

Select Sort

- Find the lowest and swap
- Run time Complexity : $O(n^2)$

Example

Sort the given array

11	4	17	18	2	22	1	8
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Find the minimum

11	4	17	18	2	22	1	8
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Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Step 4) Continue Step 2 & 3 for next pivot

Selection Sort

11	4	17	18	2	22	1	8
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Step 1) Take the Pivot

Compare

11	4	17	18	2	22	1	8
----	---	----	----	---	----	---	---

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Swap

1	4	17	18	2	22	11	8
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Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Continue

1	4	17	18	2	22	11	8
---	---	----	----	---	----	----	---

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Step 4) Continue Step 2 & 3 for next pivot

Next

1	4	17	18	2	22	11	8
---	---	----	----	---	----	----	---

Step 1) Take the Next Pivot

Lowest

1	4	17	18	2	22	11	8
---	---	----	----	---	----	----	---

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Swap

1	4	17	18	2	22	11	8
---	---	----	----	---	----	----	---

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Continue

1	2	17	18	4	22	11	8
---	---	----	----	---	----	----	---

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Step 4) Continue Step 2 & 3 for next pivot

Next

1	2	17	18	4	22	11	8
---	---	----	----	---	----	----	---

Step 1) Take the Next Pivot

Lowest

1	2	17	18	4	22	11	8
---	---	----	----	---	----	----	---

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Lowest

1	2	17	18	4	22	11	8
---	---	----	----	---	----	----	---

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Swap

1	2	4	18	17	22	11	8
---	---	---	----	----	----	----	---

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Continue

1	2	4	18	17	22	11	8
---	---	---	----	----	----	----	---

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Step 4) Continue Step 2 & 3 for next pivot

Next

1	2	4	18	17	22	11	8
---	---	---	----	----	----	----	---

Step 1) Take the Pivot

Lowest

1	2	4	18	17	22	11	8
---	---	---	----	----	----	----	---

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Swap

1	2	4	8	17	22	11	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Continue

1	2	4	8	17	22	11	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Step 4) Continue Step 2 & 3 for next pivot

Next

1	2	4	8	17	22	11	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Lowest

1	2	4	8	17	22	11	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Swap

1	2	4	8	11	22	17	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Continue

1	2	4	8	11	22	17	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Step 4) Continue Step 2 & 3 for next pivot

Next

1	2	4	8	11	22	17	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Step 4) Continue Step 2 & 3 for next pivot

Lowest

1	2	4	8	11	22	17	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Step 4) Continue Step 2 & 3 for next pivot

Swap

1	2	4	8	11	17	22	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Step 4) Continue Step 2 & 3 for next pivot

Continue

1	2	4	8	11	17	22	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Step 4) Continue Step 2 & 3 for next pivot

Next

1	2	4	8	11	17	22	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Lowest

1	2	4	8	11	17	22	18
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Swap

1	2	4	8	11	17	18	22
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Continue

1	2	4	8	11	17	18	22
---	---	---	---	----	----	----	----

Step 1) Take the Pivot

Step 2) Find the lowest in the array

Step 3) Swap with the lowest

Step 4) Continue Step 2 & 3 for next pivot

Next

1	2	4	8	11	17	18	22
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Done !!

Algorithm

Step 1 – Set MIN to location 0

Step 2 – Search the minimum element in the list

Step 3 – Swap with value at location MIN

Step 4 – Increment MIN to point to next element

Step 5 – Repeat until list is sorted