## Smaller no on left in C++ #include <iostream> #include <vector> #include <stack> using namespace std; vector<int> leftSmaller(int n, int a[]) { vector<int> ans(n); stack<int> st; for (int i = n - 1; $i \ge 0$ ; i - 1) { while (!st.empty() && a[i] < a[st.top()]) { int idx = st.top();ans[idx] = a[i];st.pop(); st.push(i); } while (!st.empty()) { int idx = st.top();ans[idx] = -1;st.pop(); } return ans; int main() { int arr[] = $\{4, 8, 5, 2, 25\}$ ; int n = sizeof(arr) / sizeof(arr[0]); vector<int> result = leftSmaller(n, arr); cout << "Resulting list:" << endl;</pre> for (int i : result) {

```
Input:
arr = \{4, 8, 5, 2, 25\}
```

## Dry Run Table:

i	arr[i]	Stack (index)	Action	ans (after step)
4	25		Stack empty, push 4	[?, ?, ?, ?, ?]
3	2	[4]	$2 < 25 \rightarrow \text{ans}[4] = 2$ , pop 4; push 3	[?, ?, ?, ?, 2]
2	5	[3]	$5 > 2 \rightarrow \text{push } 2$	[?, ?, ?, ?, 2]
1	8	[3, 2]	$8 > 5 \rightarrow \text{push } 1$	[?, ?, ?, ?, 2]
0	4	[3, 2, 1]	$4 < 8 \rightarrow ans[1] = 4,$ pop 1; $4 < 5 \rightarrow ans[2]$ = 4, pop 2; push 0	[?, 4, 4, ? 2]
		[3, 0]	Final elements $\rightarrow$ set ans[3] = -1, ans[0] = -1	[-1, 4, 4, -1, 2]

## **∜** Final Output:

-1 4 4 -1 2

✓ Explanation (Index-wise):

Index	arr[i]	Left Smaller Element
0	4	-1 (nothing to the left)
1	8	4
2	5	4
3	2	-1
4	25	2

Resulting list: -1 4 4 -1 2

cout << i << " ";

cout << endl;

return 0;