dimensions; however this is for a PSD file type. For a JPEG the same enlargement changes from 192KB to 1.21MB which is and enlargement of around 6 times, this goes to show that a file that is compressed has less of an enlargement in file size from the images dimensions. A (PSD) which is much less compressed than a JPEG has a much bigger enlargement in file size although their image dimensions are the same. The quality also changes throughout image size. If the image size is increased by a large amount the image will start to become a much worse quality when zoomed in. This happens because if an image is being enlarged the original pixels it had are just being recreated which means the quality will only be reduced. By this I mean if an image has a width of 30 pixels and a height of 20 pixels and its size is then increased to 300 by 200 then each 1 pixel on the first image is now 10 pixels on the enlarged image. This means the image quality when zoomed in is a lot worse.

Image Resolution and its effect on file size? – The increase on image resolution on all file types will increase the file size. This is because it is just like image size however, with image resolution it is just increasing the amount of pixels for a set length (For example: cm or inch). If there are 100 pixels per (cm) compared to 25 per (cm) then the file size of the first will be much larger than the second. This is due to more pixels are more concentrated on the first image and because each individual pixel has a certain code assigned to it more are needed to are saved with a larger resolution so the file size increases. To experiment this I used my advert and increased the resolution from 72 pixels per inch to 180 pixels per inch (2.5 times bigger) using a PSD file type. This increased the file size from 1.37MB to 8.58MB which is an increase of 6 times although the resolution was only increased 2.5 times. Using a different file type (PNG) which compresses an image more than the default PSD (Using Photoshop CS6) the file size is increased less from an enlargement in image resolution. To prove this I followed the same experiment but used a PNG file type. The result was an increase of around 4 times in file size. This experiment showed that file types that compress an image better have less of an increase in there file size from increases of image resolution. When image resolution in increased the image quality is also increased this is due to more pixels being on the image. It also means there is a larger concentration of pixels on the image. This means when zoomed in to the image there are more pixels shown so the image looks much better in quality.

Colour Depth and its effect on file size? – The final test was to test what changes in colour depth had on file size and image quality. To test what effect colour depth had on file size I changed the colour depth channel it was on, from 8-Bit to 32-Bit on RGB (Colour). This changed the file size from 1.37MB to 5.49MB on a PSD file type. This is an increase of about 4 times however I did increase the colour depth 4 times. To see if the colour depth increased the file size in the same proportion I halved the colour depth channel to 16-Bit. This had a decrease of 5.49MB to 2.75MB which is around half. This means that colour depth on a PSD file type is directly proportional for colour depth to file size. If the colour depth is doubled so is the file size. However, I needed to see if this was true for another file type for this test I used BMP. I saved 3 files as a 16-Bit colour depth 24-Bit Colour Depth and 32-Bit. Here are the results for there file size. 16-Bit – 938KB, 24-Bit – 1407KB, 32-Bit – 1876KB. The increase of 8-Bits in colour depth is 469KB on both tests. This again shows that colour depth is directly proportional with increase to file type. These tests showed that the increase in colour depth will be proportional to the increase in file size. The image quality also increase the most throughout colour depth change this is because you are upgrading the depth that each pixel can obtain so each colour can be brighter or darker that it originally was improving its quality. It increases the file size with this because there is more unique coding for each pixel which increases the file size with it.

Different File Types – File types also will compress differently to one another and this also affects the file size largely. This is due to how the files compress the pixels and how they store data. If the file type uses a high colour depth like 32-Bit for example it will be much larger than if you where to use an 8-Bit colour depth, this is because each pixel now ha more unique data and will then be larger in file size. File types like PSD are large in file size because it doesn’t compress the pixels well this is normal because the file is still being edited by a software like Photoshop so the pixel can not be compressed well they must stay almost like a RAW image. File types like JPEG are much more compressed and the pixel now have a set state and editing is much harder and a worse quality. The pixels now have there set state/information on how they are displayed. However, when editing this is different this is because the pixel is in a mobile state where they can still be manipulated easily and changed. This is until the file is saved as a certain file type like JPEG where all the files are compressed into a set state. The main reason why some file types are bigger/smaller than others is because of how they code. File types like JPEG and PNG are only different because of the way they code, even though JPEG is smaller in file size it also better quality this is because of the way it codes and the properties it accounts for. JPEG doesn’t use colour depth as well as a PNG so the PNG will have a better colour quality but not image this is only due to the property that is within the file type. The other reason why some file types are larger that others is because the way the file is coded can be easier for a computer to load, for example many games that need to run at around 30fps (Frames Per Second) need a fast computer if all the images where JPEG, JPEG although is quite easy to load just 1 image but 30 in a second is to much for many PC. So In games development they use other file types which are easier to load. In some game development to increase the games FPS they manipulate the file type for better performance thought out the game.