- Aim: Warc a menu driven program to sort an Away
 Using Selection sort.
- Objective: To implement sorting algorithm having time complexity at $O(n^2)$ in all cases.

Aim: Write a menu driven program to sort an away
Using Selection Sort.
Objective: To implement sorting Algorithm having time complexity at O(n2) in all cases.
Theory: Selection sort is a Straight forward & intutive Algorithm that operates by dividing the input list into two parts is a sorted & a unsorted section. The Algorithm iteratively selects the smalles elements from unsorted portion & swaps it with the first element of section. This process continues until the entire list is sorted. The key is to gradually build up a sorted Sequence by repeateadly identifying the smallest element from the unsorted part & plaining it at the beginning of the sorted portion.
Selection sort is an in-place sorting algorithm, meaning it sorts the elements within the existing data structure without requiring addition memory.

	
Program	
J	#Milude <stdio.h></stdio.h>
- Marie	void SelectionSort (int arr [], int n) ?
	inti, minIndex, temp;

, , , , , , , , , , , , , , , , , , , ,	for (i=0; i <n-±; i++){<="" td=""></n-±;>
*	minIndex = i:
	for (j=i+1; j <n; j++)="" td="" {<=""></n;>
* * * * * * * * * * * * * * * * * * * *	if [am[j] < am [minIndex]) {
	min Index = j;
A A A	
	temp = arr[i];
	arr[i] = arr [min Index];
4.	am [minIndex] = temp;
-X.	
÷ ,	
	ABICE CEHINE
1 70	Void print Arway (int arr[], int size) { for [inf i=0; issize; itt)
	for linfi=0: issize: itt)
3. 50	pm+ ("-1.d" am [i]);
APPROXIMATION OF R	
	prm+f ("In");
	}

	Vold
	int main ()
	int n:
	printf ("Enter the number of elements In");
	printf ("Enter the number of elements In"); scanf ("1.d" &n);
Trees, and the pro-	
3- s	int arr [n];
4 . *	prof ("Original Array is ! In').
	print ("Origina) Auray is : In"); print Auray (aur, n);
)	
**	selection Sort (am, n);
	SCIECITO CONTRACTOR OF THE CON
	month ("Soxted assess in . In").
	printf ("Sorted away is: In"); print Away (aver n);
	philinolay (act in)
	netum 10 mg 10 mg
	Metum 0
V. 1	
. 12 "	
7 Day - Y	The state of the s
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Output: F	inter the number of elements: 5
E	nter the elements:
E	lement 1:50
E	lement 2: 40
	ement 8: 30
	lement 4:20
	lement 5: 10
0	niginal Array: 50 40 30 20 10
Se	riginal Array: 50 40 30 20 10
Algorithmil	Thout
-1	Outer loop
	terate through the array from the first
- 1	ement to second element till the last elements
	lAssume Minimum
	ssume the werent index (i) the index of
m	nimum element.
Lvl	Inner Loops
12	tart an inner loops from the next element
to	last element. Compare the element at index
1.1	with element at the assumed minimum
in	dex
91.	Swap
	ter the inner loop if the assumed minimum
J. Fr. Gard	

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Conclusion: Program of Selection. Sort is implemented
& executed successfully using C. Programming

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	is minimum from the warent index, also sugp
	the plements at the two indices.
	vil Repeat
<u>, </u>	Repeat steps 3-5 for each iteration of the outer
	loop.
ý .	viiloutput
Ÿ	The array is Sorted when outer loop completes.
Conclusion:	Program cot selection sort is implemented
	& exemted Suressfully using C Programming
	Longauge
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