

## Explore — Impact of Computing Innovations

### Written Response Submission 2017-2018

#### Submission Requirements

#### 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.

*(Must not exceed 100 words)*

Insert response for 2a in the text box below.

The computing innovation that I chose is virtual reality. This innovation has many different functions, depending on the design. Its intended purpose is to enhance or replace the world around you with a virtual one that can be modified. It can be used for things such as online shopping, gaming, and training. The computational artifact depicts an environment that is being filmed in virtual reality. It shows one of the many purposes of the innovation, allowing others to experience that environment without taking time to travel there. Also, the lower pictures illustrate how the innovation works and looks.

**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)*

Insert response for 2b in the text box below.

I used the graphic design website Canva ([www.canva.com](http://www.canva.com)) to create the design for the computational artifact. I used and restructured a built-in “photo collage” template to tailor it to virtual reality by inserting four pictures and adding text and an aesthetic divider shape. I utilized the built-in image editing tools to flip, crop, and darken the images to enhance the look. The built-in export tool allowed me to export it as a PDF file.

## 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)*

Insert response for 2c in the text box below.

Virtual reality has the potential to change many things about the way we interact with computers and our environment. Virtual reality exists in two forms: virtual reality creates a new, virtual world around you, while augmented reality enhances your surroundings to provide information (Charara). Augmented reality has significant potential to change the way we interact in the future, by providing us with beneficial information such as time, messages, directions, and other relevant or timely information with ease. By wearing a pair of glasses, one could read messages without holding his/her phone, reducing distractions. Since it is easier to focus on your surroundings when not looking at a phone, augmented reality has the potential to cut down on distracted walking- or cycling-related accidents. However, a harmful effect virtual reality may have on society is that people may become absorbed in the virtual world, and only interact through it instead of through face-to-face communication. Some may see it as an alternative to visiting others, which could increase the problem of obesity, while also increasing isolation and mental health problems (LaMotte).

**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)*

Insert response for 2d in the text box below.

Virtual reality uses image, motion, orientation, and distance data to operate (Mullis). All this data is consumed by the headset to allow the headset to detect user input and its surroundings. This data is then transformed by the program running on the headset to determine what to show the user and is outputted to the user in the form of image and audio data. A data privacy concern associated with virtual reality is the potential ability for companies to access the video or other sensor data recorded by these headsets, which could be used for things without your consent. Since the headset has seen where one has been walking or driving, someone else with access could also see this and may have the ability to find them against his/her will.

## 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.

(Note: No word count limit for this answer)

Insert response for 2e in the text box below.

Allison, Conor. "First Radio, Then Television – Now the BBC Wants to Pioneer News Storytelling in VR." *Wareable*, Wareable, 21 Feb. 2018, [www.wareable.com/vr/bbc-news-vr-storytelling-2848](http://www.wareable.com/vr/bbc-news-vr-storytelling-2848).

Bohn, Dieter. "Intel Is Making Smart Glasses That Actually Look Good." *The Verge*, The Verge, 5 Feb. 2018, [www.theverge.com/2018/2/5/16966530/intel-vaunt-smart-glasses-announced-ar-video](http://www.theverge.com/2018/2/5/16966530/intel-vaunt-smart-glasses-announced-ar-video).

Charara, Sophie. "The Difference between Augmented and Virtual Reality." *Raconteur*, Raconteur Media Ltd., 18 Oct. 2016, [www.raconteur.net/technology/what-is-the-difference-between-augmented-and-virtual-reality](http://www.raconteur.net/technology/what-is-the-difference-between-augmented-and-virtual-reality).

LaMotte, Sandee. "The Very Real Health Dangers of Virtual Reality." *CNN*, Cable News Network, 13 Dec. 2017, [www.cnn.com/2017/12/13/health/virtual-reality-vr-dangers-safety/index.html](http://www.cnn.com/2017/12/13/health/virtual-reality-vr-dangers-safety/index.html).

Marr, Bernard. "The Amazing Ways Companies Use Virtual Reality For Business Success." *Forbes*, Forbes Magazine, 31 July 2017, [www.forbes.com/sites/bernardmarr/2017/07/31/the-amazing-ways-companies-use-virtual-reality-for-business-success/#56d848a1bae9](http://www.forbes.com/sites/bernardmarr/2017/07/31/the-amazing-ways-companies-use-virtual-reality-for-business-success/#56d848a1bae9).

Mullis, Alex. "How Does Virtual Reality Work?" *Android Authority*, Android Authority, 15 July 2016, [www.androidauthority.com/virtual-reality-work-702049/](http://www.androidauthority.com/virtual-reality-work-702049/).

Warren, Tom. "Microsoft's Windows Mixed Reality: Everything You Need to Know." *The Verge*, The Verge, 17 Oct. 2017, [www.theverge.com/2017/10/17/16487936/microsoft-windows-mixed-reality-vr-headsets-guide-pricing-features](http://www.theverge.com/2017/10/17/16487936/microsoft-windows-mixed-reality-vr-headsets-guide-pricing-features).