Visualization
– Surface Visualization (Questions)

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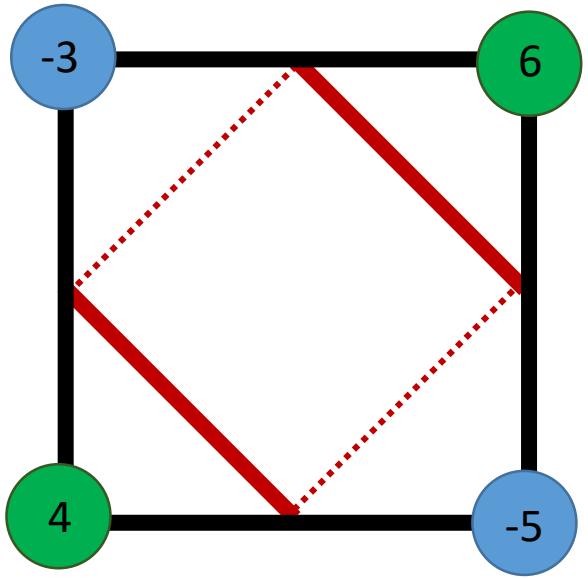
Possible Questions

- Handle the ambiguities in the cell (iso=0). Reason your decision.



Possible Questions

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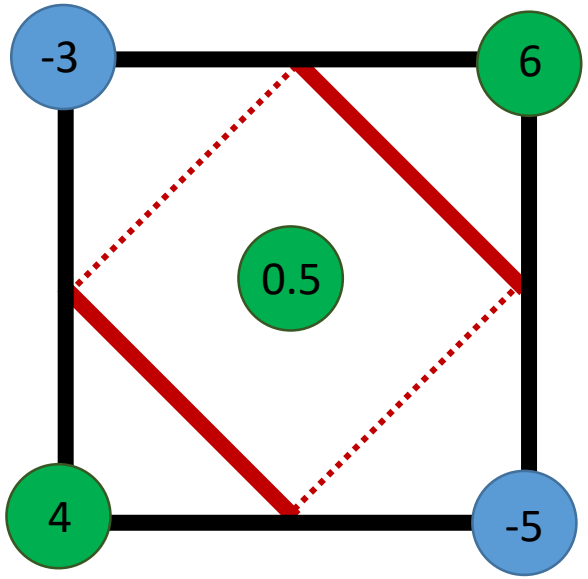
- Calculate the isovalue in the middle by averaging all corners:

$$\frac{-3+6+4-5}{4} = \frac{1}{2}$$



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- Extra objects -> connected component analysis
- Staircase artifacts -> mesh smoothing
- Insufficient sampling at regions of high curvature -> adaptive Marching Cubes

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- Not volume-preserving: LowPass filter/ Laplace+HC
  - Alternate between inward and outward moving of vertices
- Features vanish
  - Detect features, adapt smoothing factor

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- Combinatorial

$$w_{ij} = \begin{cases} 1, & \text{if } (i,j) \in E \\ 0, & \text{otherwise} \end{cases}$$

- Uniform/Laplace

$$w_{ij} = \begin{cases} \frac{1}{N(i)}, & \text{if } (i,j) \in E \\ 0, & \text{otherwise} \end{cases}$$

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- No or less smoothing near important structures which are based on the distance to another structure
- Tumor resection