Graph Analysis from Big Data Perspective
Quiz, 10 questions

9/10 points (90.00%)

✓ **Congratulations! You passed!**

Next Item

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point

1.
Imagine a football championship in your country and you've decided to represent the information about matches between teams in a shape of a graph. What type of graph will you choose:

○ Directed

◉ Undirected

Correct
True. Let's call teams A and B. If team A plays with team B this means that team B plays with team A.
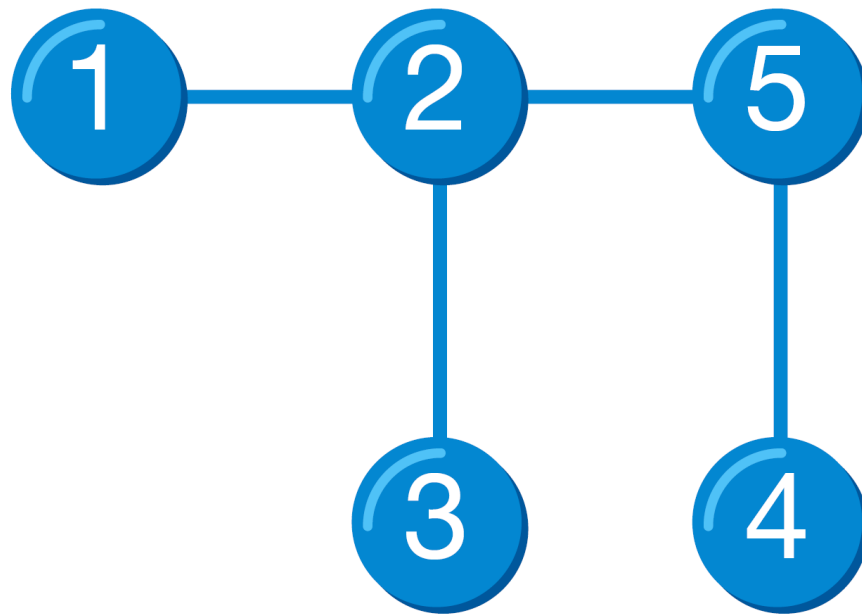
0 / 1
point

2.

Having decided to store the following graph in the form of an edge list, please specify, how the graph will look

Graph Analysis from Big Data Perspective
like?

Quiz, 10 questions

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○ [(1, 2), (2, 1), (2, 3), (3, 2), (2, 5), (5, 2), (4, 5), (5, 4)]

▲

This should not be selected

False, the graph in the picture is undirected then there is no need to include its reversed copy for each edge

○ [(1, 2), (2, 3), (2, 5), (4, 5)]

○ [(1, 2), (2, 3), (2, 5), (3, 1), (4, 5)]
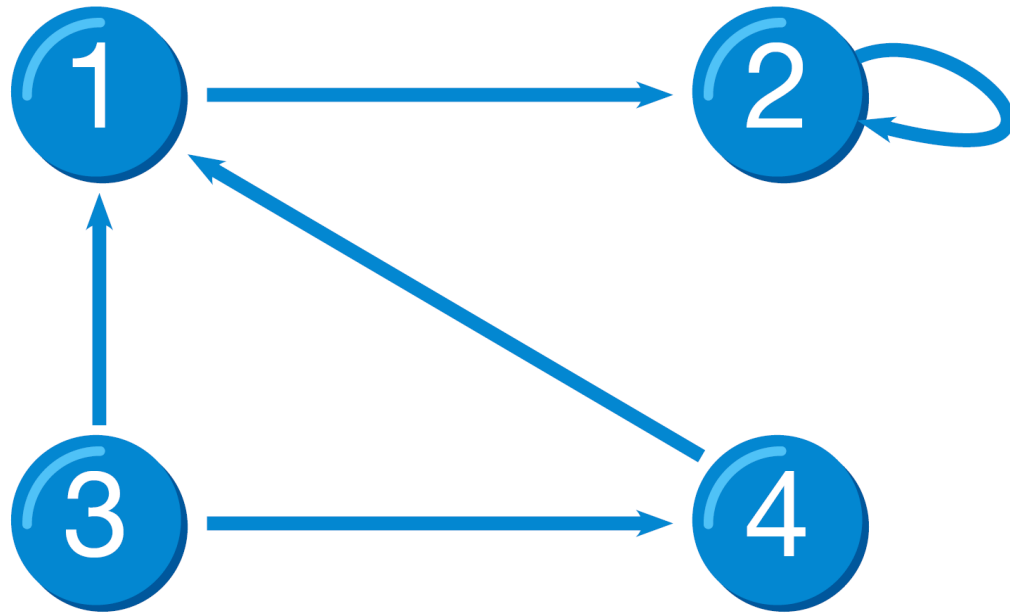

✔ 1 / 1 point

3.

Having decided to store the following graph in the form of an adjacency matrix, please specify, how the graph

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will look like

Quiz, 10 questions

9/10 points (90.00%)

0	1	0	0
0	1	0	0
1	0	0	1
1	0	0	0

Correct

Correct, this matrix has all necessary edges

0	1	1	1
1	1	0	0
1	0	0	1
1	0	1	0

1 / 1
point

Graph Analysis from Big Data Perspective

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Quiz, 10 questions To build a GraphFrame you need two DataFrames: one for vertices (let's call it "vertexDF") and the second for edges (let's call it "edgeDF"). What obligatory columns should both of them have?

○   vertexDF should not have any obligatory columns and edgeDF should have two obligatory columns "src" and "dst"

○   both DataFrames should not contain any obligatory columns and can contain arbitrary columns. Those columns can represent vertex and edge attributes.

○   vertexDF should have the obligatory column "id" and edgeDF shouldn't contain any special columns

◉   vertexDF should have the obligatory column "id" and edgeDF should have two obligatory columns "src" and "dst"

▲

Correct

True. A vertex DataFrame should contain a special column named "id" which specifies unique IDs for each vertex in the graph. An edge DataFrame should contain two special columns: "src" (source vertex ID of edge) and "dst" (destination vertex ID of the edge).

✔️   1 / 1 point

5.

Does GraphFrame represent directed or undirected graph?

◉   It represents a directed graph

▲

Correct

True. Because by default each edge in the GraphFrames library has a direction from the source vertex to the destination vertex

○   It represents an undirected graph

✔️   1 / 1 point

6.

You have created GraphFrame with the name g from the vertex DataFrame named vertexDF and the edges DataFrame named edgeDF. How can you get the original DataFrames vertexDF and edgeDF from g?

◉   by g.vertices and g.edges

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b. A True. The original vertices and edges dataframes could be obtained by g.vertices and g.edges respectively.

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○   it's impossible

○   by g.vertexDF and g.edgesDF

✔   1 / 1
point

7.

If a motif contains named vertex a, then the resulting DataFrame will contain a column "a" which is a StructType. What will the sub-fields of this StructType be equivalent to?

○   To the schema with only one field "Id"

○   To the schema (columns) of the original GraphFrame

◉   To the schema (columns) of the original GraphFrame.vertices

▲

Correct
True. You are learning blazingly fast, I'm proud of you.
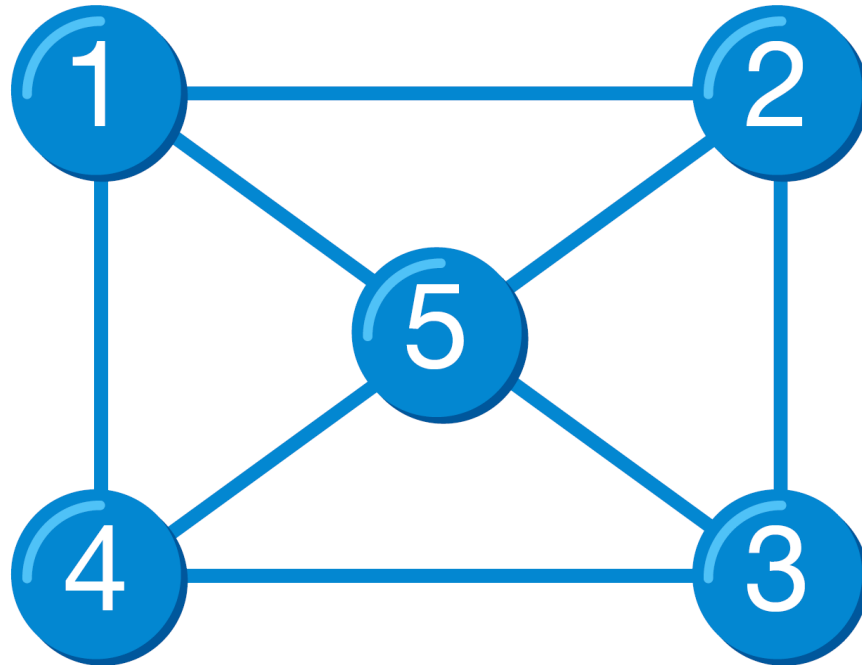

✔   1 / 1
point

8.

How many triangles are passing through vertex 5 in the graph in the picture?

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◯ 4
△

Correct

True. The triangles 1-2-5, 1-4-5, 2-3-5, 3-4-5 are passing through vertex 5.

◯ 3

◯ 5

✔ 1 / 1
point

9.

How does the triangleCount method of graphFrames treat the directed graph?

◯ This algorithm keeps the edge direction that is all the edges are treated as directed.

◯ This algorithm ignores the edge direction that is all the edges are treated as undirected.
△

Correct

Yes, you are right!

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✓ 1/1
point

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10.
How to describe a triangle (A, B, C) after the flipping operation on DSL language of motif finding?

○ "(A)- ->(); ()- ->(); ()- ->(C)"

○ "(A)- ->(B); (B)- ->(C); (C)- ->(A)"

◉ "(A)- ->(B); (B)- ->(C); (A)- ->(C)"

Correct
Yes, you are absolutely right!