

Data structure Lab assignment 1

1. Write c program to Increment & Decrement Operations Using Pointer

Code:

```
1 //Write a c program to Increment and Decrement Operations Using Pointer
2
3 #include<stdio.h>
4
5 int main(){
6
7     int a, *ptr;
8     ptr = &a;
9     printf("Enter integer:");
10    scanf("%d", &a);
11    printf("Value after increment operation is %d \n", ++(*ptr));
12    printf("Value after decrement operation is %d \n", --(*ptr));
13
14 }
15
```

Output:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

Windows PowerShell
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PS C:\Users\omgha> cd "f:\Assignments\WCE2k24_Data_Structures\Practice Questions\Sep 27\" ; if ($?) {
Enter integer:5
Value after increment operation is 6
Value after decrement operation is 5
PS F:\Assignments\WCE2k24_Data_Structures\Practice Questions\Sep 27> █
```

2. Write a C program to find the length of the string Using Pointer

Code:

```
1 //Write a c program that finds the length of the string using pointer
2
3 #include<stdio.h>
4
5 int main()
6 {
7     int size=0;
8     char str[30];
9     gets(str);
10    char *ptr = str;
11
12    int i=0,t=1;
13    while(t)
14    {
15        if(*ptr=='\0')
16        {
17            break;
18        }
19        size++;
20        ptr++;
21    }
22    printf("The size of the string is %d",size);
23 }
24
```

Output:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

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PS C:\Users\omgha> cd "f:\Assignments\WCE2k24_Data_Structures\Practice Questions\Sep 27\" ; if ($?) { gcc
Hello World !!!
The size of the string is 15
PS F:\Assignments\WCE2k24_Data_Structures\Practice Questions\Sep 27> |
```

3. Add Two Numbers using pointers

Code:

```
1  //Write a c program to Add two numbers using pointers
2
3  #include<stdio.h>
4
5  int main()
6  {
7      int a,b;
8      int *p=&a;
9      int *q=&b;
10     printf("\n enter two no");
11     scanf("%d%d",&a,&b);
12     int sum;
13     sum=*p+*q;
14     printf("sum:%d\n",sum);
15 }
16
```

Output:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Windows PowerShell

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PS C:\Users\omgha> cd "f:\Assignments\WCE2k24_Data_Structures\Practice Questions\Sep 27\" ; if (\$?) { g

enter two no 5 10

sum:15

PS F:\Assignments\WCE2k24_Data_Structures\Practice Questions\Sep 27> █

4. Write c program to reverse Array Using Pointers

Code:

```
//Q4: Write c program to reverse Array Using Pointers

#include <stdio.h>

void reverseArray(int A[], int n){
    int *left = A;
    int *right = A + n - 1;

    while (left < right) {
        *left ^= *right;
        *right ^= *left;
        *left ^= *right;

        left++;
        right--;
    }
}

int main(){
    int n;
    printf("Enter the length of array: ");
    scanf("%d", &n);

    int A[n];
    printf("\nEnter the array elemnts to be reversed: ");
    for(int i=0; i<n; i++) {scanf("%d", &A[i]);}

    reverseArray(A, n);
    printf("\nThe reversed array is: ");
    for(int i=0; i<n; i++) {printf("%d ", A[i]);}

    return 0;
}
```

Output:

```
Windows PowerShell
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PS C:\Users\omgha> cd "f:\Assignments\WCE2k24_Data_Structures\Practice Questions\Sep 27\" ; if ($?) {
Enter the length of array: 5

Enter the array elemnts to be reversed: 1 2 3 4 5

The reversed array is: 5 4 3 2 1
PS F:\Assignments\WCE2k24_Data_Structures\Practice Questions\Sep 27> █
```