

ASSIGNMENT 20

PRANEESH SHARMA
B22
21052264

Q1. Write a program to display largest element.

Code:

```
//this program finds the largest element and stores it in the 0th position
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int i=0, n;
    float *data;
    printf("Enter total number of elements(1 to 100): ");
    scanf("%d", &n);
    data=(float*)calloc(n,sizeof(float));

    for(i=1;i<n+1;++i)
    {
        printf("Enter Number %d: ", i);
        scanf("%f", data+i);
    }
    for(i=1;i<n+1;++i)
        if(*data < *(data+i))
            *data = *(data+i);
    printf("Largest element = %.2f", *data);
    free(data);
    return 0;
}
```

Output:

```
Enter total number of elements(1 to 100): 5
Enter Number 1: 6
Enter Number 2: 4
Enter Number 3: 5
Enter Number 4: 8
Enter Number 5: 3
Largest element = 8.00
```

Q2. Write a program to display sum of elements of a 1D array.

Code:

```
//this program allocates n elements dynamically to a pointer variable, and finds sum of all n elements
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int n, i, *ptr, sum=0;
    printf("Enter number of elements: ");
    scanf("%d", &n);
    ptr=(int*)malloc(n*sizeof(int));
    printf("Enter elements in array: ");
    for(i=0;i<n;++i)
    {
        scanf("%d", ptr+i);
        sum += *(ptr+i);
    }
    printf("Sum = %d", sum);
    free(ptr);
    return 0;
}
```

Output:

```
Enter number of elements: 5
Enter elements in array: 1 2 3 4 5
Sum = 15
```

Q3. Write a program to display sum of elements of a 2D array.

Code:

```
//this program gives sum of elements in a 2D array
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int n, i, j, sum=0;
    int(*a)[5];
    printf("Enter number of rows: ");
    scanf("%d", &n);
    a=(int(*)[5]) malloc(n*5*sizeof(int));
    for(i=0;i<n;i++)
        for(j=0;j<5;j++)
        {
            printf("Enter element [%d][%d]: ", i+1, j+1);
            scanf("%d", &a[i][j]);
            sum+=a[i][j];
        }
    printf("Sum of elements: %d", sum);
    return 0;
}
```

Output:

```
Enter number of rows: 2
Enter element [1][1]: 1
Enter element [1][2]: 2
Enter element [1][3]: 3
Enter element [1][4]: 4
Enter element [1][5]: 5
Enter element [2][1]: 6
Enter element [2][2]: 7
Enter element [2][3]: 8
Enter element [2][4]: 9
Enter element [2][5]: 10
Sum of elements: 55
```

Q4. Write a program to display average score of 10 matches.

Code:

```
//this program gives the average score of 10 matches
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int i, *ptr, sum=0, avg;
    ptr=(int*)malloc(10*sizeof(int));
    for(i=0;i<10;++i)
    {
        printf("Enter score of Match %d: ", i+1);
        scanf("%d", ptr+i);
        sum += *(ptr+i);
    }
    avg = sum/10;
    printf("Average score = %d", avg);
    free(ptr);
    return 0;
}
```

Output:

```
Enter score of Match 1: 10
Enter score of Match 2: 45
Enter score of Match 3: 69
Enter score of Match 4: 59
Enter score of Match 5: 68
Enter score of Match 6: 75
Enter score of Match 7: 47
Enter score of Match 8: 26
Enter score of Match 9: 96
Enter score of Match 10: 47
Average score = 54
```