Introduction to Graphs

12/12 questions correct

Quiz passed!

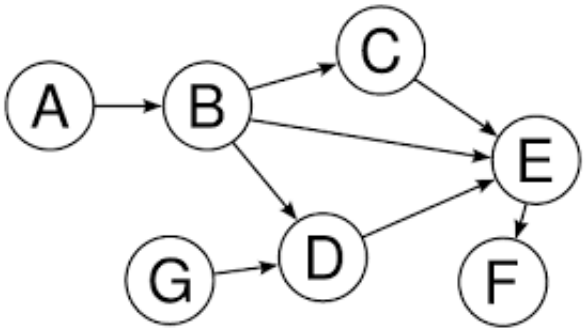
Continue Course (/learn/graph-analytics/peer/R53vw/graphs-in-everyday-life)

Back to Week 1 (/learn/graph-analytics/home/week/1)

1.

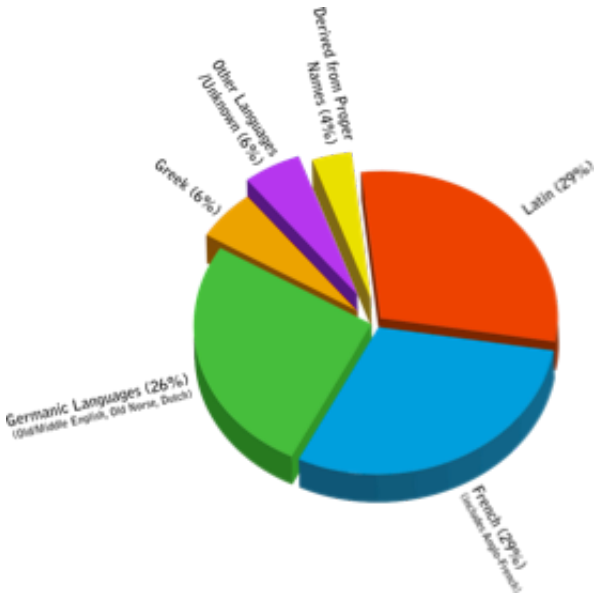
Which of the following are graphs? (check all that apply)

☐



Well done!

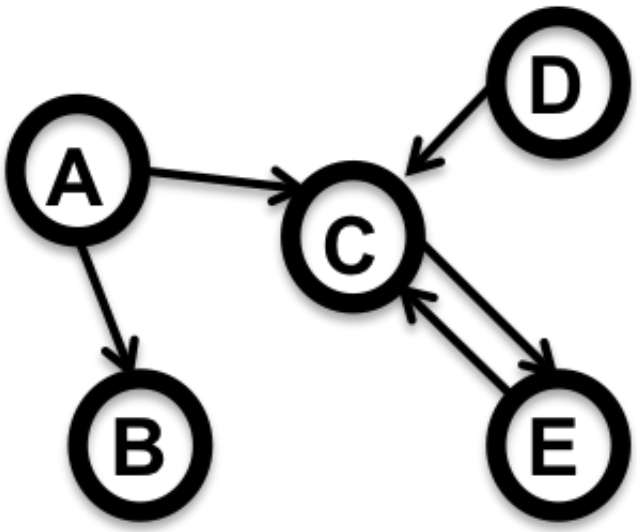
☐



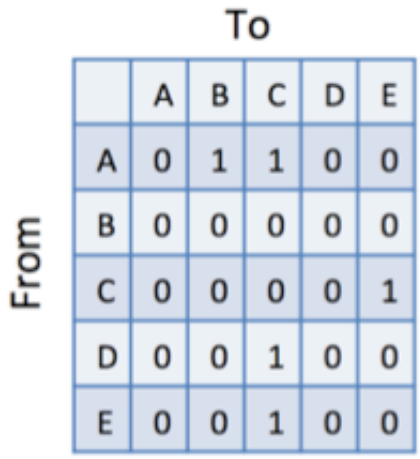
Well done!
Hint: Graphs do NOT show a mapping of categories to data.
Review this concept in this video (https://www.coursera.org/learn/graph-analytics/lecture/UeyhP/what-is-a-graph).

2.

Which of the following is the correct adjacency matrix for this graph?



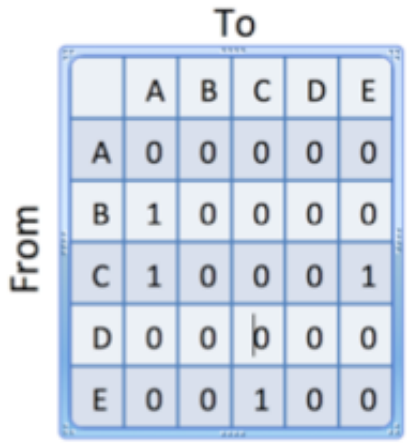
○



From \ To	A	B	C	D	E
A	0	1	1	0	0
B	0	0	0	0	0
C	0	0	0	0	1
D	0	0	1	0	0
E	0	0	1	0	0

Well done!

○



From \ To	A	B	C	D	E
A	0	0	0	0	0
B	1	0	0	0	0
C	1	0	0	0	1
D	0	0	0	0	0
E	0	0	1	0	0

○ Neither option is correct.

✔ 3.

Which of the following content would be objects (or nodes) in a graph that represents the activity in a facebook page?

- [ ] Created_post

Well done!
Hint: This is a relationship. Review this concept in this video (https://www.coursera.org/learn/graph-analytics/lecture/9QQ0H/why-graphs).

- [ ] friends (the action of making someone your friend)

Well done!
Hint: This is a relationship. Review this concept in this video (https://www.coursera.org/learn/graph-analytics/lecture/9QQ0H/why-graphs).

- [ ] location

Well done!

- [ ] post text

Well done!

- [ ] comment text

Well done!

✔ 4.

Based on the videos, which kinds of analysis might one be able to perform on a tweet graph?

- [ ] find interacting groups of users

Well done!
Review this at the end of this video (https://www.coursera.org/learn/graph-analytics/lecture/9o1TK/why-graphs-example-1-social-networking).

☐ find influencers in a twitter community

Well done!
Review this at the end of this video (https://www.coursera.org/learn/graph-analytics/lecture/9o1TK/why-graphs-example-1-social-networking).

☐ extract conversation threads

Well done!
Review this at the end of this video (https://www.coursera.org/learn/graph-analytics/lecture/9o1TK/why-graphs-example-1-social-networking).

✔ 5.

The key reason mentioned in the video that biology applications need Big Data analytics is...

○ The integration of multiple data sources from different researchers and of different sources of information.

Well done!
Integration of multiple data sets, especially from different sources and different types gets at one of the core concepts that underlies the need for Big Data -- integration.

○ The new use of computational techniques to explore new areas of biology research more quickly than can be done with "live" or wetlab experiments.

- The complexity of interactions that correlate to inform phenotypes.

✔ 6.

Which of the Vs BEST describes the result in constant increasing in the number of edges in a graph, sometimes causing challenges in knowing when one has found "an answer" to one's analysis question?

- Variety
- Velocity

Well done!

- Valence
- Volume

✔ 7.

Which of the Vs results in increased algorithmic complexity (which can cause analyses to not be able to finish running in reasonable amounts of time)?

- Valence
- Volume

Well done!

- Variety
- Velocity

8.

Which of the Vs results in challenges due to graphs created from varying kinds, formats, sources, and meanings of data?

- Volume
- Variety

Well done!

- Velocity
- Valence

9.

Which of the Vs causes increased interconnectivity of a graph -- which can cause problems in analysis due to density?

- Variety
- Volume
- Valence

Well done!

- Velocity

10.

Updating a graph with a stream of posting information on facebook is an example of which of the Vs?

- Velocity

Well done!

- Volume
- Variety
- Valence

11.

Studying Amarnath's gmail interactions over time (as gmail started to be used by more and more people) is BEST defined as an impact of which of the Vs?

- Valence

Well done!

- Velocity
- Variety
- Volume

12.

Which of the Vs is most relevant to the kinds of graph analysis you are interested in? Tell us why in a sentence or 2. (Any response will be counted correct.)

My field of work is related to virtual datacenters. The variety of the machines, network appliances, virtual VMs, etc. involved in a data center are huge and thus i think variety would be more relevant to my use case.

Well done!

Thanks for thinking about this! Research shows that effortfully reflecting on how something applies to your interests helps you in remembering and understanding new material better!

Thanks for making the effort!