

Exercise 1 (2 points). We have a volumetric model of $5000 \times 5000 \times 500$ voxels where we can see, regularly spaced, 16 different mice that have been captured using microCT and grouped into the same volumetric model. Each mouse has a maximum scanned size of 500^3 . We want to obtain high quality images of such a dataset, but regular DVR is very expensive. What techniques would you use to accelerate rendering?

Exercise 2 (2 points). We want to represent the route of a marathon in the Rocky Mountains (the Breck Crest, concretely) and we want to see the path as well as the altitude of the path at every moment. One student proposes to use a 2D map where the route is painted as a line with a color encoding the height. Another student proposes the use of a 3D representation of the mountains and the route painted over it. Discuss, from a visualization point of view, the advantages and shortcomings of both proposals.

Exercise 3 (2 points). Why is important the visualization of tunnels in molecular visualization?

Exercise 4 (2 points). In order to compare the evolution of 5 runners of the New York marathon, our magazine wants us to show the information of 5 runners. We have the information of the pace at each point of the marathon (samples every 10 meters), and we want to compare it visually. What kind of view organization would you consider? Discuss the advantages and shortcomings.

Exercise 5 (2 points). What is DTI and what is it used for?