Performance Task: Explore – Impact of Computing Innovations

Overview

Computing innovations impact our lives in ways that require considerable study and reflection for us to fully understand them. In this performance task, you will explore a computing innovation of your choice. Your close examination of this computing innovation will deepen your understanding of computer science principles.

Please note that once this performance task has been assigned as an assessment (rather than as practice), you are expected to complete the task with minimal assistance from anyone. For more clarification see the Guidelines for Completing the Through-Course Assessment section.

You will be provided with 8 hours of class time to develop, complete, and submit the following:

- **A computational artifact**
- **Written responses**

Scoring rubrics and instructions for submitting your performance tasks are available on the AP Computer Science Principles Course Home Page.

Note: Students in nontraditional classroom environments should consult a school-based AP Coordinator for submission instructions.

General Requirements

This performance task requires you to select and investigate a computational innovation that:

- has had or has the potential to have significant beneficial and harmful effects on society, economy, or culture;
- consumes, produces, and/or transforms data; and
- raises at least one data storage concern, data privacy concern, or data security concern.

You are also required to:

- investigate your computing innovation using a variety of sources (e.g., print, online, expert interviews);

- cite at least three sources that helped you create your computational artifact and/or formulate your written responses;
  - At least two of the sources must be available online or in print; your third source may be either online, in print, or a personal interview with an expert on the computing innovation.
  - At least two of the sources must have been created after the end of the previous academic year.
- produce a computational artifact that illustrates, represents, or explains the computing innovation's intended purpose, its function, or its effect; and
- provide written responses to questions about your computational artifact and computing innovation.

Submission Requirements

1. **Computational Artifact**

   Your computational artifact must provide an illustration, representation, or explanation of the computing innovation's intended purpose, its function, or its effect. The computational artifact must not simply repeat the information supplied in the written responses and should be primarily nontextual.

   Submit a video, audio, or PDF file. Use computing tools and techniques to create one original computational artifact (a visualization, a graphic, a video, a program, or an audio recording). **Acceptable multimedia file types include .mp3, .mp4, .wmv, .avi, .mov, .wav, .aif, or .pdf format. PDFs must not exceed three pages. Video or audio files must not exceed 1 minute in length and must not exceed 30MB in size.**

2. **Written Responses**

   Submit one PDF file in which you respond directly to each of the prompts below. **Clearly label your responses 2a–2e in order.** 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 response to prompts 2a–2d combined must not exceed 700 words.** The references required in 2e are not included in the final word count.

   Computational Artifact

   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*)

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*)

Computing Innovation

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*)

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*)

References

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.