Due: Tuesday 04/09/2024 @ 11:59pm EST

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The game will start off with your partner going to collect gold. Once your partner is adjacent to the gold, all units in the horde will rush them. Humans, who bear no ill will to you or your partner, will take advantage of the confusion and harmlessly pass your partner (and you) by while seeking to escape from the horde. The zombies however will seek to kill your partner (and you when it is your turn). Your partner has a lot of health but isn't very smart (or capable with their weapon), so will eventually succumb to the horde.

You have been paying attention this whole time, and will be supplied at the moment of your partner's death with a record of which units attacked them (and therefore are known to be zombies), and which units did not (and therefore are known to be humans). Each unit has a feature description which you cannot see on the game rendering. So, to make it easier to view, human units in the horde have a "h" character, and zombie units have a "z" character. The "S" character is the zombie spawning unit, and there is only one of them in the game.

Your agent however does not get to view the characters of the units in order to make its decisions. Instead, your agent is supplied with four features: 2 continuous and 2 discrete. The distribution of the features is controlled by how difficult the game is: humans and zombies look very different in the EASY game mode and look much more similar in the HARD game mode. You are to implement and train a decision tree model to classify whether or not a unit (represented with its feature vector) is a human or not. Any unit your decision tree classifies as a zombie (i.e. class 1) will be attacked by your agent. So be careful! Any time you waste shooting humans is time that you aren't shooting zombies!

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