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Department of Information Systems  
Odd Semester 2019/2020*

***DESIGN AND DEVELOPMENT OF A GIF AND APNG  
MANIPULATION DESKTOP APPLICATION***

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***ABSTRACT***

*The development of computer systems worldwide pushes the development of animated image formats. Animated images are a general and inseparable element of the internet. Aside from being a form of sharable content across computer users, animated images are one of the prominent forms of culture and communication in the internet. One of the digital image formats that supports animation is the GIF format, which by now, dominates a major proportion of all of the animated images present on the internet. The popularity of the GIF format is derived from its practicality. This practicality however comes with a trade-off in image quality. It only supports a range of 256 colors with optional full transparency. Another animated image format is called APNG, which in essence, is a PNG image but contains more than 1 image frame within it, effectively making it an animated image. APNG is superior in terms of image quality when compared to GIF, because it has the quality of a normal static PNG image. It supports 24-bit RGB colors or 32-bit RGBA colors, with an alpha channel that supports partial and/or full transparency. Despite its better quality, the GIF format is more popular and ubiquitous because of the severe lack of APNG manipulating tools on the internet. The author of this thesis will develop a cross-platform desktop GIF and APNG manipulation application. It supports 3 main features: creation of GIF and APNG images using image sequences, splitting of GIF and APNG images into image sequences, and modification of the attributes of GIF and APNG images. This application will be available for Window and Linux machines. The author develops this application in hopes that it will increase the popularity of the APNG format by facilitating its creation, splitting and manipulation, alongside providing support and compatibility to perform the same operations on a GIF image.*

*Keywords: Digital images, animation, GIF, PNG, APNG.*