[Key] Explore PT Survival Guide

Computing Innovation Brainstorm Activity (10 mins)

- Place a √ next to at least 3 innovations you think are *definitely* a good choice for the explore PT
- Place a **X** next to at least 3 that are *definitely NOT* a good choice for the Explore PT
- Start to jot down your own ideas for Computing Innovations you might want to use for the Explore PT

√ / X	**"Innovations" / topics**
?	Self-driving car
X	Fiber-optic cable
X	TCP Protocol
?	Smart watch
√	Music Recommendation App (e.g. Pandora)
X	Bluetooth speakers
X	Digital clock
?	Backup camera on a car
√	Facial recognition software
X	Email
?	Laptop computer
√	A system for digitizing and sharing medical records
X	Wireless phone charging
√	Instagram
?	Police body cameras
?	3D Printer
√	Bitcoin
?	Google glasses
√	Snapchat
?	GPS
√	A phone app
√	Video streaming service (e.g. Netflix)

Your Ideas for computing innovations to use for the Explore PT *Note: you can use one of, or some aspect of, the items in the list for your own task.*

√	Probably a good choice. It's software with well known social implications
X	Probably a bad choice. It's hardware or just simply not actually a computational thing. Some hardware might be able to be finessed into a computing innovation if you can find the software that drives it or processes the data it collects or works with. It can lead to some tricky situations for an exam reader though.
?	Maybe a good choice assuming you focus on the actual computational part for all aspects of the task and not simply the broader technology itself. Some of these can be turned into great topics for the explore PT if done right.

Notes:

- Many innovations you've studied or read about in this class are not good choices.
- Assume you'll need to do quick research on a few ideas before you land on an actual topic for this task.
- A common pitfall is to choose a technological innovation without identifying the computational aspect of it. For example: a self-driving car is a technological innovation. But a good choice for the performance task is to identify a particular aspect of a self-driving car that clearly involves computing.
- Hardware is often a gotcha - make sure you can identify the computing part.

Brainstorm: harmful effects v. data security concerns (10 mins)

One of the challenging things about the Explore PT in doing research is distinguishing between a Harmful Effect and a Data Security Concern. Computing innovations can lead to “bad stuff” happening but for the Explore PT is it a harmful effect or data storage, privacy, security concern? Here’s how to think about it:

Harmful effects on society, economy, culture

Translation: *what are the unintended consequences of this innovation on specific groups of people assuming the innovation works as intended? For harmful effect: who or what stands to lose from wide use of this innovation now, or in the future?*

V.

Data storage, privacy, or security concern

Translation**:** *What are the risks? How could the data be misused? What are the security or privacy risks?*

Activity: Here’s a list of “bad” stuff resulting from computing innovations. Identify which is a harmful effect and which is a data storage/security/privacy concern (following the Explore PT definitions)?

“Bad stuff” from computing	Harm	Data
Autonomous cars must constantly collect and store data about their location. Hacking this information could allow attackers to remotely track where drivers travel.		√
Autonomous cars will displace thousands or even millions of people currently employed as bus, taxi, and truck drivers.	√	
Digitizing and moving medical records online makes it significantly easier for attackers to access personal information about almost anyone in the country / world.		√
Music recommendation systems may inadvertently direct listeners towards a more narrow selection of music, decreasing the diversity of our cultural output and consumption.	√	
The growing use of facial recognition software makes it increasingly challenging to navigate society anonymously.	√	
Online advertising is so individualized that we can now operate within our own “filter bubbles”. For example political discussion suffers as it becomes challenging to communicate based on a set of shared experiences or pieces of information.	√	
Data about things that you have "Liked" online can be used to make reasonable guesses about your age, gender, location, and many other pieces of personal information.		√
Car sharing apps like Uber or Lyft have contributed to a class of workers who may work full time but do not enjoy the typical social and economic benefits typically associated with full time work.	√	
Your location history in a mapping app can allow someone to know where you live, go to school, or spend time.		√

Rapid Research Activity - Harmful Effects (10 mins)

Now that you have a sense of what a harmful effect is you will practice doing some rapid research to see if you can quickly identify a harmful effect for some innovation. Remember that for the harmful effect you should:

- Assume the innovation is being used or works as intended
- Identify the impact on society, economy or culture

- Identify a specific group of people who are impacted

Research Tips: Since you need to identify harmful effects to specific elements of society and people, you might kick off your research by searching for things like:

- "The unintended consequences of ____"
- "pros and cons of ____"
- "the downsides of ____"
- "____ economic impacts"

Rapid Research: Harmful Effects	
Pick one of the computing innovations from the Computing Innovation Brainstorm Activity (either from the list or one that you wrote down) and see how quickly you can find a harmful effect that will work for the Explore PT. Fill in the table below with what you found	
Computing Innovation:	
Harmful Effects I found:	**Group of people of people affected:**
Is this primarily an impact on… ☐ **Society** ☐ **Economy** ☐ **Culture**	
Search Terms I used:	**Sites / Articles I found:**

Notes on groups of people, society, economy, culture:

- **culture** - can be thought of as a group of people: example – football players are a culture, students that have asthma are a culture
- **economy** - can be thought of as a group of people with similar economic interests, or whose jobs or or industry are similar. Example: (Netflix put companies like Blockbuster and rental places out of business)
- **society** - try to avoid "society". It's too broad. Get specific: Which society? Whose society?

Explore PT Planning Organizer

Innovation Name:

Facts about purpose and function:

*Response **2a***
*Row **2***

Artifact Planning Ideas:

Computational Artifact
*Row **1***

How does the artifact illustrate represent OR explain the innovation's purpose, function or effect?

Explain one effect of the innovation.

*Response **2c***
*Row **3***

Explain one beneficial effect (and the group affected, provide source)

*Response **2c***
*Row **4, 5***

Explain one harmful effect. (and the group affected, provide source)

*Response **2c***
*Row **4, 5***

Description of data used by innovation (specific type; describe how below)

*Response **2d***
*Row **6***

Input (consume)

*Row **6***

Process (transform)

*Row **6***

Output (produce)

*Row **6***

Explain one data storage, privacy or security concern from misuse of innovation and/or its data

*Response **2d***
*Row **7***

References:

1)

2)

*Response **2e***
*Row **8***

Explore PT Completion Timeline

Before you start you should think about how you are going to allocate your time for 8 hours provided for the task. Below is a sample timeline that you can use to plan out how you will complete the Explore Performance Task.

Hour	Suggested Activity	Your Plan
1	Brainstorm ideas for computing innovations ● Do rapid research to decide what to do ● Use the Explore PT Planning Organizer **Goal:** By the end of this day you should know what your innovation is and most of the sources you will cite	
2	Research and draft responses for prompts 2c, 2d: ● Use the Explore PT Organizer ● **2c** - Beneficial and Harmful Effects ● **2d -** How it uses data + security concern	
3	Continue work from Day 2 **Goal:** Finish responses **2c** and **2d**	
4	Create the computational artifact ● Use the PT Organizer to sketch an idea ● **Goal:** know what you're going to make for artifact and start it.	
5	● Continue work on computational artifact ● Draft response to **2a** - Intended purpose or function of innovation.	
6	Continue Comp. Artifact + **2a** **Goal:** Finish Comp. Artifact and response **2a**	
7	Review, clean up, touch up ● Complete **2e** - References ● Complete Response **2b** ● Make sure you have source cited for any fact or claim in **2a, 2c, 2d**	
8	Complete the task ● Review the submission materials ● Check your responses against the scoring guidelines ● Enter your responses into the digital portfolio ● Upload your computational artifact (and/or PDF of written responses to the the digital portfolio) **Goal:** At the end of this day, your Explore PT is submitted!	

Note: The timeline above is just a guideline. You may complete the performance task on a different schedule. Make sure to leave enough time to complete your computational artifact and write-up.