2a. My innovation is Bitcoin mining, which was created to increase the reliability of Blockchain. Bitcoin mining functions like a mine in real life. When there is a Bitcoin transaction occurring, miners solve mathematically complex problems on computers. They bundle a set of transactions into a 'block' which contains all of the information needed to track the bitcoin. Bitcoin miners must verify if all the transactions in a block are valid similar to how a miner must check the authenticity of gold to make sure it isn't some other mineral. My artifact shows the steps that a miner takes to gain Bitcoin and add a block to the blockchain.

2b. The tool I used to create the Computational Artifact was Google Drawings. I first created a basic flowchart design of how the process of mining works. Then I filled in some of the text boxes making sure the design wasn't too text heavy. Then I added color to each of the blocks, diagrams, and arrows. I fixed the fonts to make them more appealing, and then made a small picture of a blockchain in the middle. I made this artifact using the information I gathered from my research. "Bitcoin Mining." Bitcoin Mining, Hesiod Services, 2018, https://www.bitcoinmining.com/. 3/2/20.

2c. During the Greece Debt Crisis of 2008, the Greek government had to ask the European bank for money, and they received three payments totalling €289 billion or $330 billion. Over 400,000 people left Greece because of the crash, and the unemployment rate was 27.5% (CoinTelegraph). Many banks closed and there was widespread panic, similar to the bank closures of the Great Depression. As the Greek crisis unfolded, the amount of Bitcoin being sold and mined increased because consumers turned to a more reliable alternative (CoinTelegraph). The people positively impacted by Bitcoin mining are people who need more stability than what regular currency can provide. If you need to have a safe place to keep your savings, Bitcoin can be used as an alternative to say, gold. Bitcoin mining helped the economy significantly during this time because a lot of people were relying on the stability of Bitcoin.

A harmful effect of Bitcoin mining is that you need very specialized hardware to even begin mining. The energy consumption of Bitcoin mining alone uses a lot of electricity, and therefore requires the burning of natural gas or fossil fuels which contribute to climate change. Faster computers allow miners to solve PoW problems faster, but at the cost of our planet's natural resources (Hern). People that are negatively impacted by Bitcoin mining are also small scale miners. Large corporations have the money and the resources to quickly solve difficult problems leaving no Bitcoin for smaller miners (Zucchi).

2d. Bitcoin mining uses real currency as the backbone to buy Bitcoin in the first place. Bitcoin mining uses data because the Proof of Work problems which is used to confirm Bitcoin transactions and add new blocks to the chain. When you mine for bitcoin, the computer or computers are really solving complex equations to make numbers equal to the decimal values of bitcoin. The longer you computer runs, and in general how large the CPU is the more money you could potentially make (Beigel). By mining bitcoin, you are transforming data into money. One security concern posed by Bitcoin mining is that the Bitcoin could be used for illegal activities such as dealings on the black market or in the dark web which would compromise security (Tripwire). People can also view transactions because they are completely open to the public, so they could see information about certain transactions whenever they wanted to.

2e.

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