TW/PW -Array-

Exercice 01

Basic Array Input and Output

Write a program that:

- Declares an array of integers.
- Takes 5 integer inputs from the user.
- Prints these integers on the screen.

```
int arr[5];
for (int i = 0; i < 5; i++) {
    printf("Enter an integer: ");
    scanf("%d", &arr[i]);
}
printf("You entered: ");
for (int i = 0; i < 5; i++) {
    printf("%d ", arr[i]);
}
```

Find the Largest Element in an Array

- Input 10 integers from the user.
- Find and print the largest number.

Reverse an Array

- Input 5 integers.
- Print the array in reverse order.

Sum of Array Elements

- Input n integers into an array.
- Calculate and print the sum of all elements.

Count Even and Odd Numbers

- Input an array of 10 integers.
- Count and display the number of even and odd elements.

Exercice 02

Find the Second Largest Element

- Input n integers.
- Find the second largest number without sorting the array.

Exercice 02

Find the Second Largest Element

- Input `n` integers.
- Find the second largest number without sorting the array.

Merge Two Arrays

- Input two arrays of size `n` and `m`.
- Merge them into a single array and print the result.

Remove Duplicates from an Array

- Input `n` integers.
- Remove duplicate elements and print the unique elements.

Find the Frequency of Each Element

- Input `n` integers.
- Print each unique element along with its frequency.

Cyclically Rotate an Array

- Input `n` integers.
- Rotate the array elements by one position to the right.

Exercice 03

Find Pairs with a Given Sum

- Input an array and a target sum.
- Find all pairs of elements whose sum equals the target.

Sort an Array Without Using Built-in Functions

- Input an array.
- Sort it in ascending order using bubble sort or selection sort.

Find Missing Number in an Array

- Input an array of size `n - 1` with elements from `1` to `n`

- Remove duplicate elements and print the unique elements.

Find the Frequency of Each Element

- Input n integers.
- Print each unique element along with its frequency.

Cyclically Rotate an Array

- Input n integers.
- Rotate the array elements by one position to the right.

Exercice 03

Find Pairs with a Given Sum

- Input an array and a target sum.
- Find all pairs of elements whose sum equals the target.

Sort an Array Without Using Built-in Functions

- Input an array.
- Sort it in ascending order using bubble sort or selection sort.

Find Missing Number in an Array

- Input an array of size n-1 with elements from 1 to n.
- Find the missing number.

Matrix Operations Using 2D Arrays

- Perform addition, subtraction, and multiplication of two 2D matrices.

Subarray with Maximum Sum

- Implement Kadane's algorithm to find the subarray with the maximum sum in an array.