AP Computer Science Principles Course - Summer Assignment, 2019

Rationale: As part of the requirements for the AP Computer Science Principles exam, each student must complete a Performance Task requiring them to research a computing innovation, create a digital artifact representing the innovation, and submit answers to specific questions about the artifact and the computing innovation. The summer assignment is a simplified version of this Performance Task, using an "older" computing innovation. The goal of the assignment is to introduce some of the requirements of the Performance Task. During the course, we will enhance this summer assignment as students learn more about the requirements of the Performance Task

Google classroom codes for posting your assignment: This assignment requires 2 documents to be submitted in Google Classroom before the first day of school. Use the following codes:

- ❏ **HS North class code: x7mdf5c** You may email Mrs. Connelly at connellyj@middletownk12.org if you have questions
- ❏ **HS South class code: aisxiak** You may email Mrs. Fallon at fallone@middletownk12.org if you have questions.

Directions: (These directions are also available in Google Classroom)

- ❏ ***Research a computing innovation.***
  Choose a computing innovation from the list on page 3 of this document

- ❏ ***Use your research to create two documents that must be submitted in Google Classroom:***

  1. A computational artifact representing your computing innovation

  See the *TIPS ON CREATING YOUR ARTIFACT* section at the end of this document.

  A computational artifact is a visualization, graphic, video, or audio recording that illustrates, represents or explains the computing innovation's intended purpose, its function, and its effect on our lives.
  Try to find a creative way of conveying the results of your research. The artifact you create should adhere to the same requirements as the College Board's AP Performance Tasks. Acceptable multimedia file types include .mp3, .mp4, .wmv, .avi, .mov, .wav, .aif, or .pdf format. PDFs must not exceed 3 pages in length. Video or audio files must not exceed 1 minute in length and must not exceed 30 MB in size.

  2. A written response to the prompts below using this template (also available in Google classroom.)

  See the *TIPS ON THE WRITTEN RESPONSE* section at the end of this document.

  a. 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.
  - Describe the tools you used to create your computational artifact

  (Must not exceed 200 words and must use in-line citations to identify the source of your information)

  b. 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)*
  (NOTE: Since you are using "old" innovations, focus on effects that occurred when the innovation was popular)

  c. Provide a list of sources used to create your computational artifact and/or support your responses through in-text citation to the prompts above. You must have at least 2 sources. You must also include citations for any images used to create your computational artifact.. There is no strict format for this list, however it should include the following information:
  - 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.

RUBRIC FOR THE SUMMER ASSIGNMENT

1. Computational Artifact:		
	The computational artifact is in the correct format. ***Acceptable multimedia file types include .mp3, .mp4, .wmv, .avi, .mov, .wav, .aif, or .pdf format. PDFs must not exceed 3 pages in length. Video or audio files must not exceed 1 minute in length and must not exceed 30 MB in size.*** NOTE: Most tools you use to create your artifact will not produce a file in the correct format. See the ***TIPS ON CREATING YOUR ARTIFACT*** below for help on converting to an acceptable format.	**/4**
	The artifact identifies the **computing innovation** you researched.	**/2**
	The artifact provides an illustration, representation, or explanation of the computing innovation's intended purpose, function, or effect.	**/2**
	All images used in the computational artifact are cited either in the artifact or in part c of the written response.	**/2**
2. Written Response:		
a.	Names the computing innovation that is represented by your computational artifact.	**/2**
	Describes the computing innovation's intended purpose and function.	**/2**
	Describes how your computational artifact illustrates, represents, or explains the computing innovation's intended purpose, its function, or its effect.	**/2**
	Includes at least one in-line citation identifying the source of your information for this portion of your written response. The in-line citation must correspond with one of the sources listed in part c below.	**/2**
	Describes your development process, explicitly identifying the computing tools and techniques you used to create your artifact.	**/2**
b.	Identifies a beneficial effect AND a harmful effect of the **computing innovation**.	**/2**
	Explains how ONE of the identified effects relates to society, economy, or culture.	**/2**
	Includes at least one in-line citation identifying the source of your information for this portion of your written response. The in-line citation must correspond with one of the sources listed in part c below.	**/2**
c.	Provides a list of at least two online or print sources used to support the information in your written response. ● Include citations for the sources you used. ● Each source must be relevant, credible, and easily accessed. ● 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 In addition, if not already cited in the artifact, a list of sources for any images or multimedia items used to create your artifact should be included here.	**/4**
	Total:	**/30**

CHOOSING A COMPUTING INNOVATION

AP Computer Science Principles defines a computing innovation as:

"an innovation that includes a computer or program code as an integral part of its functionality".

For your summer assignment, you will need to research beneficial and harmful effects of your selected computing innovation on society, economy or culture. Choose the computing innovation you will research from this list (these are purposely "old" innovations for a reason that will be more clear when you take the course):

Facebook
MySpace
Camera phone
Personal Digital Assistant (PDA)
iPod
iMac
Google search engine
Gamecube
Wii (original)
Playstation (original)
xBox (original)
TiVo (original)
Roomba (robotic vacuum)
e-reader
Google Map

TIPS ON CREATING YOUR ARTIFACT

Your artifact must provide an illustration, representation, or explanation of the computing innovation's intended purpose, function, or effect. Below are some tools you may consider using to create your computational artifact:

- ❏ Create a digital poster using Google Slides, Google Drawings, Canva or similar tool. Be sure to use a tool that will export your poster in pdf format.
- ❏ Create a presentation using Google slides or any slide tool and then use Nimbus, Screencastify or any other screencasting tool to record a video. Be sure to use a tool that will create a file that can be converted to one of the required formats. (see note below)
- ❏ Use WeVideo to create a multimedia presentation. Be sure to convert your WeVideo file to one of the required formats. (see note below)

VIDEO

If you create a **video**, most of these tools will create a .webm video file, but it needs to be either .mp4, .mov, or .wmv file. If you need to convert, go to this website: http://convert-video-online.com/ to convert your video to .mp4 format.

DIGITAL POSTER

If you create a **digital poster**, it needs to be a .pdf file. Make sure you download or print your poster as a .pdf file. Also, try to be creative with the dimensions of the digital poster. If you are using Google Drawings or Google Slides, change the page setup to custom dimensions to make it more interesting. (File, Page Setup, Click Custom, then enter your own length and width).

REMEMBER: PDFs must not exceed 3 pages in length. Video or audio files must not exceed 1 minute in length and must not exceed 30 MB in size.

TIPS FOR WRITTEN RESPONSE

Your written response needs to include **in-text citations that correlate to the list of sources** included in your response part 2c. No special format is needed for the citations or the list of sources. Below is an **example** of a researched response (not the same topic as the summer assignment) with **in-text citations**. Notice the author for the citation is included in parentheses next to each research-supported statement which matches the author name in the list of sources.

Sample of cited Response:

Packet Filtering is one of the simplest forms of internet censorship introduced. Since the 90's packet filtering has grown and changed but the fundamentals of the process have stayed the same(**etutorials.org**). Packet Filtering has some beneficial and negative effects. For one it provides flexible security implementation at very fast speeds (**etutorials.org**) which allows for concentrated

targeting of certain information for censorship for larger or smaller scales. Institutions such as large or small schools can easily block items such as inappropriate language to provide a safer online culture for children to use. However, this comes at a price. Although fast and flexible, packet filtering is sometimes complex to implement while providing ineffective censorship (**checkpoint.com**). Because of its simplicity, Packet Filtering can be used as a "back door" of sorts for network attacks.

List of Sources:
"Firewall Categories."eTutorials editors, etutorials.org, eTutorials, 26 Oct. 2017, http://etutorials.org/Networking/Router+firewall+security.

"Packet Filtering."Check Point editors, checkpoint.com, Check Point Software Technologies Ltd., 26 Oct. 2017, https://www.checkpoint.com/smb/help/utm1/8.2/7078.htm

If you have questions, you can post a private message in Google Classroom or send an e-mail to your AP CSP Teacher.