

Tim Marder

APCS2 pd02

HW#04 -- So Easy, Even a Caveturtle Can Do It

2018-02-06

Step-by-step procedure:

1. For organizational purposes, have half of the thinkers on either side of you preferably in a sitting standing in a line.
2. Split the mixed deck in half and hand each half to your two neighboring thinkers. Tell them "Take one, past the rest of the deck down, when all cards are given out, on the way back each thinker insert their card into the deck into the correct location, we are going in **descending** order. Bring back reversely sorted decks".
3. The two neighboring thinkers will start by keeping one card and passing down the rest of the cards. This process continues until the last thinker on each side of you receives a card (assuming that there is 1 card per thinker excluding you).
4. Last thinker on each side starts passing his/her card to the person he/she got it from.
5. Thinker who now receives the deck back uses insertion sort to insert their card into the correct position (remember that this is in descending order). After inserting card, pass the deck to the person whom he/she got the deck from in the beginning. Process continues until the decks finally reach your two neighboring thinkers.
6. You now have 2 "reversely" (since they are in descending order) sorted decks and you look at the top 2 cards. This was done because now the highest cards are on top and will be compared to be put onto the bottom of the final deck.
7. Compare the 2 cards and whichever card is the highest, place it into a third pile (the new deck). Continue comparing the top cards and placing the higher one onto the third pile until there is a single completely sorted deck in ascending order.

Although it is very possible to change up the way the formation of the thinkers and have multiple splits of the deck during the passing out of the cards, but this method avoids confusion and makes it easier for each thinker since they only have to insert one card instead of two, four, etc. depending on the amount of splits done before them.