Feedback — Module 8 Concepts problem set

You submitted this quiz on **Sun 16 Nov 2014 6:24 AM PST**. You got a score of **7.00** out of **10.00**.

Question 1

SubwayPS is necessary because…

Your Answer		Score	Explanation
⚪	… subway trains travel too fast for GPS to work		
🔘	… none of the positioning technologies employed on most smartphones work on subways	✔ 1.00	
⚪	… it can take advantage of underground GPS technology		
⚪	… traditional smartphone positioning on subways is illegal in most countries		
Total		1.00 / 1.00	

Question Explanation

GPS, wifi and cell positioning do not work in underground transportation networks, so other positioning techniques were needed.

Question 2

SubwayPS works by…

Your Answer		Score	Explanation
◯	taking advantage of very faint GPS signals		
⦿	taking advantage of accelerometers and gyroscropes	✔ 1.00	
◯	taking advantage of barometers		
◯	taking advantage of other smartphone sensors like Bluetooth		
Total		1.00 / 1.00	

Question Explanation

SubwayPS measures the amount of shaking on a train using a smartphone's accelerometer and gyroscope.

Question 3

What is another context in which smartphone positioning might not work? (Choose the best possible answer)

Your Answer		Score	Explanation
○ In urban canyons (i.e. "multipath")			
○ In an underground cave in a rural area (no cell signal)			
⦿ Underground in a shopping mall	✖	0.00	
○ All places where there are no wifi networks			
○ On a lake in a rural area (with no cell signal)			
Total		0.00 / 1.00	

Question Explanation

Caves in rural areas share many of the same properties as subway systems. There is likely no wi-fi, GPS won't work, and we have stated a priori that cell positioning is not possible (a likely scenario). In all the other options, at least one smartphone positioning method will likely work.

Question 4

Atlasify is what kind of search system?

Your Answer		Score	Explanation
○	Navigational search		
○	Exploratory search, because it has built-in navigation		
●	Exploratory search, because it helps with open-ended, persistent queries	✔ 1.00	
○	Closed information request search		
	Total	1.00 / 1.00	

Question Explanation

Atlasify is an exploratory search system that helps people with, as White and Roth write, "information-seeking problem context[s] that [are] open-ended, persistent, and multifaceted".

Question 5

Atlasify is an example of a…

Your Answer		Score	Explanation
●	Reference map system	✖ 0.00	
○	Navigation system		

🔘 Spatialization system

Total   0.00 / 1.00

Question Explanation

Atlasify uses something called explicit spatialization to generate its visualizations. We covered spatialization in more detail in Module 7.

Question 6

What are goals of evacuation route planning algorithms?

Your Answer		Score	Explanation
🔘 It should scale up to large metropolitan transportation networks			
🔘 It should scale up to large evacuee-population			
🔘 It should reduce evacuation time			
🔘 All of the above	✔	1.00	
Total		1.00 / 1.00	

Question 7

Which is not a goal of investigating spatial big data for next-generation routing services?

Your Answer		Score	Explanation
⦿ Speed-up current shortest path algorithms	✔	1.00	
◯ Allow users to ask for routes lowering fuel-use (beyond travel-time or travel-distance)			
◯ Evaluate emerging big spatial data (e.g., temporally-detailed roadmaps, GPS-tracks)			
◯ Allow consumer to ask for best start-time (to reduce time spent in transit)			
Total		1.00 / 1.00	

Question 8

Which is true about cascade spatio-temporal pattern (CSTP)?

Your Answer	Score	Explanation

It represents subsets of event-types, whose instance are together in space and time

It represents a directed acyclic graph of event-types, whose instances are ordered in time and together in space

It uses statistical significance to reduce false positives

All of the above   ✖   0.00

Total   0.00 / 1.00

Question 9

Which of the following are true about ring-shaped hotspot detection?

Your Answer	Score	Explanation
It tries to narrow down geographic search for (evasive) crime-sources		
SatScan may miss many significant ring-shaped hotspots		
It uses statistical significance to reduce false positives		

⊙ All of the above	✔	1.00
Total		1.00 / 1.00

Question 10

Which professional societies represent spatial computing? (Hint: Review Appendix C of SC-2020 for US Counterparts).

Your Answer	Score	Explanation
◯ Association for Computing Machinery SIG SPATIAL		
◯ International Society of Photogrammetry and Remote Sensing		
◯ Institute of Navigation		
◯ International Geographical Union		
⊙ All of the above	✔ 1.00	
Total	1.00 / 1.00	