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Selection Sort

```
void selection sort (int A[], int n)
int i, j, mint, temp;
for (i=0; i<n-i; i++)                    — n
    min = i;                             —— n
for (j= i +1; j<n, j++)                  — nxn
if (A[j] < A[min])                       — nxn
                                         —— n
    min = j;
end if
end for
end for
if (min != i)                            —— n
    temp = A[i]                          —— n
    A[i] = A[min]                        —— n
    A[min] = temp                        —— n
end if
end for
end selection sort.
```

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Analysis

Best case:

For sorted Array, both loop will check for each element. for best case, 2nd loop wont executed minimum one time but loop will chek for each element. Always n number of element will catch n times.

Worst case:

The complexity function of an Algorithm is $f(n) = 3n^2+7$

∴ The time copkaity of worst case is: $O(n^2)$

Average case:

All possible values one average time. Both loop will executed for n times.

Averge the $= 1+2+3+ \cdots +(n-2)+(n-1)+n$

$= \frac{n(n+1)}{2} = \frac{n^2+n}{2}$

∴ The time complexity of averge case the $= O(n^2)$