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Homework 3

Design Rationale

This assignment required some forethought in order to endure all the classes would be interacting correctly (and creating a class diagram was certainly helpful). Following the test class, each Horse was required to have a name, number, maximum speed, and a strategy type. In addition to these variables, I also added in a *currentMile* variable that was useful in tracking the horses current distance and, ultimately, which horse crossed the finish line first. I implemented *Strategy* as an interface, because each derivative class would be rewriting its method differently. Within the *Race* class itself, in order to run the race, I called the *run* method for each horse in a loop, calculated each of their current distances, and checked if any horse had crossed the finish line. In the event that two horses had simultaneously crossed the line during one iteration of the loop, I called another function *announceWinner* that checked which of the horses had a greater *currentMile*, and announced the winner based on that value.