34 Insert Number

#include <stdio.h>

#define MAX\_SIZE 100 // Adjust this value as needed

void insertNumber(int arr[], int \*n, int num, int pos) {

// Error handling for invalid input

if (pos < 0 || pos > \*n) {

printf("Invalid position: Please enter a position between 0 and %d.\n", \*n);

return;

}

if (\*n == MAX\_SIZE) {

printf("Array is full.\n");

return;

}

// Efficiently shift elements to the right from the insertion position

for (int i = \*n - 1; i >= pos; i--) {

arr[i + 1] = arr[i];

}

// Insert the new element at the specified position

arr[pos] = num;

// Increment the array size

(\*n)++;

printf("Number %d inserted at index %d.\n", num, pos);

}

int main() {

int arr[MAX\_SIZE], n = 5; // Example array and initial size

int num, pos;

printf("Enter the elements of the array (5 elements):\n");

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

scanf("%d", &arr[i]);

}

printf("Current array: ");

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

printf("%d ", arr[i]);

}

printf("\n");

printf("Enter the number to insert: ");

scanf("%d", &num);

printf("Enter the position (index) to insert the number (0-%d): ", n - 1);

scanf("%d", &pos);

insertNumber(arr, &n, num, pos);

printf("Modified array: ");

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

printf("%d ", arr[i]);

}

printf("\n");

return 0;

}