**Day 4**

1. Write a program to read and print elements of an array.

#include <stdio.h>

int main() {

int arr[100], n;

printf("Enter size of array: ");

scanf("%d", &n);

printf("Enter %d elements: ", n);

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

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

printf("Array elements: ");

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

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

return 0;

}

2. Write a program to find the sum of elements of an array.

#include <stdio.h>

int main() {

int arr[100], n, sum = 0;

printf("Enter size of array: ");

scanf("%d", &n);

printf("Enter %d elements: ", n);

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

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

sum += arr[i];

}

printf("Sum = %d", sum);

return 0;

}

3. Write a program to find the maximum and minimum element in an array.

#include <stdio.h>

int main() {

int arr[100], n, max, min;

printf("Enter size of array: ");

scanf("%d", &n);

printf("Enter elements: ");

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

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

max = min = arr[0];

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

if(arr[i] > max) max = arr[i];

if(arr[i] < min) min = arr[i];

}

printf("Max = %d, Min = %d", max, min);

return 0;

}

4. Write a program to reverse an array.

#include <stdio.h>

int main() {

int arr[100], n;

printf("Enter size: ");

scanf("%d", &n);

printf("Enter elements: ");

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

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

printf("Reversed array: ");

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

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

return 0;

}

5. Write a program to search for an element in an array (linear search).

#include <stdio.h>

int main() {

int arr[100], n, key, found = 0;

printf("Enter size and elements: ");

scanf("%d", &n);

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

printf("Enter element to search: ");

scanf("%d", &key);

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

if(arr[i] == key) {

printf("Found at index %d", i);

found = 1;

break;

}

}

if (!found) printf("Not found");

return 0;

}

6. Write a program to sort an array in ascending order.

#include <stdio.h>

int main() {

int arr[100], n, temp;

printf("Enter size: ");

scanf("%d", &n);

printf("Enter elements: ");

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]) {

temp = arr[i]; arr[i] = arr[j]; arr[j] = temp;

}

printf("Sorted array: ");

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

return 0;

}

7. Write a program to insert an element in an array.

#include <stdio.h>

int main() {

int arr[100], n, pos, val;

printf("Enter size: ");

scanf("%d", &n);

printf("Enter elements: ");

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

printf("Enter position and value to insert: ");

scanf("%d %d", &pos, &val);

for(int i = n; i >= pos; i--)

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

arr[pos-1] = val;

n++;

printf("Array after insertion: ");

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

return 0;

}

8. Write a program to delete an element from an array.

#include <stdio.h>

int main() {

int arr[100], n, pos;

printf("Enter size and elements: ");

scanf("%d", &n);

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

printf("Enter position to delete: ");

scanf("%d", &pos);

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

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

n--;

printf("Array after deletion: ");

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

return 0;

}

9. Write a program to find the frequency of elements in an array.

#include <stdio.h>

int main() {

int arr[100], freq[100] = {0}, n;

printf("Enter size: ");

scanf("%d", &n);

printf("Enter elements: ");

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

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

freq[arr[i]]++;

}

printf("Frequencies:\n");

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

if(freq[arr[i]] != 0) {

printf("%d: %d\n", arr[i], freq[arr[i]]);

freq[arr[i]] = 0;

}

}

return 0;

}

10. Write a program to merge two arrays.

#include <stdio.h>

int main() {

int a[50], b[50], c[100], n1, n2, i;

printf("Enter size of first array: ");

scanf("%d", &n1);

printf("Enter elements of first array: ");

for(i = 0; i < n1; i++) scanf("%d", &a[i]);

printf("Enter size of second array: ");

scanf("%d", &n2);

printf("Enter elements of second array: ");

for(i = 0; i < n2; i++) scanf("%d", &b[i]);

for(i = 0; i < n1; i++) c[i] = a[i];

for(i = 0; i < n2; i++) c[n1 + i] = b[i];

printf("Merged array: ");

for(i = 0; i < n1 + n2; i++) printf("%d ", c[i]);

return 0;

}