

Mr. Ettlin

AP Computer Science, Period 1

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Explore Task: Amazon Echo

Computational Artifact

2a)

The computing innovation represented by my artifact is an Amazon Echo. The Amazon Echo functions like a smart speaker that is alerted when it hears its wake word, "Alexa." From here, people can verbally tell the Amazon Echo to do a number of tasks, completely hands free. The Amazon Echo then records what people say and sends this data to Amazon's servers for a written interpretation as well as a response that is sent back to the Amazon Echo. The Amazon Echo is like a virtual assistant and makes day to day tasks more hands free and easy. For instance, the Amazon Echo can do a variety of tasks like setting timers, telling you the news, sending texts, and more, all with a voice command.

2b)

First things first, I had to choose my computing innovation. I had to decide what I was going to write about. I looked on a variety of news sources and technology publications, when I came across the idea of the Amazon Echo. I already knew a fair amount about how the Amazon Echo worked, so after further research and after finding several more articles to back up my knowledge, I began my Explore Task responses. I used the school provided computers to conduct research as I went along with answering the questions, and I made sure to ask peers for help whenever I was confused.

2c)

One beneficial effect the Amazon Echo has on society is its independence it can offer people with visual impairments, physical handicaps, memory loss, or senior citizens as a whole. Many people with these impairments find it difficult to use many new technologies, but the ability to

simply ask the Amazon Echo a question and get a simple response makes it much easier (Pearl). Anyone can ask the Amazon Echo a question and receive a simple response without having to navigate hundreds of options on the Internet (Pearl). Further, because the Amazon Echo, if set up to be compatible, can control one's home lighting, temperature, and more, people that have to rely on others to normally control these devices can now be much more independent by asking their Amazon Echo themselves (Pearl). All things considered, the Amazon Echo effects society by providing senior citizens as well as people with various impairments with an easy access to technology as well as independence in their day to day life.

One harmful effect of the Amazon Echo is that when people are able to access information with such ease, and complete so many tasks so easily without ever speaking to a real life human, people can become isolated. Although older people might become more independent with the help of the Amazon Echo, this benefit also presents the harmful effect that these same people might become disconnected from society. By 2021, it is estimated that there will be almost as many virtual assistant robots as there are living people (Schulevitz). Affecting society as a whole, globally, it would be unsurprising to see people become more and more disassociated with each other, spending more and more time communicating with technology rather than people.

2d)

The Amazon Echo is constantly processing audio data from its surroundings. It listens 24/7 to its environment until it hears its wake word, "Alexa," and then it begins to stream the audio to Amazon's cloud, its data centers. In the cloud, the audio is converted into a written transcript where it is interpreted and a response is made. Once the response is made, this response is sent back to the Amazon Echo to be recited. A primary concern of the Amazon Echo's usage of this data would be security concerns. Everytime the Echo *thinks* it has heard its wake word, it records the next few sentences of whatever you say, and it sends this information to its servers,

the servers hold this data. Because the Amazon Echo can be set up to be compatible with many household appliances, the amount of data it processes can become a bit scary. For instance, knowing your thermostat habits could lead to knowing what times you're home, and more. If amazon were to start to use this plethora of data for the worse, customers may become victim to having their data sold/leaked, or more.

2e)

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