Assignment (6/8/2025)

# ReadandPrintElementsofanArray

**IPO:**

* + Input: Size ofarray, array elements
  + Process: Read and print elements
  + Output: Printed array elements **Program:**

#include<stdio.h>

int main() {

int a[100], n;

printf("Enter size of array: "); scanf("%d",&n);

printf("Enter elements: "); for(int i = 0; i < n; i++)

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

printf("Array elements: "); for(int i = 0; i < n; i++)

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

return 0;

}

## Output:

Enter size of array: 100 Enter elements: 67 Array elements: 34

# SumofElementsinanArray

**IPO:**

* + Input: Array elements
  + Process: Add a **l** elements
  + Output: Sum ofarray

## Program:

#include<stdio.h> int main() {

int a[100], n, sum = 0; printf("Enter size of array: "); scanf("%d",&n);

printf("Enter elements: "); for(int i = 0; i < n; i++) {

scanf("%d",&a[i]); sum += a[i];

}

printf("Sum = %d", sum); return 0;

}

## Output:

Enter size of array: 4 Enter elements: 2 89 12 Sum = 40

# MaximumandMinimuminanArray

**IPO:**

* + Input: Array elements
  + Process: Compare elements to findmax andmin
  + Output: Maximum and minimum values **Program:**

#include<stdio.h>

int main() {

int a[100], n, max, min; printf("Enter size of array: "); scanf("%d",&n);

printf("Enter elements: "); for(int i = 0; i < n; i++)

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

max = min = a[0]; for(int i = 1; i < n; i++) {

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

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

}

printf("Max = %d\nMin = %d", max, min); return 0;

}

## Output:

Enter size of array: 4 Enter elements: 6 7 8 9

Max = 9

Min = 6

# Reverse anArray

**IPO:**

* + Input: Array elements
  + Process: Print from last tofirst
  + Output: Reversed array **Program:**

#include<stdio.h>

int main() {

int a[100], n;

printf("Enter size of array: "); scanf("%d",&n);

printf("Enter elements: "); for(int i = 0; i < n; i++)

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

printf("Reversed array: "); for(int i = n - 1; i >= 0; i--)

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

return 0;

}

## Output:

Enter size of array: 3 Enter elements: 8 9 0 Reversed array: 0 9 8

# LinearSearchinanArray

**IPO:**

* + Input: Array elements and target value
  + Process: Compare each element with target
  + Output: Index iffound or not found **Program:**

#include<stdio.h>

int main() {

int a[100], n, key, found = 0; printf("Enter size of array: "); scanf("%d",&n);

printf("Enter elements: "); for(int i = 0; i < n; i++)

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

printf("Enter element to search: "); scanf("%d",&key);

for(int i = 0; i < n; i++) { if(a[i] == key) {

printf("Element found at index %d", i); found = 1;

break;

}

}

if(!found)

printf("Element not found");

return 0;

}

## Output:

Enter size of array: 4 Enter elements: 4 56 34 6

Enter element to search: 34 Element found at index 2

# SortArrayinAscendingOrder

**IPO:**

* + Input: Array elements
  + Process: Sort elements using a method (like bubble sort)
  + Output: Sorted array **Program:**

#include<stdio.h>

int main() {

int a[100], n, temp; printf("Enter size of array: "); scanf("%d",&n);

printf("Enter elements: "); for(int i = 0; i < n; i++)

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

// Bubble Sort

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

if(a[j] > a[j + 1]) {

temp = a[j]; a[j] = a[j + 1]; a[j + 1] = temp;

}

}

}

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

return 0;

}

## Output:

Enter size of array: 5 Enter elements: 4 2 5 1 3

Sorted array: 1 2 3 4 5

# InsertanElementinanArray

**IPO:**

* + Input: Array, position,new element
  + Process: Shift elements andinsert
  + Output: Updated array

## Program:

#include<stdio.h> int main() {

int a[100], n, pos, val; printf("Enter size of array: "); scanf("%d",&n);

printf("Enter elements: "); for(int i = 0; i < n; i++)

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

printf("Enter position to insert (0-indexed): "); scanf("%d",&pos);

printf("Enter value to insert: ");

scanf("%d",&val);

for(int i = n; i > pos; i--) a[i] = a[i - 1];

a[pos] = val; n++;

printf("Array after insertion: "); for(int i = 0; i < n; i++)

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

return 0;

}

## Output:

Enter size of array: 3 Enter elements: 1 2 4

Enter position to insert (0-indexed): 2 Enter value to insert: 3

Array after insertion: 1 2 3 4

# Delete anElementfroman Array

**IPO:**

* + Input: Array and value to delete
  + Process: Find and shift left
  + Output: Updated array **Program:**

#include<stdio.h>

int main() {

int a[100], n, val, i, pos = -1; printf("Enter size of array: "); scanf("%d",&n);

printf("Enter elements: "); for(i = 0; i < n; i++)

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

printf("Enter value to delete: "); scanf("%d",&val);

for(i = 0; i < n; i++) { if(a[i] == val) {

pos = i; break;

}

}

if(pos != -1) {

for(i = pos; i < n - 1; i++) a[i] = a[i + 1];

n--;

printf("Array after deletion: "); for(i = 0; i < n; i++)

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

} else {

printf("Element not found");

}

return 0;

}

## Output:

Enter size of array: 4

Enter elements: 10 6 23 40 Enter value to delete: 30 Array after deletion: 10 20 40

# FrequencyofElementsinanArray

**IPO:**

* + Input: Array elements
  + Process: Count frequency ofeach unique number
  + Output: Frequency ofeach element **Program:**

#include<stdio.h>

int main() {

int a[100], freq[100], n, i, j;

printf("Enter size of array: "); scanf("%d",&n);

printf("Enter elements: "); for(i = 0; i < n; i++) {

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

freq[i] = -1;

}

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

if(freq[i] != 0) {

for(j = i + 1; j < n; j++) { if(a[i] == a[j]) {

count++; freq[j] = 0;

}

}

freq[i] = count;

}

}

printf("Element - Frequency\n"); for(i = 0; i < n; i++) {

if(freq[i] != 0)

printf("%d - %d\n", a[i], freq[i]);

}

return 0;

}

## Output:

Enter size of array: 5 Enter elements: 1 2 2 3 1 Element - Frequency

1 - 2

2 - 2

3 - 1

# Merge TwoArrays

**IPO:**

* + Input: Two arrays
  + Process: Copy elementsofboth into one array
  + Output: Mergedarray

## Program:

#include<stdio.h> int main() {

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

printf("Enter size of first array: "); scanf("%d",&n1);

printf("Enter elements: ");

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

printf("Enter size of second array: "); scanf("%d",&n2);

printf("Enter elements: ");

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

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

for(i = 0; i < n2; i++)

merge[n1 + i] = b[i];

printf("Merged array: "); for(i = 0; i < n1 + n2; i++)

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

return 0;

}

## Output:

Enter size of first array: 3 Enter elements: 4 5 6

Enter size of second array: 2 Enter elements: 4 5

Merged array: 1 2 3 4 5

Thank you