Explore task Questions **Name:** Allison Smith

> ● A computing innovation is an innovation that includes a computer or program code as an integral part of its functionality.
> ● Computing innovations may be physical computing innovations such as Google Glass or self-driving cars, non-physical computer software like a cell phone app, or computing concepts such as ecommerce or social networking which rely on physical transactions conducted on the Internet.

1. What is your computing innovation?

My computing innovation is an app that tracks lost dogs using the dog's nose print. The Chinese AI company, Megvii, is developing this app. Megvii also supplies facial recognition software for the Chinese government's surveillance program. Megvii has declared that, "it has a 95% accuracy rate" (Johnson).

> ● Purpose means the intended goal or objective of the innovation.
> ● Function means how the innovation works (e.g., consumes and produces data).

2. What is the intended purpose or function?

My computing innovation is intended to be used as an app that tracks lost dogs. Megvii claims that they have, "reunited 15,000 pets with their owners" (Garun) through the app. Not only does Megvii want to find lost dogs, but Megvii hopes to partner with the Chinese government to monitor "uncivilized dog keeping" (Garun). An example of "uncivilized dog keeping" is someone who doesn't pick up after their dog.

> ● An effect may be an impact, result, outcome, etc.
> ● Beneficial and/or harmful effects are contextual and interpretive; identification includes both the classification of the effect as beneficial or harmful and justification for that classification.

3. Identify at least one beneficial AND one harmful effect of your computing innovation?

One beneficial effect of the app is that lost dogs will be easier to find. In society today, dogs are valued and treated almost like children, so finding a lost dog is very important to people. Many dog owners would be excited to hear that there's a fast and easy way to find their dog when their dog is lost because it is a very stressful time for dog owners. One harmful effect of the app is privacy. It is unclear how the app can constantly monitor the dogs and if the app is connected with the government's surveillance, there may be an increase in fines. Privacy is very important in America and being constantly surveilled is a scary concept.

Effects need to be related to society, economy, or culture and need to be connected to a group or individuals. Examples include but are not limited to:
o The innovation and impact of social media online access varies in different countries and in different socioeconomic groups (EK 7.4.1A)
o Mobile, wireless, and networked computing have an impact on innovation throughout the world (EK 7.4.1B)
o The global distribution of computing resources raises issues of equity, access and power (EK 7.4.1C)
o Groups and individuals are affected by the "digital divide" (EK 7.4.1D)
o Networks and infrastructure are supported by both commercial and governmental initiatives (EK 7.4.1E)

4. Explain how your identified effect might relate to the economy, society, or culture?

The harmful effect of constantly monitoring will impact the economy and create changes in culture. If this app is accepted and is allowed to constantly monitor, then culture will adapt and begin to normalize surveillance. Older generations are less accepting of new technology than newer generations because cultures adapt as technology changes. The economy will change due to increased fines of civilians. There is plenty of dog poo left behind and if an owner gets fined for their dog, the economy will be impacted.

● Data types include: integers, numbers, Booleans, text, image, video, audio, signals. Data that infer these types like fingerprints, temperature, music, length, pictures, etc. are allowed.
● Data collection devices (e.g. sensors, cameras, etc.) are not data.
● Large data sets include data such as transactions, measurements, texts, sounds, images, and videos.

5. Describe the data that your computing innovation processes.

My computing innovation processes images and video. Megvii's app has, "AI-driven pattern recognition and image processing technologies" (Synced). Instead of using a fingerprint, like humans would to identity themselves, the app uses the dog's nose print. A dog's nose print, similar to a fingerprint, is "unique and remain unchanged over the life of the animal" (Synced). The app processes all the images.

6. Describe how the data that your computing innovation is consumed, produced, or transformed.

The data my computing innovation consumes images of a dog's nose print to produce facial recognition for that specific dog. The app requires photos from different angles in order to create the most accurate understanding of that dog's nose print.

7. Reference at least three sources that you will cite in your Explore responses.

Garun, Natt. “A Chinese AI Startup Is Tracking Lost Dogs Using Their Nose Prints.” *The Verge*, The Verge, 13 July 2019, www.theverge.com/2019/7/13/20693064/megvii-chinese-ai-facial-recognition-lost-pets-dogs-cats-surveillance.

Johnson, Daniel. “Artificial Intelligence Dog Tracking Ai Technology Startup.” *TrendHunter.com*, TREND HUNTER Inc., 19 July 2019, www.trendhunter.com/trends/ai-technology-startup.

Synced. “Who Let the Dogs Out? Ask Megvii's Nose Print Recognition System.” *Medium*, SyncedReview, 16 July 2019, medium.com/syncedreview/who-let-the-dogs-out-ask-megviis-nose-print-recognition-system-cbd9d79d932e.