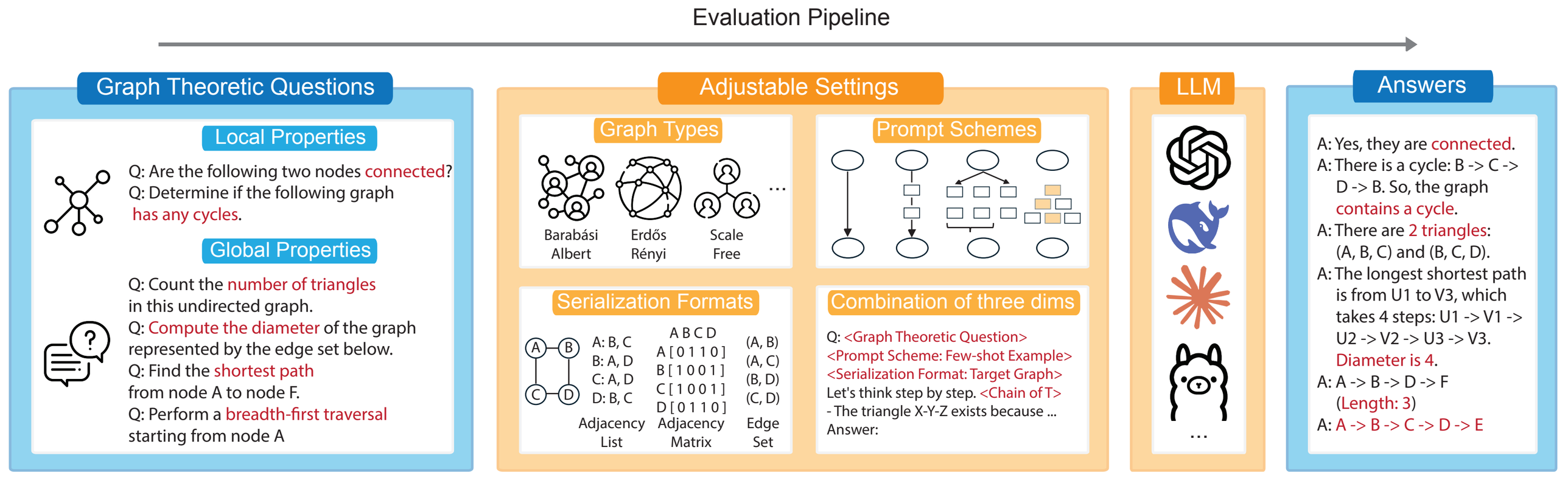
Evaluation Pipeline
Graph Theoretic Questions
Local Properties
Q: Are the following two nodes connected?
Q: Determine if the following graph has any cycles.
Global Properties
Q: Count the number of triangles in this undirected graph.
Q: Compute the diameter of the graph represented by the edge set below.
Q: Find the shortest path from node A to node F.
Q: Perform a breadth-first traversal starting from node A
Adjustable Settings
Graph Types
Barabási Albert
Erdős Rényi
Scale Free
...
Prompt Schemes
Serialization Formats
A: B, C
B: A, D
C: A, D
D: B, C
Adjacency List
A B C D
A [0 1 1 0]
B [1 0 0 1]
C [1 0 0 1]
D [0 1 1 0]
Adjacency Matrix
(A, B)
(A, C)
(B, D)
(C, D)
Edge Set
Combination of three dims
Q: <Graph Theoretic Question>
<Prompt Scheme: Few-shot Example>
<Serialization Format: Target Graph>
Let's think step by step. <Chain of T>
- The triangle X-Y-Z exists because ...
Answer:
LLM
...
Answers
A: Yes, they are connected.
A: There is a cycle: B -> C -> D -> B. So, the graph contains a cycle.
A: There are 2 triangles: (A, B, C) and (B, C, D).
A: The longest shortest path is from U1 to V3, which takes 4 steps: U1 -> V1 -> U2 -> V2 -> U3 -> V3. Diameter is 4.
A: A -> B -> D -> F (Length: 3)
A: A -> B -> C -> D -> E