COMPTE RENDU TP 5 ALAA BARKA
TD2 TP3
EX 1 :

```c
#include <stdio.h>

void printArr(int n, int arr[n])
{
    for (int i = 0; i < n; i++)
    {
        printf("%d ,", arr[i]);
    }
    printf("\n");
}
int main()
{

    int n;
    do
    {
        printf("Enter the Length \n");
        scanf("%d", &n);
    } while (n <= 0 || n > 50);

    int arr[n];
    for (int i = 0; i < n; i++)
    {
        printf("Enter the value of array of index %d", i);
        scanf("%d", &arr[i]);
    }
    printArr(n, arr);

    int newLength = n;
    int swapp;
    // looping searching for zeros
    for (int i = 0; i < n; i++)
    {
        if (arr[i] == 0)
        {
```

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

                arr[j] = arr[j + 1];
            }
            --newLength;
        }
    }
    printArr(newLength, arr);

    return 0;
}
```

Results :

```
C:\Users\Machiavelli\Desktop\UnivCodes\TP\TP5>gcc ex1.c -o ex && ex.exe
Enter the Length
8
Enter the value of array of index 01
Enter the value of array of index 12
Enter the value of array of index 20
Enter the value of array of index 34
Enter the value of array of index 476
Enter the value of array of index 59
Enter the value of array of index 63
Enter the value of array of index 70
1 ,2 ,0 ,4 ,76 ,9 ,3 ,0 ,
1 ,2 ,4 ,76 ,9 ,3 ,
```

EX2 :

```
#include <stdio.h>

void printArr(int n, int arr[n])
{
    for (int i = 0; i < n; i++)
    {
```

```
        printf("%d ,", arr[i]);
    }
}
int main()
{

    int n;
    printf("Enter the lenght \n ");
    scanf("%d", &n);

    int vect1[n];
    int vect2[n];

    int sumMult = 0;
    printf("FILLING THE FIRST VECTOR ! \n");

    for (int i = 0; i < n; i++)
    {
        printf("Enter the vect1 index %d \n", i);
        scanf("%d", &vect1[i]);
    }

    printf("FILLING THE SECOND VECTOR ! \n");

    for (int i = 0; i < n; i++)
    {
        printf("Enter the vect2 index %d \n", i);
        scanf("%d", &vect2[i]);
    }

    for (int i = 0; i < n; i++)
    {
        sumMult += vect1[i] * vect2[i];
    }
    printf("(");
    printArr(n, vect1);
```

```
    printf(")*(");
    printArr(n, vect2);
    printf(")=");
    printf(" %d", sumMult);
    return 0;
}
```

Results :

```
C:\Users\Machiavelli\Desktop\UnivCodes\TP\TP5>gcc ex2.c -o ex && ex.exe
Enter the lenght
 3
FILLING THE FIRST VECTOR !
Enter the vect1 index 0
3
Enter the vect1 index 1
2
Enter the vect1 index 2
-4
FILLING THE SECOND VECTOR !
Enter the vect2 index 0
2
Enter the vect2 index 1
-3
Enter the vect2 index 2
5
(3 ,2 ,-4 ,)*(2 ,-3 ,5 ,)= -20
C:\Users\Machiavelli\Desktop\UnivCodes\TP\TP5>
```

EX3 :

```
#include <stdio.h>

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

```
    }
}
int main()
{

    int n, pos = 0, neg = 0;
    do
    {

        printf("Enter the Length ! \n");
        scanf("%d", &n);

    } while (n ⩽ 0 || n > 50);
    int arr[n];
    int posArr[n];
    int negArr[n];
    for (int i = 0; i < n; i++)
    {
        printf("Enter The value of index %d", i);
        scanf("%d", &arr[i]);
    }

    for (int i = 0; i < n; i++)
    {
        if (arr[i] ⩾ 0)
        {
            posArr[pos] = arr[i];
            ++pos;
        }
        else
        {
            negArr[neg] = arr[i];

            ++neg;
        }
    }
```

```
    printf("The array is : \n");
    printArr(n, arr);
    printf("\nThe postive array is : \n ");
    printArr(pos, posArr);
    printf("\nThe negative array is : \n");
    printArr(neg, negArr);
    return 0;
}
```

```
C:\Users\Machiavelli\Desktop\UnivCodes\TP\TP5>gcc ex3.c -o ex && ex.exe
Enter the Length !
9
Enter The value of index 01
Enter The value of index 1-2
Enter The value of index 23
Enter The value of index 3-4
Enter The value of index 45
Enter The value of index 5-6
Enter The value of index 67
Enter The value of index 7-8
Enter The value of index 89
The array is :
1 ,-2 ,3 ,-4 ,5 ,-6 ,7 ,-8 ,9 ,
The postive array is :
 1 ,3 ,5 ,7 ,9 ,
The negative array is :
-2 ,-4 ,-6 ,-8 ,
C:\Users\Machiavelli\Desktop\UnivCodes\TP\TP5>
```

EX4 :

```
#include <stdio.h>

void printArr(int n, int arr[n])
{
    for (int i = 0; i < n; i++)
    {
```

```
        printf("%d ,", arr[i]);
    }
}
int main()
{

    int n;
    printf("enter the length \n");
    scanf("%d", &n);
    int arr[n];
    for (int i = 0; i < n; i++)
    {
        printf("enter value of index %d\n", i);
        scanf("%d", &arr[i]);
    }

    int max = 0, min = arr[0], iMin = 0, iMax, check = 0;

    for (int i = 0; i < n; i++)
    {
        if (arr[i] > max)
        {
            max = arr[i];
            iMax = i;
        }
        else if (arr[i] < min)
        {
            min = arr[i];
            iMin = i;
        }
    }

    printf("The array is : \n");
    printArr(n, arr);
    printf("\n");
    printf("the min is %d with index %d and the max is %d with index
%d", min, iMin, max, iMax);
```

```
    return 0;
}
```

Results :

```
C:\Users\Machiavelli\Desktop\UnivCodes\TP\TP5>gcc ex4.c -o ex && ex.exe
enter the length
6
enter value of index 0
1
enter value of index 1
-4
enter value of index 2
5
enter value of index 3
-8
enter value of index 4
0
enter value of index 5
66
The array is :
1 ,-4 ,5 ,-8 ,0 ,66 ,
the min is -8 with index 3 and the max is 66 with index 5
C:\Users\Machiavelli\Desktop\UnivCodes\TP\TP5>
```

EX5 :

```
#include <stdio.h>

int main()
{

    int matrix[5][5] = {
        {6, 2, 3, 5, 6},
        {4, 6, 2, 6, 1},
        {1, 3, 6, 7, 9},
```

```c
        {1, 6, 3, 6, 8},
        {6, 0, 1, 4, 6}

    };
    /*
    for (int i = 0; i < 5; i++)
    {
        for (int j = 0; j < 5; j++)
        {
            printf("enter the value of the matrix \n ");
            scanf("%d", &matrix[i][j]);
        }
    }

    */
    // printing the matrix
    for (int i = 0; i < 5; i++)
    {
        for (int j = 0; j < 5; j++)
        {
            printf("%d ,", matrix[i][j]);
        }
        printf("\n");
    }
    // printing the even rows
    for (int i = 0; i < 5; i++)
    {
        if (i % 2 == 0)
        {
            for (int j = 0; j < 5; j++)
            {
                printf("%d ,", matrix[i][j]);
            }
            printf("\n");
        }
    }
    // printing the odd elements in every row !
    for (int i = 0; i < 5; i++)
```

```
    {

        for (int j = 0; j < 5; j++)
        {
            if (j % 2 != 0)
            {
                printf("%d ,", matrix[i][j]);
            }
        }
        printf("\n");
    }
    int check = 1;

    // the diagonals

    // diagonal left
    int ele = matrix[0][0];
    printf("%d ,", matrix[0][0]);
    for (int i = 1; i < 5; i++)
    {
        if (ele != matrix[i][i])
        {
            check = 0;
        }
        printf("%d , ", matrix[i][i]);
    }
    printf("\n");

    int j = 3;
    printf("%d , ", matrix[0][4]);
    ele = matrix[0][4];
    for (int i = 1; i < 5; i++)
    {
        if (ele != matrix[i][j])
        {
            check = 0;
        }
```

```
        printf("%d ,", matrix[i][j]);
        j--;
    }

    printf("\n");
    if (check)
    {
        if (matrix[0][0] =/= matrix[0][4])
        {
            check = 0;
            printf("NON");
        }
        else
        {
            printf("OUI");
        }
    }
    else
        printf("NON");

    return 0;
}
```

Results :

```
C:\Users\Machiavelli\Desktop\UnivCodes\TP\TP5>gcc ex5.c -o ex && ex.exe
6 ,2 ,3 ,5 ,6 ,
4 ,6 ,2 ,6 ,1 ,
1 ,3 ,6 ,7 ,9 ,
1 ,6 ,3 ,6 ,8 ,
6 ,0 ,1 ,4 ,6 ,
6 ,2 ,3 ,5 ,6 ,
1 ,3 ,6 ,7 ,9 ,
6 ,0 ,1 ,4 ,6 ,
2 ,5 ,
6 ,6 ,
3 ,7 ,
6 ,6 ,
```

```
0 ,4 ,
6 ,6 , 6 , 6 , 6 ,
6 , 6 ,6 ,6 ,6 ,
OUI
C:\Users\Machiavelli\Desktop\UnivCodes\TP\TP5>
```