

Explore PT — Analyzing Data and Information
Written Response Template

2. Written Responses

Submit one PDF document in which you respond directly to each prompt. Complete your responses to **2D and 2E**. Your responses must provide evidence of the extensive knowledge you have developed about your chosen computing innovation and its impact(s). Write your responses so they would be understandable to someone who is not familiar with the computing innovation. Include citations, as applicable, within your written responses. **Your responses will eventually be combined with further research and writing to create a 700 word research paper.**

Computing Innovation

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.

Your response must:

- not exceed 250 words
- explicitly name the **type** of data the innovation uses
 - o Fingerprints, temperature, audio, signals, text, etc.

The data that cryptocurrency uses as input includes a public key, two private keys, and a floating-point integer to determine how many units of cryptocurrency are being transferred (2). Given that Alice were to send a single unit of cryptocurrency to Bob, Alice's public key would then be sent to Bob and both would use their private keys to develop a digital signature of the transaction. This is secure due to the fact that finding the factors of the number contained within the public key (these factors being the private keys) would take an impractically large amount of time to accomplish (1). Many cryptocurrency miners would then solve a collaborative math problem to transform the information contained within the digital signature into that necessary to modify the Blockchain (the shared public ledger). The output of this process is that the Blockchain is updated, each party in the transaction has an updated cryptocurrency wallet, and a new transaction may be underway (2). An aspect of this transaction that raises a privacy concern is that the Blockchain in which transactions are recorded on is viewable by the public. As a result of this, anybody can access and analyze anyone else's cryptocurrency spending habits and personal information. Moreover, this means that users of cryptocurrency are not immune to advertisers who may take advantage of the knowledge of cryptocurrency users' spending habits and develop individual profiles of these users (3).

References

2E. Provide a list of at least two online or print sources used to support your response to the prompt in this performance task.

- At least one source must have been created after the end of the previous academic year (May 2018).
- 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 using MLA8 guidelines. You may use www.easybib.com
- For each print source, include the author, title of excerpt/article and magazine or book, page number(s), publisher, and date of publication.
- Include citations for the sources you used, list the sources in alphabetical order, and number each source accordingly.
- Each source must be relevant, credible, and easily accessed.

(Note: No word count limit for this answer)

Insert response for 2E in the text box below.

- (1) Art of the Problem. "Public key cryptography - Diffie-Hellman Key Exchange (full version)." Online video clip. *YouTube*. YouTube, 30 Jul. 2012. Web.
- (2) George, Alexander. "Did You Miss the Cryptocurrency Boat?" *Popular Mechanics*, Apr. 2018, p. 16. *EBSCOhost*, search.ebscohost.com/login.aspx?direct=true&db=ulh&AN=128244901&site=ehost-live.
- (3) Lord, Mary. "E-Commerce: HUSH MONEY." *ASEE Prism*, vol. 26, no. 7, 2017, pp. 13–13. *JSTOR*, www.jstor.org/stable/44160951.
- (4) Soergel, Andrew. "Countries Try to Lasso Cryptocurrencies." *U.S. News - The Report*, June 2018, p. C19. *EBSCOhost*, search.ebscohost.com/login.aspx?direct=true&db=ulh&AN=130425784&site=ehost-live.

