

1a. I think it's because the decision tree is basically a flowchart where you can easily see where the computer gets the answer, rather than it just spitting out an answer, so it's very transparent in the logic. It also classifies with categorical data, so it could be very popular since not all dataframes are just numbers.

1b. Definitely decision trees because 1. It's categorical data and 2. Because you don't have to worry about dependencies because most of the data can have some cause/effect relationships happening.

1c. I looked into the CART algorithm. The main thing that sets CART apart from the ID3 algorithm we've been using is the way it measures "error". While ID3 uses Information Gain based on Entropy, CART uses something called Gini Impurity. Basically it looks at how "pure" a node is by calculating the probability of a random element being mislabeled. Another huge difference is that CART is strictly binary; it only ever splits a node into two branches, whereas ID3 can create multiple branches for one feature.