Midterm FSG

Wed. 2-3pm MN2266

Selection Sort

What is Selection sort?

Find (i.e. select) the smallest member of list and make it the first element. Then, find the next smallest and make it the second element, etc.

Given a list perform selection sort?

```
lst = [18, 7, 6, 20]
```

Insertion Sort

What is Insertion sort?

Sort the list by inserting elements repeatedly into the front of the list. <u>After **k** steps, the first **k** elements of the list will be sorted</u>.

Given a list perform Insertion sort?

```
lst = [18, 7, 6, 20]
```

Bubble Sort

What is Bubble sort?

Pass through the list, <u>swapping elements so that the larger element moves forward</u> when swapping (for ascending order). In other words, larger elements bubble to the top. Make repeated passes until the list is sorted.

Given a list perform Bubble sort?

```
lst = [18, 7, 6, 20]
```

When would Insertion Sort generally outperform Selection Sort?

A. When the list is randomly ordered

B. When the list is already sorted or nearly sorted

C. When the list contains negative integers

D. When the list length is very large