


Explore PT - Sample C - score: 8/8

Total score	Row 1	Row 2	Row 3	Row 4	Row 5	Row 6	Row 7	Row 8	<i>This document combines student sample, scoring guidelines and scoring commentary from: Explore PT Sample C</i>
Sample: C	1	1	1	1	1	1	1	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 non-textual.

Student Response	Scoring Guidelines	
 <p style="text-align: center;">Global Positioning System</p>	Row and Task	Decision Rules
	<p>Row 1 Computational Artifact</p> <p>The computational artifact:</p> <ul style="list-style-type: none"> Identifies the computing innovation. <p>AND</p> <ul style="list-style-type: none"> Provides an illustration, representation, or explanation of the computing innovation’s intended purpose, function, or effect. 	<p>The written response can be used to aid the understanding of how the computational artifact illustrates, represents, or explains the computing innovation’s intended purpose, function, or effect.</p> <p>Do NOT award a point if any one of the following is true:</p> <ul style="list-style-type: none"> there is no artifact; the artifact is not a computational artifact; the innovation identified in the artifact does not match the innovation described in the written response; the artifact does not identify the innovation clearly; the artifact does not illustrate, represent or explain the innovation’s intended purpose, function, or effect; the artifact illustrates a feature of the innovation instead of the purpose, function, or effect; or the written response describes the innovation’s intended purpose and function without explaining how the computational artifact illustrates, represents, or explains the intended purpose, function, or effect.
<p>The response earned the point for this row. The computing innovation is the Global Positioning System (GPS). The artifact illustrates the intended purpose of the GPS by including many different examples of its use, such as directions on a map, use by military personnel, and to find things like keys, pets, and kids.</p>		

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.

(Must not exceed 100 words)

Student Response	Scoring Guidelines	
	Row and Task	Decision Rules
<p>The Global Positional System, otherwise known as the GPS, has had a huge impact on society since it has been created. Shown in the computational artifact, GPS has a variety of different uses. Originally, it was created for military purposes, but it was soon realized that civilians could utilize this device according to the "General Information On GPS." Nowadays, it is used for driving directions, tracking lost items, monitoring the locations of children, and much more (Bajaj). The artifact demonstrates the several functions of the GPS within the various pictures and some of the components involved with the functionality of the device. (102)</p>	<p>Row 2 - Response 2A</p> <p>States a fact about the correctly identified computing innovation's intended purpose OR function.</p>	<p>Do NOT award a point if:</p> <ul style="list-style-type: none"> • the identified innovation is not a computing innovation; or • the written statement gives an effect (which is required for the scoring criteria in Row 3, not Row 2).
	<p>The response earned the point for this row. The response states the fact of the computing innovation "Originally, it was created for military purposes, but it was soon realized that civilians could utilize this device according to the 'General Information on GPS'."</p>	

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.

(Must not exceed 100 words)

Student Response	Scoring Guidelines	
	Row and Task	Decision Rules
<p>I created my artifact on microsoft word to make it simple yet effective. I first found several images that represented the numerous functions of the GPS and I inserted them into the word document. Then, I strategically placed them around the page in a collage-like form and cropped many of them to make them fit accordingly. Additionally, I inserted my rectangle into the document, formatting it in an aesthetically pleasing way, and put my title in a text box on top of that. With some final little touch-ups and adjustments, I finished my artifact. However, it was in a word document, so I saved it as a PDF to make it officially finished. (113)</p>	--	---
	<p>Response 2b will NOT be scored in 2018</p>	

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.

(Must not exceed 250 words)

Student Response	Scoring Guidelines	
<p>Since the GPS innovation has so many potential uses, there are numerous different harmful and beneficial effects, all described in Karen Bajaj's article. When looking at the GPS's ability to track children, this becomes a huge benefit to society. It betters the safety for children nowadays. If they get lost, a parent can easily use their iPhone to track their location. Also, if parents sees that their child is heading towards somewhere that is potentially dangerous, they can prevent the child from getting in trouble. Though it could be seen as an invasion of privacy, it can very easily increase the safety of children or even teenagers. Another GPS function that is very popular is the use of driving directions. While this is very convenient at times, people in society have become very reliant on this luxury. It causes many people to only trust the words of the GPS and to not actually become familiar with the places they are going. If something were to happen while someone was driving and they had to know where they were, many people would have no idea where they were. While many people would be able to use their phone to find out where they are, if for some reason they could not do this, they would be in trouble. While GPS probably has more benefits than detriments, there are definitely some major harmful effects from people's overuse of the GPS. (238)</p>	Row and Task	Decision Rules
	<p>Row 3 - Response 2C</p> <p>Identifies at least ONE effect of the identified or described computing innovation.</p>	<p>The effect does not need to be specifically identified as beneficial or harmful. The effect must be identified, but it doesn't have to be described to earn the point.</p> <p>Do NOT award a point if any one of the following is true:</p> <ul style="list-style-type: none"> the described innovation is not a computing innovation; the response does not state an effect (The purpose or function of the computing innovation is not the effect of the innovation.); or the identified effect is not a result of the use of the innovation as intended (e.g., a self-driving car is not intended to crash, therefore, its exposure to hacking is not an effect of its intended use).
	<p>The response earned the point for this row. The response identifies an effect as "it can very easily increase the safety of children or even teenagers."</p>	
	<p>Row 4 - Response 2C</p> <ul style="list-style-type: none"> Identifies a beneficial effect of the identified or described computing innovation. <p>AND</p> <ul style="list-style-type: none"> Identifies a harmful effect of the identified or described computing innovation. 	<p>Responses that earn this point will also earn the point for Row 3. Responses should be evaluated on the rationale provided in the response not on the interpretation or inference on the part of the scorer.</p> <p>Do NOT award a point if any one of the following is true:</p> <ul style="list-style-type: none"> the described innovation is not a computing innovation; the response is missing the adjectives harmful or beneficial (or synonyms thereof); the response is missing a plausible beneficial effect; the response is missing a plausible harmful effect; or the identified effect is not a result of the use of the innovation as intended (e.g., a self-driving car is not intended to crash, therefore, its exposure to hacking is not an effect of its intended use).
<p>The response earned the point for this row. The beneficial effect stated is that it would increase the safety of children. The harmful effect stated</p>		

	<p>is the overuse of the GPS. This is more fully explained earlier in the response. The response states, "It causes many people to only trust the words of the GPS and to not actually become familiar with the places they are going. If something were to happen while someone was driving and they had to know where they were, many people would have no idea where they were. While many people would be able to use their phone to find out where they are, if for some reason they could not do this, they would be in trouble."</p>	
	<p>Row 5 - Response 2C</p> <p>Explains how ONE of the identified effects relates to society, economy, or culture.</p>	<p>Responses that earn the point for this row must have earned the point for Row 3. Responses should be evaluated on the rationale provided in the response not on the interpretation or inference on the part of the scorer.</p> <p>Do NOT award a point if any one of the following is true:</p> <ul style="list-style-type: none"> ● the described innovation is not a computing innovation; or ● the explanation does not connect one of the effects to society, economy, or culture
	<p>The response earned the point for this row. The response states how the beneficial effect relates to the society: "When looking at the GPS's ability to track children, this becomes a huge benefit to society. It betters the safety for children nowadays. If they get lost, a parent can easily use their iPhone to track their location. Also, if parents see that their child is heading towards somewhere that is potentially dangerous, they can prevent the child from getting in trouble."</p>	

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.

(Must not exceed 250 words)

Student Response	Scoring Guidelines	
<p>According to Fred Zahradnik in his Lifewire article, GPS takes in data signals from several satellites that are in orbit around the Earth. Using these signals, a GPS can pinpoint your exact or relative location. In general, the data it produces is the location, but depending on which specific device you are using at the time, the location can be used to figure out other things, like directions, speed, and more. However, there can be some serious security concerns when it comes to using GPS. According to Catherine Rump, the government can track people's locations through their cell phone use. Every minute or so phones registers its location with the cell phone networks, allowing data to be easily available to when you might be. Also, when you use GPS on your phone, such as google maps, the government can monitor where you go and what you are doing. It is pretty invasive, but it is very difficult to avoid and the government can use it as a helpful tool to track criminals. (172)</p>	Row and Task	Decision Rules
	<p>Row 6 Response 2D</p> <ul style="list-style-type: none"> • Identifies the data that the identified or described computing innovation uses AND • Explains how that data is consumed, produced, OR transformed. 	<p>Responses should be evaluated on the rationale provided in the response not on the interpretation or inference on the part of the scorer.</p> <p>Do NOT award a point if any one of the following is true:</p> <ul style="list-style-type: none"> • the described innovation is not a computing innovation; • the response does not state the specific name of the data or simply says "data"; • the response confuses or conflates the innovation with the data: response fails to explain what happens to the data; or • the response confuses the source of the data with the data.
	<p>The response earned the point for this row.</p> <p>The response identifies the data being used as "data signals from several satellites that are in orbit around the Earth.... In general, the data it produces is the location." It states that these locations can be used to "figure out other things, like directions, speed, and more," which indicates how data is consumed.</p>	
	<p>Row 7 Response 2D</p> <ul style="list-style-type: none"> • Identify one data storage, data privacy, OR • data security concern related to the identified or described computing innovation. 	<p>Responses should be evaluated on the rationale provided in the response not on the interpretation or inference on the part of the scorer. Responses can earn this point even if they refer to the data in a general without specifically identifying the data being used.</p> <p>Do NOT award a point if any one of the following is true:</p> <ul style="list-style-type: none"> • the described innovation is not a computing innovation; or • the response identifies or describes a concern that is not related to data
<p>The response earned the point for this row.</p> <p>The data security concern cited is: "However, there can be some serious security concerns when it comes to using GPS. According to Catherine Rump, the government can track people's locations through their cell phone use."</p>		

References

2e. Provide a list of at least three online or print sources used to create your computational artifact and/or support your responses through in-text citation 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 complete and 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 in-text citations for the sources you used.
- Each source must be relevant, credible, and easily accessed.

Student Response	Scoring Guidelines	
<p>"0 Free Illustrations: Satellite." Satellite - Free Illustrations on Pixabay. N.p., n.d. Web. 05 Dec. 2016. <https://pixabay.com/en/photos/satellite/?image_type=illustration>.</p> <p>Bajaj, Karan. "How to Use GPS to Locate Things and Track People - The Economic Times." The Economic Times. N.p., n.d. Web. 05 Dec. 2016. <http://economictimes.indiatimes.com/wealth/spend/how-to-use-gps-to-locate-things-and-track-people/articleshow/55386722.cms>.</p> <p>"Buy Products Online from China Wholesalers at Aliexpress.com." Buy Products Online from China Wholesalers at Aliexpress.com. N.p., n.d. Web. 05 Dec. 2016. <https://www.aliexpress.com/popular/iphone-tracking-apps.html>.</p> <p>Rump, Catherine. "How GPS Tracking Threatens Our Privacy." CNN. Cable News Network, 07 Nov. 2011. Web. 07 Dec. 2016.</p> <p>"Course Correction: Navigating a More Cost-Effective Path to GPS Modernization." The MITRE Corporation. N.p., n.d. Web. 05 Dec. 2016. <https://www.mitre.org/publications/project-stories/course-correction-navigating-a-more-costeffective-path-to-gps-modernization>.</p> <p>"General Information On GPS." General Information On GPS. N.p., 8 Sept. 2016. Web. 05 Dec. 2016. <http://www.navcen.uscg.gov/?pageName=gpsmain>.</p> <p>"Gps+navigating - Google Search." Gps+navigating - Google Search. N.p., n.d. Web. 05 Dec. 2016. <https://www.google.com/search?q=gps%2Bnavigating&espv=2&biw=1366&bih=662&</p>	Row and Task	Decision Rules
	<p>Row 8 Response 2E & Artifact</p> <p>References, through in-text citation, at least 3 different sources.</p>	<p>The in-text citations can be in either the artifact or the written response. The in-text citations may be oral in the computational artifact.</p> <p>Do NOT award a point if any one of the following is true:</p> <ul style="list-style-type: none"> • the response contains a list of sources only, no in-text citations; • the response contains less than three in-text citations; or • there are fewer than three sources cited, even if there are three or more in-text citations.
<p>The response earned the point for this row. This response uses the authors' names as in-text citations (see responses 2a-d) of at least three attributed sources.</p>		

source=Inms&tbm=isch&sa=X&ved=0ahUKEwiDnIGYydXQAhUIZCYKHSA0Do8Q_AUICCGD#imgrc=iwmTck2WV1IDvM%3A>.

N.p., n.d. Web. <<https://www.streamliningip.com/track-kids-gps-watch/>>.

"Petslady.com." Petslady.com. N.p., 24 Oct. 2016. Web. 05 Dec. 2016.
<http://petslady.com/articles/5_best_pet_tracking_systems_dog_and_cat_owners_60624>.

"Redirect Notice." Redirect Notice. N.p., n.d. Web. 05 Dec. 2016.
<<https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&ved=0ahUKEwi3wPrVy9XQAhVC5CYKHcWhDUIQjhwIBQ&url=http%3A%2F%2Fwww.theaustralian.com.au%2Flife%2Ftracks-tile-and-duet-help-you-find-your-keys-andwallet%2Fstory-e6frg9zo-1226959598917&bvm=bv.139782543%2Cd.eWE&psig=AFQjCNH51ZFBh7jdbGS6buTFdjMsMiLvlw&ust=1480770892368270>>.

Yackulic, Chris. "Military Tactical Handset Running Android." AndroidHeadlines.com |. N.p., 05 Dec. 2016. Web. 05 Dec. 2016.
<<http://www.androidheadlines.com/2010/08/militarytactical-handset-running-android.html>>.

Zahradnik, Fred. "The Technology That Makes GPS Satellite-Based Navigation System Work." Lifewire. N.p., 16 Oct. 2016. Web. 05 Dec. 2016.
<<https://www.lifewire.com/how-gpsworks-1683296>>.