1. Storing and printing elements

#include <stdio.h>

#define MAX\_SIZE 100

int main() {

int arr[MAX\_SIZE];

int n;

printf("Enter the number of elements (max %d): ", MAX\_SIZE);

scanf("%d", &n);

if (n <= 0 || n > MAX\_SIZE) {

printf("Invalid input\n");

return 0;

}

printf("Enter the elements:\n");

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

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

}

printf("Elements in the array: ");

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

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

}

printf("\n");

return 0;

}

2.Printing elements in reverse order

#include <stdio.h>

#define MAX\_SIZE 100

int main() {

int arr[MAX\_SIZE];

int n;

printf("Enter the number of elements: ");

scanf("%d", &n);

if (n <= 0 || n > MAX\_SIZE) {

printf("Invalid input\n");

return 0;

}

printf("Enter the elements:\n");

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

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

}

printf("Elements in reverse order: ");

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

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

}

printf("\n");

return 0;

}

3.Sum of elements

#include <stdio.h>

#define MAX\_SIZE 100

int main() {

int arr[MAX\_SIZE];

int n;

int sum = 0;

printf("Enter the number of elements: ");

scanf("%d", &n);

if (n <= 0 || n > MAX\_SIZE) {

printf("Invalid input\n");

return 0;

}

printf("Enter the elements:\n");

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

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

sum += arr[i]; // Adding each element to the sum as it's being read

}

printf("Sum of array elements: %d\n", sum);

return 0;

}

4.Total number of duplicate elements

#include <stdio.h>

#define MAX\_SIZE 100

int main() {

int arr[MAX\_SIZE];

int n;

int count = 0;

printf("Enter the number of elements: ");

scanf("%d", &n);

if (n <= 0 || n > MAX\_SIZE) {

printf("Invalid input\n");

return 0;

}

printf("Enter the elements:\n");

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

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

}

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

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

if (arr[i] == arr[j]) {

count++;

break; // Break to avoid counting the same duplicate multiple times

}

}

}

printf("Total number of duplicate elements: %d\n", count);

return 0;

}

5.Printing unique elements

#include <stdio.h>

#define MAX\_SIZE 100

int main() {

int arr[MAX\_SIZE];

int n;

int isDuplicate;

printf("Enter the number of elements: ");

scanf("%d", &n);

if (n <= 0 || n > MAX\_SIZE) {

printf("Invalid input\n");

return 0;

}

printf("Enter the elements:\n");

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

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

}

printf("Unique elements in the array: ");

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

isDuplicate = 0;

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

if (i != j && arr[i] == arr[j]) {

isDuplicate = 1;

break;

}

}

if (!isDuplicate) {

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

}

}

printf("\n");

return 0;

}

6.Inserting elements in array at specified postion

#include <stdio.h>

#define MAX\_SIZE 100

int main() {

int arr[MAX\_SIZE];

int n, element, position;

printf("Enter the number of elements: ");

scanf("%d", &n);

if (n <= 0 || n > MAX\_SIZE) {

printf("Invalid input\n");

return 0;

}

printf("Enter the elements:\n");

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

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

}

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

scanf("%d", &element);

printf("Enter the position to insert the element (0-indexed): ");

scanf("%d", &position);

if (position < 0 || position > n) {

printf("Invalid position\n");

return 0;

}

for (int i = n; i > position; i--) {

arr[i] = arr[i - 1];

}

arr[position] = element;

n++;

printf("Array after insertion:\n");

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

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

}

printf("\n");

return 0;

}

7.Delete the element at given index

#include <stdio.h>

#define MAX\_SIZE 100

int main() {

int arr[MAX\_SIZE];

int n, index;

printf("Enter the number of elements: ");

scanf("%d", &n);

if (n <= 0 || n > MAX\_SIZE) {

printf("Invalid input\n");

return 0;

}

printf("Enter the elements:\n");

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

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

}

printf("Enter the index of the element to delete (0-indexed): ");

scanf("%d", &index);

if (index < 0 || index >= n) {

printf("Invalid index\n");

return 0;

}

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

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

}

n--;

printf("Array after deletion:\n");

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

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

}

printf("\n");

return 0;

}