

2a) The computing innovation identified by the computational artifact is Wine, a software that allows POSIX compliant OSs to run Windows applications.

The purpose of Wine is to allow users of non-Windows OSs to run Windows applications. The artifact shows the purpose of Wine by showing some Windows applications it can run. Another way the purpose is demonstrated is that Wine and Linux (a non-Windows OS) function like a Windows environment.

Wine functions by translating Windows API calls into POSIX calls that can then be understood by the non-Windows OS, as demonstrated by the final diagram in the computational artifact.

2b) To make my computational artifact, I primarily used Google Docs. After finding the images I wanted on the Internet, I pasted them into the Google Doc and I used Google Docs' tables to arrange the images in a structured way. The tables kept things I wanted to be in the same column and row in the same column and row. Next, I positioned images where I wanted them on the page by adjusting the sizes of adjacent columns and rows. Finally, I made sure the tables were not fully visible and printed the document as a PDF.

2c) One of the beneficial effects of Wine is that Wine's ability to run Windows applications also allows the society of non-Windows users to have access to Windows applications. As stated by WineHQ, Wine can run Windows applications on Unix-based OSs like Linux, macOS and BSD[4].

Wine is a free software[1]. This would allow a user who would have used money to buy a Windows license to invest that money into something else[4], which is a beneficial economic effect.

In addition to this, the commercially supported version of Wine, CrossOver[3], is better supported than Wine[5], which allows more reliability in the user experience. Both these options have the potential to affect businesses who wish to use computers with a non-Windows operating system, as they will still be able to run Windows applications.

One of the harmful effects of Wine is that, relative to Windows, it is unstable and unreliable, therefore causing inconvenience for the user. For one, Wine is not reliable enough to be trusted with critical functions of an enterprise[3]. This shows that using Wine normally can still result in Wine crashing and causing inconvenience. In addition, if the number of frequently asked questions about crashes, freezes and sub-optimal performance is any indication of reliability, Wine is unreliable[2]. These difficulties with using Wine cause a lot of frustration and wastes a lot of time and patience among the society of non-Windows users who use Wine, which is a harmful effect.

2d) The data that Wine uses are the Windows API calls which are made by the application that Wine is tasked to run. This is because Wine acts as a buffer between the application and the OS Wine is running on.

Wine transforms Windows API calls from the application into POSIX calls while the application is running[1]. In other words, it transforms the input data of Windows API calls from the application into POSIX calls and outputs them to the OS that Wine is operating on. This is translating of the application's instructions, allows the non-Windows OS to be able to understand and do what the Windows application wants it to do.

One cause for concern for Wine users is that Wine is malware compatible[2]. This is a data security issue because it exposes non-Windows users and their data to Windows malware. This puts the security of Wine users' data at risk when it would otherwise not be. The data at risk is just the user's data in general, which would normally be secure with no malware around. This relates to Wine because Wine is what allows Windows viruses and malware to affect Linux systems. In this case, Linux systems would normally be relatively immune to viruses, and not compatible with malware targeted at Windows systems. (Linux being an example of a POSIX compliant OS that Wine can run on)

2e)

#### Works Cited

[1] "About Wine." *WineHQ*, [www.winehq.org/about](http://www.winehq.org/about). Accessed 14 Mar. 2018.

[2] "FAQ." *WineHQ Wiki*, [wiki.winehq.org/FAQ](http://wiki.winehq.org/FAQ). Accessed 14 Mar. 2018.

[3] Hartley, Matt. "Is WINE Linux Enterprise Friendly?." *Datamation*, 22 Jan. 2018, [www.datamation.com/open-source/is-wine-linux-enterprise-friendly.html](http://www.datamation.com/open-source/is-wine-linux-enterprise-friendly.html). Accessed 14 Mar. 2018.

[4] Hartley, Matt. "The year of WINE on Linux." *Datamation*, 8 Aug. 2017, [www.datamation.com/open-source/the-year-of-wine-on-linux.html](http://www.datamation.com/open-source/the-year-of-wine-on-linux.html). Accessed 14 Mar. 2018.

[5] Sneddon, Joey. "CrossOver 17 Lets You Run Microsoft Office 2016 on Linux." *OMG! Ubuntu!*, 6 Dec. 2017, [www.omgubuntu.co.uk/2017/12/crossover-17-linux](http://www.omgubuntu.co.uk/2017/12/crossover-17-linux). Accessed 14 Mar. 2018.

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