

Lecture 21 Exercises

CS 51P –Fall 2023

```
alist = [46, 10, -10, -100, 47, 0, 4, 23, -3]
```

Apply selection sort to the list alist.

```
[-100, 10, -10, 46, 47, 0, 4, 23, -3]  
[-100, -10, 10, 46, 47, 0, 4, 23, -3]  
[-100, -10, -3, 46, 47, 0, 4, 23, 10]  
[-100, -10, -3, 0, 47, 46, 4, 23, 10]  
[-100, -10, -3, 0, 4, 46, 47, 23, 10]  
[-100, -10, -3, 0, 4, 10, 47, 23, 46]  
[-100, -10, -3, 0, 4, 10, 23, 47, 46]  
[-100, -10, -3, 0, 4, 10, 23, 46, 47]  
[-100, -10, -3, 0, 4, 10, 23, 46, 47]
```

Apply insertion sort to the list alist.

```
[10, 46, -10, -100, 47, 0, 4, 23, -3]  
[-10, 10, 46, -100, 47, 0, 4, 23, -3]  
[-100, -10, 10, 46, 47, 0, 4, 23, -3]  
[-100, -10, 10, 46, 47, 0, 4, 23, -3]  
[-100, -10, 0, 10, 46, 47, 4, 23, -3]  
[-100, -10, 0, 4, 10, 46, 47, 23, -3]  
[-100, -10, 0, 4, 10, 23, 46, 47, -3]  
[-100, -10, -3, 0, 4, 10, 23, 46, 47]
```

Apply merge sort to the list alist.

[10, 46, -10, -100, 47, 0, 4, 23, -3]
[10, 46, -100, -10, 47, 0, 4, 23, -3]
[-100, -10, 10, 46, 47, 0, 4, 23, -3]
[-100, -10, 10, 46, 0, 47, 4, 23, -3]
[-100, -10, 10, 46, 0, 47, 4, -3, 23]
[-100, -10, 10, 46, 0, 47, -3, 4, 23]
[-100, -10, 10, 46, -3, 0, 4, 23, 47]
[-100, -10, -3, 0, 4, 10, 23, 46, 47]