Homework 1

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* Consider questions A through F:

A. What is the maximum number of directed arcs associated with an area?

B. What is the minimum number of directed arcs associated with an area?

C. What is the maximum number of left-bounding area for a given arc?

D. What is the minimum number of left-bounding area for a given arc?

E. What is the maximum number of nodes for a given area?

F. What is the minimum number of nodes for a given area?

* **Q 2.1 :** Answer questions A-F for Fig 2.15 (pp. 65) for the planar configuration of nodes, directed arcs and areas. Each answer is a non-negative whole number.

Answer:

A. The maximum number is five.

B. The minimum number is two.

C. The maximum number is one.

D. The minimum number is one.

E. The maximum number is five.

F. The minimum number is two.

* **Q 2.2 :** Answer questions A-F in context of the EER diagram in Fig 2.16 (pp. 65), where answers are restricted to 0, 1 or many. Are there any surprises (e.g. ambiguities, violation of your knowledge of geometry)? Explain the surprises in terms of the purpose of conceptual data model such as EER. Suggest ways to improve EER diagram to address the surprises. Limit your narrative to 100 words.

Answer:

* + 1. Many
    2. 1
    3. 1
    4. 1
    5. Many
    6. Many

We found that there are relations between area and directed arc, node and directed arc. However, there is no directed relation between area and node. We can add a many to many relation “contain” between entities area and node.