

Computer Science Principles

Performance Task: Explore — Implications of Computing Innovations

Computing innovations have had considerable impact on the social, economic and cultural areas of our lives. To focus your work on this task, select a computing innovation that interests you, that has had significant impact on our society, economy, or culture, and that possesses the potential for both beneficial and harmful effects.

General Requirements

- You must work alone on this performance task.
- The innovation you choose should affect a significant population (more than a few hundred people).
- You must include at least two references to a source of information that anyone can use to learn about the innovation you explored. Each reference must be to a source created between May 2013 and April 2014.

Prepare and submit the following:

- An original digital artifact (e.g. music, image, video, infographic, presentation, program, web page) that you create to express the effects of your chosen innovation. See Artifact (**A**) for details.
- A written document in which you respond directly to several prompts — elaborating on your chosen area, innovation, and the innovation's impact. See Written Submission (**B**) for details.

Both your artifact and your written submission should convey a deep level of additional understanding about your innovation.

A. Artifact

Your artifact must represent substantial effort. If your artifact is static, submit it as a pdf. If your artifact is dynamic, your final submission must be represented and submitted as a link to a YouTube video you have created and uploaded, with a maximum length of 3 minutes. If you do not have access to YouTube (e.g., your school does not allow access to YouTube), you must provide an alternate reliable source for your video.

B. Written Submission

Respond directly to each of the following prompts. Your document should be a maximum of 1000 words and it may include illustrations. Submit it as a single pdf file.

1. Describe the area of our lives (social, economic, or cultural) that has been most impacted by the innovation, and discuss the significance of the innovation to this area, using references to support your argument.
 - a. Select at least two references to provide context for the innovation you investigated. Each source must be a high-quality newspaper/magazine article, book, or online source.
 - b. Provide the full citation, giving author, title, and source for each reference. For online references, include the permanent URL and the date on which you accessed the reference.
2. Describe the population that is affected by the innovation and explain why that population is significant.
3. Describe how the technology works for your chosen innovation, including the levels of abstraction represented in the design of the innovation and a description of the sequence of steps for at least one algorithm.
4. Describe the connection between your artifact and the innovation you explored.
5. Identify and describe how information sharing has affected this innovation.
 - a. Discuss the extent to which this innovation is dependent on the Internet.
 - b. Describe any security concerns and explain how they relate to the innovation.
6. Describe the beneficial as well as any harmful effects of the innovation you explored.

Learning Objectives

The **Explore – Implications of Computing Innovations** Performance Task addresses the following CSP Learning Objectives:

LO 1.1.1 Use computing tools and techniques to create artifacts. [P2]

LO 1.1.3 Analyze computational artifacts. [P4]

LO 1.2.1 Use computing tools and techniques for creative expression. [P2]

LO 3.3.1 Analyze the considerations involved in the computational manipulation of information. [P4]

LO 4.3.1 Appropriately connect problems and potential algorithmic solutions. [P1]

LO 7.1.1 Analyze how computing affects communication, interaction, and cognition. [P4]

LO 7.2.1 Connect computing with innovations in other fields. [P1]

LO 7.3.1 Analyze the beneficial and harmful effects of computing. [P4]

LO 7.4.1 Connect computing within economic, social, and cultural contexts. [P1]