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| **SI SESSION PLAN** | |  |  |  |  | | --- | --- | --- | --- | | SI Leader: | Alex Iacob | Session Date: | 3/2/23 | | Week #: | 7 | Session Letter: | B | | Course & Section: | CSCI 141 Section 2 | Course Instructor: | Polak | | Planning Date: | 3/2/23 | Planning Time: | 2:45 – 3:00 | |

**Beginning reminders:**

Is the room set up in a way conducive to collaborative learning?

Is the agenda posted to the board for participants to see?

Do you have your attendance sheet up to record your attendance?

Do you have any other documents/resources up and ready to go for your session?

If you are all set with the reminders, then go have fun and good luck!

**Is there a study strategy you want to focus on? (If so, what is it? Otherwise, leave blank.)**

**Main concepts student should feel more comfortable with:**

Insertion sort

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity\*** | **Process to use** | **Time** | **After Session Thoughts** |
| **Opener:**  Chess puzzle | Black to play, Rook g1 check, King b2, Queen g3, Pawn f6, Queen captures Rook h2 | 5-10 | My Thursday students seem to be chess nerds too.   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | ☹ | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | ☺ | |  |  |  |  |  |  |  |  |  |  | |
| **More insertion sort fun** | Using playing cards, how would Insertion Sort sort the list. Do this a few times.  Best – O(N) (This happens when the list is already sorted)  Average – O(N^2) (An average case)  Worse– O(N^2) (The list is in reverse order)  Also try to write some pseudocode for the algorithm, should look something like  insertionSort(lst):  for i in range (len(lst) - 1):  j = i  while j > 0 and lst [j-1] > lst [j]  swap(lst [j], A lst j-1])  j = j - 1 | 20-30 | Insertion sort is a speed demon. It is actually so fast, that we use it to compare other algorithms to it to showcase how fast the other ones are.   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | ☹ | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | ☺ | |  |  |  |  |  |  |  |  |  |  | |
| **Closer: Sneak peek at Merge and Quick sort** | Discuss “divide and conquer” algorithms.  Merge sort takes a list, chops it down into smaller lists until they are all one element in length, then merges them all back together “magically” sorted.  [8, 1, 5, 9, 2, 4, 3, 10, 6, 7]  [8, 1, 5, 9, 2] [4, 3, 10, 6, 7]  [8, 1, 5] [ 9, 2] [4, 3, 10] [6, 7]  [8, 1] [5] [9] [2] [4, 3] [10] [6] [7]  [8] [1] [5] [9] [2] [4] [3] [10] [6] [7]  [1, 5, 8] [2, 9] [3, 4, 10] [6, 7]  [1, 2, 5, 8, 9] [3, 4, 6, 7, 10]  [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]  Quicksort takes a list, and you get to chose an arbitrary pivot. Whatever that pivot is, you make 3 lists, one to hold values smaller than the pivot, values greater than the pivot, and values equal to the pivot. This happens recursively until all of the lists are of size 1, then they get concatenated together at the end in order. (I like choosing the last index just cause you can get it as list[-1] )  [8, 1, 5, 9, 2, 4, 3, 10, 6, 7]  [1, 5, 2, 4, 3, 6] [7] [8, 9, 10]  [1, 5, 2, 4, 3] [6] [7] [8, 9] [10]  [1, 5, 2, 4, 3] [6] [7] [8, 9] [10]  [1, 2] [3] [5, 4] [6] [7] [8] [9] [10]  [1] [2] [3] [4] [5] [6] [7] [8] [9] [10]  [1, 2, 3, 4, 5, 6, 7, 8, 9, 10] | 20-30 | They liked this more   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | ☹ | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | ☺ | |  |  |  |  |  |  |  |  |  |  | |

*\*See the* [*Activity Database*](https://docs.google.com/spreadsheets/d/1Oc6uAX2Uaq2Ym6M1FQjivRI_ryA_T9k1AcEKi__3Ml4/edit?usp=sharing) *and* [*SI Share*](https://drive.google.com/drive/folders/1WKkkRXpRW6_OVdc4eFVgAkDRt7y8E_VT?usp=sharing) *for ideas.*

**Ending reminders:**

Did you mark down attendance on your attendance sheet?

Did you remind everyone of the next session and any upcoming tests or quizzes or due dates?

Did you fill in the after session thoughts?

**Optional Notes and Comments:**

That professor really had the audacity to enter my room 5 mins before and tell me that I can go to the room next door if my content is that important. I’m going to start locking the door and only opening it 3:59

A picture containing text, big cat, mammal, lion

Description automatically generated

**Bi-Weekly Question:** How do you balance your responsibilities as an SI Leader and as a student?

Being as this is my 3rd semester, I’m pretty used to it. I spend most of my time in CS1 lecture paying attention to Polak’s examples to refer to them later, and potentially planning sessions for later(and catching up on late paperwork 😐). During lab sessions I mainly get to talk to the students more and create better connections with them.