

Selection sort

Friday, 24 March 2023 7:55 am

sorted unsorted
↓
empl 7 4 10 8 3 1 |
 ↖ swap ↗

$n = 6$

min = ~~7~~ 3

$n = 6$

$5 + 4 + 3 + 2 + 1$

Pass 1 | 4 10 8 3 7 $i = 0$

min = 4

Pass 2 | 3 | 10 8 4 7 $i = 1$

Pass 3 | 3 4 | 8 10 7 $i = 2$

Pass 4 | 3 4 7 | 10 8 $i = 3$

Pass 5 | 3 4 7 8 | 10 $i = 4$

n

$1 + 2 + \dots + (n-1)$

$= \frac{(n-1)n}{2} = \underline{\underline{O(n^2)}}$

```

for (i = 0; i < n-1; i++)
{
    min = i
    for (j = i+1; j < n; j++)
    {
        if (a[j] < a[min])
            min = j
    }
    if (min != i)
        swap(a[i], a[min])
}

```

Best case

1 2 3 4 5
