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APCS2 pd8
HW04 -- So Easy, Even a Caveturtle Can Do It
2018-02-05

Steps to sort cards:

- 1) If you are the master turtle (the very first turtle with all the cards), split the deck approximately in half, and give each half to two different turtles with no cards. Tell them to sort the decks, and communicate it back once completed.
- 2) If you are a sub turtle (any turtle that was given a deck of cards), if the deck has at least 3 cards, split the deck in approximated half, and give each half to two other turtles. Tell them to sort the two decks, and return once completed.
- 3) Repeat step 2, until there is no more distribution of cards. All turtles are either a: master turtle, sub turtle, or end turtle(turtle with a deck of 1 or 2 cards).
- 4) All turtles other than the master turtle were told to sort the decks, and return it to whoever gave the order. All non-master turtles must now sort their decks(using Ahnaf's Algo for sorting), and return it to their callers.
- 5) All callers should repeat step 4, until the master turtle has all cards.

Ahnaf's Algo:

- 1) You have two decks of cards, approximately the same size. First, compare the top two cards from both decks, if you wish to sort in descending order, take the largest of the two top cards, and set it aside. This will be the third pile. Do the vice versa if you wish to order by ascending order.
- 2) Look at the next top card from the two decks: take the larger/smaller number and put it on top of the third pile.
- 3) Repeat step 2 until third pile contains all cards.

NOTE:

End turtles should have either 1, or 2 cards. If an end turtle has one card, it is already sorted, so return it to their caller. If an end turtle has two cards, return it to the caller, who will sort the three cards using Ahnaf's Algo.