--------Bubble Sort Program---------

#include <stdio.h>

void swap(int\* arr, int i, int j) { int temp = arr[i]; arr[i] = arr[j]; arr[j] = temp;

}

void bubbleSort(int arr[], int n) {

for (int i = 0; i < n - 1; i++) {

for (int j = 0; j < n - i - 1; j++) { if (arr[j] > arr[j + 1]) swap(arr, j, j + 1);

}

}

}

int main() { int arr[] = { 6, 0, 3, 5 }; int n = sizeof(arr) / sizeof(arr[0]);

// Calling bubble sort on array arr bubbleSort(arr, n);

for (int i = 0; i < n; i++) printf("%d ", arr[i]);

printf("\n------\n ARCHANA SINGH\n 2300320130062"); return 0;}

# Output

0 3 5 6

------

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=== Code Execution Successful ===

# ---------Selection Sort Program---------

#include <stdio.h>

void selectionSort(int arr[], int N) {

for (int i = 0; i < N - 1; i++) {

int min\_idx = i; for (int j = i + 1; j < N; j++) { if (arr[j] < arr[min\_idx]) { min\_idx = j;

}

}

int temp = arr[min\_idx]; arr[min\_idx] = arr[i]; arr[i] = temp;

}

}

int main() { int arr[] = {64, 25, 12, 22, 11}; int N = sizeof(arr) / sizeof(arr[0]); printf("Unsorted array: \n");

for (int i = 0; i < N; i++) { printf("%d ", arr[i]);

}

printf("\n");

// selection sort selectionSort(arr, N);

printf("Sorted array: \n"); for (int i = 0; i < N; i++) { printf("%d ", arr[i]);

}

printf("\n");

printf("\n------\n ARCHANA SINGH\n 2300320130062");

return 0;

}

# Output

Unsorted array:

64 25 12 22 11 Sorted array:

11 12 22 25 64

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=== Code Execution Successful ===

# ---------Insertion Sort Program-------

#include <math.h> #include <stdio.h> void insertionSort(int arr[], int N) { for (int i = 1; i < N; i++) { int key = arr[i]; int j = i - 1;

while (j >= 0 && arr[j] > key) { arr[j + 1] = arr[j];

j = j - 1;

}

arr[j + 1] = key;

}

}

int main() { int arr[] = { 12, 11, 13, 5, 6 }; int N = sizeof(arr) / sizeof(arr[0]); printf("Unsorted array: "); for (int i = 0; i < N; i++) { printf("%d ", arr[i]);

}

printf("\n");

// Calling insertion sort on array arr insertionSort(arr, N);

printf("Sorted array: "); for (int i = 0; i < N; i++) { printf("%d ", arr[i]);

}

printf("\n");

printf("\n----\n ARCHANA SINGH 2300320130062");

return 0;

}

Output Unsorted array: 12 11 13 5 6 Sorted array: 5 6 11 12 13

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# === Code Execution Successful ===