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Exercise 1 (2 points). One of the problems that the paper “Visibility Equalizer” faces consists in rendering a large set of molecules in realtime. Explain why this is difficult to achieve at a high framerate, and how it is addressed.

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Exercise 2 (2 points). We found a dead elephant and want to analyze if its death was due to hunting, or natural. We have scanned the body, which yielded a dataset of $20000 \times 6000 \times 4000$ voxels. Since we are looking for important damages, we are mostly interested in analyzing the bones, and thus, we have defined a transfer function that renders the bones opaque, the skin semi-transparent, and the rest is transparent. We are having issues to render the model in realtime, due to the high cost of ray traversal. What acceleration technique could greatly help solving this problem? Justify the answer.

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Exercise 3 (2 points). What technique can be used to illustrate the changes in the white matter, and how is it calculated?

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Exercise 4 (2 points). In this web: <https://georgekatona.com/vivicitta/index.html>, you can see a visualization of a marathon. From the point of view of perception, discuss the advantages and shortcomings of the selection of color for the runners.

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Exercise 5 (2 points). We want to analyze the performance of the 50 students of a degree course for the last 10 years. We want to know how many of them are getting grades in the range A, B, C, D, and E. In order to do so, somebody has designed a set of 10 pie charts that encode the number of students in each grade for each course. As a student of SV, evaluate the selection of the visualization technique, justify your answer.