2a. Provide information on your computing innovation and computational artifact.

- Name the computing innovation that is represented by your computational artifact.
- Describe the computing innovation's intended purpose and function.
- Describe how your computational artifact illustrates, represents, or explains the computing innovation's intended purpose, its function, or its effect.

(Approximately 100 words)

My computational artifact, Cloud Salez, represents the cloud-based point of sale (POS) computing innovation. Many businesses have started transitioning to cloud POS systems, because Cloud POS systems provide an efficient method for businesses to store and process their sales data. Cloud Salez represents a cloud POS system because it achieves this goal by allowing businesses to process and store their sales-related data on a remote cloud server rather than a local data center. Additionally, these businesses can access their processed sales data through Cloud Salez's frontend interface, which is accessible on any internet-capable device.

2b. Describe your development process, explicitly identifying the computing tools and techniques you used to create your artifact. Your description must be detailed enough so that a person unfamiliar with those tools and techniques will understand your process.

(Approximately 100 words)

I created a single-slide Google presentation about my computational artifact, Cloud Salez. To explain how the back-end cloud system of Cloud Salez functions, I created a flowchart using text boxes, images, and arrows. This flowchart shows how Cloud Salez stores sales data on a remote server, processes this data, and returns this processed data. In each textbox, I provided a brief explanation of each step of the process and used arrows to show the order of the steps. Additionally, I added a textbox on the slide to briefly explain the purpose and function of Cloud Salez.

2c. Explain at least one beneficial effect and at least one harmful effect the computing innovation has had, or has the potential to have, on society, economy, or culture.

(Approximately 250 words)

Cloud-based POS systems function differently than traditional localized POS systems. This is because all sales data in a cloud POS system is stored on an online server in the cloud, instead of a local server or data center. Due to this, a cloud POS system has both beneficial and harmful effects on businesses. One beneficial effect of a cloud POS system is that they are cost-effective. The price of a cloud-based system is cheaper because the installation process is simple and maintenance is performed remotely (2). As a result, businesses don't have to hire a trained engineer to install and manage an on-premise server. Additionally, cloud POS systems are based on subscriptions, which vary in price based on how many POS devices a business needs (1). Due to this subscription system, businesses can select a plan that best suits their needs. On the other hand, cloud-based POS systems are harmful because they are internet dependent. "Some cloud POS platforms only work online or on mobile devices. This can become a problem if internet connectivity is spotty...When the internet goes down, you need a localized system to keep things going." (3). This demonstrates how cloud POS systems are harmful to some businesses. If the internet is slow or erratic it can make checkout systems malfunction. This can result in an inconvenience for the business and the customer if the customer does not have any other payment methods at hand. In conclusion, a cloud-based POS system can have both beneficial and harmful effects on a business.

2d. Using specific details, describe:

- the data your innovation uses;
- how the innovation consumes (as input), produces (as output), and/or transforms data; and
- at least one data storage concern, data privacy concern, or data security concern directly related to the computing innovation.

(Approximately 250 words)

Cloud-based POS systems require data to function. The data used by a cloud system is primarily numerical and textual sales and transactional data such as the name of the product and its price. There are multiple steps involved for a cloud-based POS system to function. Throughout these steps, the sales data is collected, processed, and output to a frontend interface. First, a customer finds a product that they want and purchases it. The customer's payment method and product information are collected by a POS device such as a cash register or a tablet. Once all of this numerical and textual data is collected, it is transferred to a remote cloud server, which is essentially a third-party data center. After the data is transferred, the transaction is completed and stored on the server (4). Additionally, most cloud POS systems provide users with real-time reporting of the data. The stored sales data from the cloud servers is processed in order to "...offer in-depth, customizable reporting, data analytics…" for businesses to access (3). After all of the data processing is finished, the cloud POS system outputs this processed data to its frontend, which can be accessed on any internet capable device (1). Due to the use of cloud servers, security is a big concern (3). Cyberattacks can be prevented easily, as cloud-based POS systems use data encryption to protect the data on the cloud servers (5). In this process, the data is encoded, and can only be accessed by decrypting it with a key (6).

2e. Provide a list of at least three online or print sources used to create your computational artifact and/or support your responses to the prompts provided in this performance task.

- At least two of the sources must have been created after the end of the previous academic year.
- For each online source, include the permanent URL. Identify the author, title, source, the date you retrieved the source, and, if possible, the date the reference was written or posted.
- For each print source, include the author, title of excerpt/article and magazine or book, page number(s), publisher, and date of publication.
- If you include an interview source, include the name of the person you interviewed, the date on which the interview occurred, and the person's position in the field.
- Include citations for the sources you used, and number each source accordingly.
- Each source must be relevant, credible, and easily accessed.

1) Sorenson, Emily. "What's a Cloud-Based POS System, Compared to Traditional POS?" *Mobile Transaction*, Published on 20 May 2019, www.mobiletransaction.org/cloud-based-pos-system/. Retrieved on 29 Mar. 2020 3:14 PM

2) Austin, Kendal. "How to Choose Between a Cloud-Based POS and a Legacy POS." *Toast POS*, Toast, Inc., Published on 13 Nov. 2019, https://pos.toasttab.com/blog/cloud-based-traditional-pos-systems. Retrieved on 31 Mar. 2020 9:18 PM

3) Dwyer, Ben. "Cloud Based POS Systems - Pros and Cons to Moving Online." *CardFellow Credit Card Processing Blog*, Published on 7 Nov. 2019, www.cardfellow.com/blog/cloud-based-pos-systems/. Retrieved on 2 Apr. 2020 7:52 PM

4) Sebes, Christopher. "Council Post: What Is Cloud Point Of Sale, And How Is It Different From 'Traditional' POS?" *Forbes*, Forbes Magazine, Published on 25 May 2018, www.forbes.com/sites/forbestechcouncil/2018/05/25/what-is-cloud-point-of-sale-and-how-is-it-different-from-traditional-pos/#78e756f41180. Retrieved on 4 Apr. 2020 1:53 PM

5) Brandon, Diana Rose. "The Benefits of Cloud-Based POS Systems for Retail." *Insight*, Insight, Published on 6 Mar. 2020, www.insight.com/en_US/content-and-resources/2016/11172016-the-benefits-of-cloud-based-POS-systems-for-retail.html. Retrieved on 4 Apr. 2020 12:32 AM

6) Lord, Nate. "What Is Data Encryption? Definition, Best Practices & More." *Digital Guardian*, Published on 15 July 2019, https://digitalguardian.com/blog/what-data-encryption Retrieved on 13 Apr. 2020 3:07 PM

Images used to create Computational Artifact:

7) https://www.nakivo.com/blog/data-center-disaster-recovery-a-complete-guide/

8) https://www.pinterest.com/pin/53409945553585136/?nic_v1=1a%2BwbxO83u HQJklQlIXl53mGiOI6oz8SEdBO41BerAkAnIspjkFdShxYt%2F991bErTL

9) https://ig.ft.com/science-of-charts/

10) http://clipart-library.com/cloud-server-png.html

11) https://www.vectorstock.com/royalty-free-vector/modern-office-building-in-cartoon-flat-style-vector-5148014

12) https://www.insperity.com/blog/avoid-discrimination-promoting-employees/