

## Feedback — Module 6 Concepts problem set

[Help](#)

You submitted this quiz on **Mon 3 Nov 2014 10:56 AM PST**. You got a score of **9.00** out of **12.00**.

### Question 1

Most smartphones have which of the following signal-based positioning capabilities

Your Answer	Score	Explanation
<input type="radio"/> (a) Hyperspectral radar		
<input type="radio"/> (b) GPS positioning		
<input type="radio"/> (c) Algorithms to geolocate tweets built into operating system		
<input type="radio"/> (d) Wifi positioning		
<input type="radio"/> (e) Cell tower positioning		
<input type="radio"/> (f) Acoustic positioning		
<input type="radio"/> (b) and (f)		
<input checked="" type="radio"/> (b), (d), and (e)	✓ 1.00	
<input type="radio"/> (b), (c), and (f)		
Total	1.00 / 1.00	

#### Question Explanation

Most smartphones have GPS, wifi and cell tower positioning. While other types of positioning are becoming more common, none of them are listed here.

## Question 2

If you have a GPS device (with no other positioning capabilities), where will positioning be the most accurate?

Your Answer	Score	Explanation
<input type="radio"/> Downtown in a big city		
<input checked="" type="radio"/> In an empty field in a very rural area	✓ 1.00	
<input type="radio"/> In a house in a suburban area		
<input type="radio"/> In a dense forest in a very rural area		
<input type="radio"/> When traveling underground on a subway		
Total	1.00 / 1.00	

### Question Explanation

GPS works best when it has an unobstructed view of a large portion of the sky.

## Question 3

If you have a wifi positioning device (with no other positioning capabilities, e.g. an iPod Touch), where will positioning be the most accurate?

Your Answer	Score	Explanation
<input type="radio"/> Downtown in a big city		
<input type="radio"/> In an empty field in a very rural area		
<input type="radio"/> In a forest in a very rural area		
<input type="radio"/> When traveling underground on a subway		

☐ In a house in a suburban area ✗ 0.00

Total 0.00 / 1.00

**Question Explanation**

Wifi positioning works best when there are lots of wifi networks in range.

## Question 4

How have companies like Google and Apple collected router position data for wifi positioning?

Your Answer	Score	Explanation
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☐ (a) Satellite radar

☐ (b) Partnering with wifi router companies

☐ (c) War driving

☐ (d) Mining data from IP addresses

☐ (e) Crowdsourced wifi router mapping

☒ (c) and (e) ✓ 1.00

☐ (a) and (b)

☐ (d) and (e)

Total 1.00 / 1.00

**Question Explanation**

War driving was done with Google's Street View cars and Apple has said that it uses "a crowd-sourced database of Wi-Fi hotspot and cell tower data that is generated by tens of millions of iPhones sending the geo-tagged locations of nearby Wi-Fi hotspots and cell towers in an anonymous and encrypted form to Apple".

## Question 5

Which of the following is NOT a risk of using data in location fields in user profiles of social media websites (e.g. Twitter)?

Your Answer	Score	Explanation
<input type="radio"/> Limited geographic precision		
<input checked="" type="radio"/> They are automatically populated by GPS signals for most users	✓ 1.00	
<input type="radio"/> Many entries are not geographic in nature (e.g. "Middle Earth")		
<input type="radio"/> Not everyone fills them out		
Total	1.00 / 1.00	

### Question Explanation

In the module, we learned that most location fields on Twitter are at the city-level, many entries are not geographic and many people leave them blank.

## Question 6

What are the two types of ambiguity faced by algorithms that convert place names into machine-readable geographic representations (e.g. point, polygon)?

Your Answer	Score	Explanation
<input type="radio"/> Geo/geo ambiguity and toponym generalization ambiguity		
<input checked="" type="radio"/> Geo/geo ambiguity and geo/non-geo ambiguity	✓ 1.00	
<input type="radio"/> Platial ambiguity and spatial ambiguity		
<input type="radio"/> Toponym generalization ambiguity and platial ambiguity		

Total

1.00 / 1.00

**Question Explanation**

These algorithms must determine if a term is a place name (geo/non-geo ambiguity) and, if it is, to which place it refers (geo/geo ambiguity).

## Question 7

Which is an example of a geo/geo ambiguity problem?

**Your Answer****Score****Explanation**

☐ (a) Determining whether the term "Washington" refers to "Washington, D.C." or "George Washington".

☐ (b) Determining whether the term "Chicken" refers to the animal or "Chicken, Alaska, USA."

☒ (c) Determining whether the term "Albany" refers to "Albany, New York, USA" or "Albany, California, USA". ✓ 1.00

☐ (d) Determining whether the term "Northwestern" refers to "Northwestern University" or "The Northwestern University Football Team".

☐ (a) and (b)

☐ (a) and (c)

Total

1.00 /

1.00

**Question Explanation**

Geo/geo ambiguity is about identifying the referent of a term that has determined to be a toponym (place name).

## Question 8

What is likely to be the strongest clue available to solve the above problem (Q7) ?

Your Answer	Score	Explanation
<input type="radio"/> Whether the term was written on a smartphone or a computer		
<input checked="" type="radio"/> The text surrounding the term	✓ 1.00	
<input type="radio"/> The correctness of the spelling of the term		
Total	1.00 / 1.00	

### Question Explanation

We discussed in the module how semantic relatedness algorithms can be used to leverage the text surrounding a term to help disambiguate that term.

## Question 9

If I don't enter any information into my location field and I don't geotag any social media on a given social network (e.g. Twitter, Instagram), I can't be located by a third-party with access to information from the network.

Your Answer	Score	Explanation
<input type="radio"/> True, because it is technically impossible to do so		
<input type="radio"/> True, because it is against the law to do so		
<input checked="" type="radio"/> False	✓ 1.00	
Total	1.00 / 1.00	

### Question Explanation

We learned in the module that researchers have already done this and it is not against the law. We also learned a bit about how to go about doing this.

## Question 10

If you needed the most precise possible location, which of the following positioning techniques would be most desirable:

Your Answer	Score	Explanation
<input type="radio"/> GPS with a fix on two satellites		
<input checked="" type="radio"/> GPS with a fix on eight satellites	✓ 1.00	
<input type="radio"/> Wifi positioning in a rural area		
<input type="radio"/> Cell tower positioning		
<input type="radio"/> Location-field positioning using Twitter profiles		
<input type="radio"/> The inference attack positioning technique described in Hecht et al. 2011.		
<input type="radio"/> None are very precise		
Total	1.00 / 1.00	

### Question Explanation

GPS with a fix on eight satellites is much more precise than any of the other methods described (e.g. location-field positioning is likely to only reveal a city-level location, when it works).

## Question 11

According to Hecht et al. 2011, geocoders are very good at handling geo/non-geo ambiguity in location field entries.

Your Answer	Score	Explanation
<input type="radio"/> True		
<input checked="" type="radio"/> True, when they are combined with search engines	✖ 0.00	
<input type="radio"/> False		
Total	0.00 / 1.00	

**Question Explanation**

The geocoder described in Hecht et al. 2011 returned lat/lon coordinates for over 80% of non-geographic location field entries.

## Question 12

According to Hecht et al., online communities should provide more than one location field in user profiles.

Your Answer	Score	Explanation
<input type="radio"/> True, because this will encourage people to enter information that is geographic in nature.		
<input type="radio"/> True, because some people enter more than one location into their location field anyway		
<input checked="" type="radio"/> False	✖ 0.00	
Total	0.00 / 1.00	

**Question Explanation**

Hecht et al. 2011 found that a small portion of users entered more than one toponym in their Twitter location field. This recommendation was highlighted as an implication for design.



