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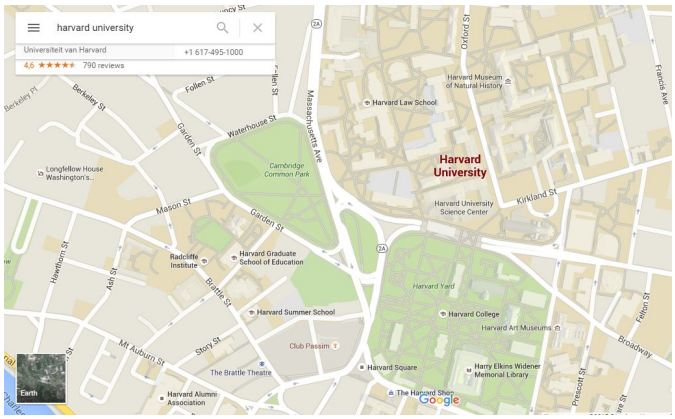
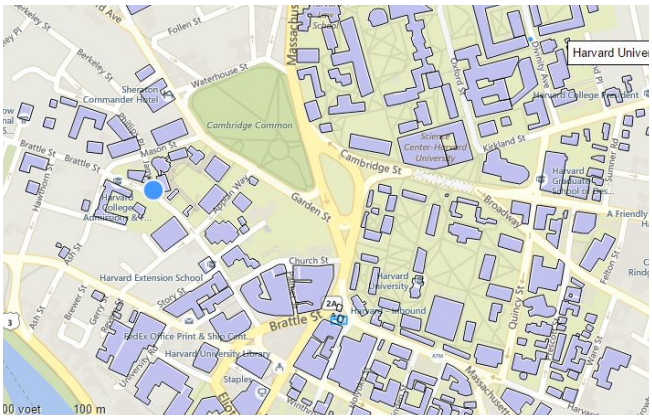
1 Patterns and colors are essential to maps. Compare a search for Harvard University on two interactive maps (e.g., Google Maps, Bing Maps, Yahoo! Maps, Apple Maps, map.harvard.edu). Answer the following questions, making references to concepts explained in Ware such as pattern recognition and properties of color. Please include screenshots of the examples you are comparing.





On the left <u>Google Maps</u> and on the right <u>Bing Maps</u>

a Which map promotes an easier visual search for buildings?

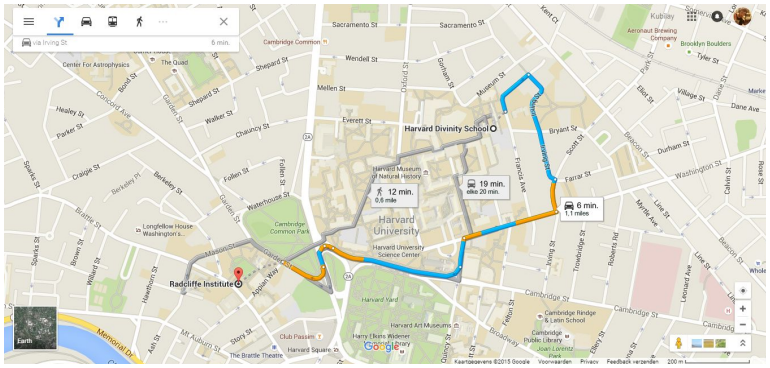
I'd have to say Bing maps and for several reasons.

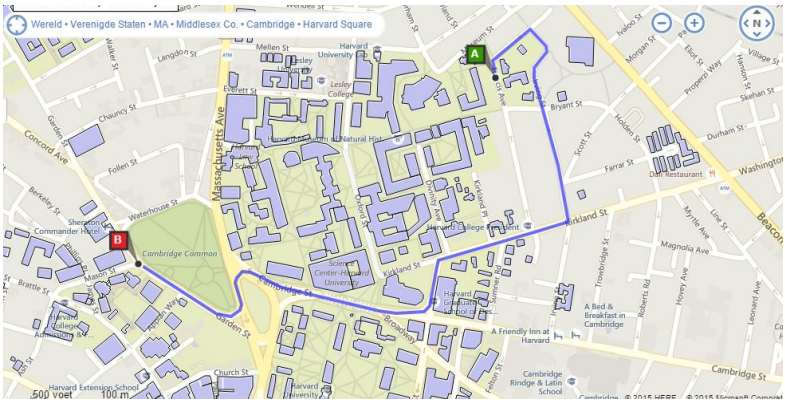
First of all the color: for google maps, when viewing the map the campus has a beige base color and the buildings are gray which almost the same color as the areas where no buildings are displayed at all. On the Bing map however, the campus also has a beige base color, but the buildings are are blue. The contrast on bing maps is stronger which makes it easier to spot buildings.

Scale: When using google maps, buildings get visible after a certain distance. Compared to bing maps, one has to zoom in much more to view buildings in google maps.

Lining: When hovering over a building in bing maps, the buildings get a line around them as shown in the image. This makes it easier to see the contour of the building and it helps distinguish the buildings from its surroundings.

b Which map more effectively visualizes routes from a random point A to point B?





On the left <u>Google Maps</u> and on the right <u>Bing Maps</u>

Bing Maps visualizes routes from a random point better than Google maps. But this has more to do with overkill than anything. The route Google maps shows us contains a bit too much information which makes it a bit distracting. The blue changing to orange (showing us traffic, orange meaning slower traffic) and the gray alternative routes make the visualization a bit too busy. On the other hand, Bing Maps shows us a very clean and sleek looking route and it also highlights A(start) and B(finish) clearer than Google Maps does.

c Which map is an overall better visualization, and why?

To this question there are two aspects for me: technical and visual.

On the technical side I think Google Maps most definitely wins, because of the fast loading time and moving the map around is smooth, unlike Bing Maps which has a longer loading time and is at times, a bit clunky when moving around.

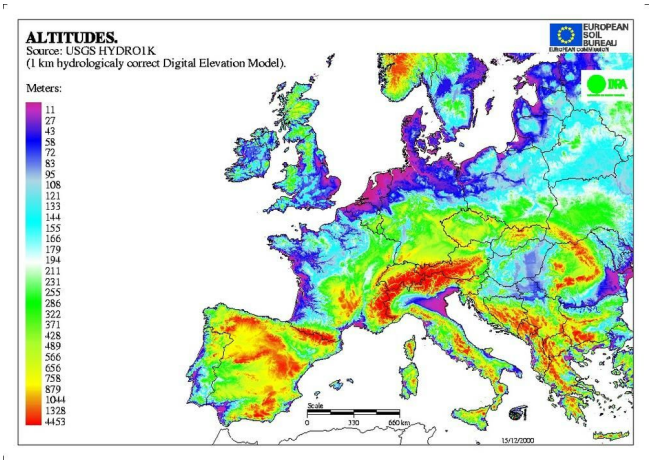
My second technical point is information: Google maps show us more than Bing Maps does. It shows us alternative routes, different means of transportation, and how each route differs in ETA.

On the visual side: The things I mentioned before and what I'd like to add is: most of the time I'm not interested in the buildings that are present, so hiding the buildings until I zoom in isn't a bad thing at all. When only looking at roads Google Maps has a clearer way of representing it: First the contrast between road and it's surroundings, but also the fact that it hides buildings. Bing Maps is a better map for viewing buildings, sure, but it makes it confusing when viewing the map as a whole.

This is why I think Google Maps is the overall better visualization.

2 Find a rainbow color map visualization on the web. Please include a screenshot and link of the visualization.

a Briefly summarize its intended objective and audience. Does it fail to successfully convey information? If so, why? Is there a good reason for this specific visualization to use a rainbow color scheme?

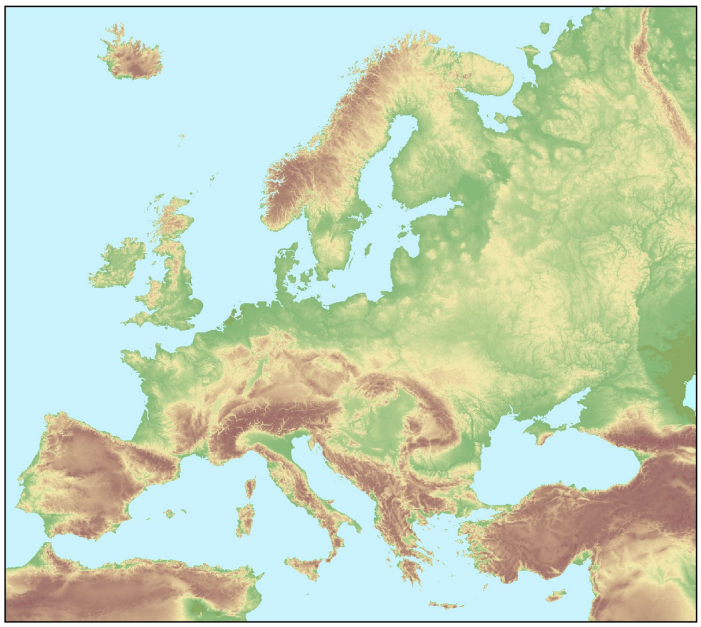


This visualization shows the altitudes of land in meters. This could be for people studying geography or people researching altitude changes over thousands of years. In my opinion the visualization fails to succesfully convey the information.

All right, with the legend on the left side, it isn't too bad, but the colors aren't intuitive at all. The progression of Red → orange → yellow is logical in my head, but why does yellow transition to green? and green to white? and white to blue again? and now instead of the blue color getting lighter (just how red got lighter by changing onto orange and then yellow) getting darker instead?

I get that the people who made this visualization want to show the transition from high to low as precisely as possible, but the amount of colors and the positioning of the colors is confusing.

b Propose an alternative color scheme to replace the rainbow color map



What I prefer is the color scheme we're used to seeing in our (my) high school geography books. Just like the image on the left. Although there are only three basic colors (brown, beige and green) these colors look way more intuitive. They're intuitive because of what colors they are, Brown reminds us of rocks, mountaints, while green reminds us of green fields and valleys. Also the fact that this visualization only has *three* base colors makes it a lot easier to understand.