1 Selection Sort

1.1 Pseudocode

Algorithm 1 Selection Sort

```
1: for i = n down to 2 do
2:     k ← 1
3:     for j = 2 to i do
4:         if A[j] > A[k] then
5:             k ← j
6:         end if
7:     end for
8:     A[k] ↔ A[i]
9: end for
```

1.2 Analysis of Comparisons

The number of comparisons is constant regardless of the state of the array.

$$\sum_{i=2}^{n}\sum_{j=2}^{i} 1 = \sum_{i=2}^{n}(i-1) = \frac{(n-1)}{n}$$

1.3 Analysis of Exchanges

Selection sort only performs one exchange per each iteration of the outermost loop, so there is a total of $n-1$ exchanges.