

// 1. Write a C program to add two numbers using pointers.

```
#include <stdio.h>

int main() {
    int num1, num2, sum;
    int *ptr1, *ptr2;

    printf("Enter first number: ");
    scanf("%d", &num1);

    printf("Enter second number: ");
    scanf("%d", &num2);

    ptr1 = &num1;
    ptr2 = &num2;

    sum = *ptr1 + *ptr2;

    printf("Sum of %d and %d is %d", *ptr1, *ptr2, sum);

    return 0;
}
```

Output: -

```
Enter first number: 50
Enter second number: 50
Sum of 50 and 50 is 100
```

// 2. Write a C program to swap two numbers using pointers.

```
#include <stdio.h>

int main(){
    int num1, num2;
    int *ptr1, *ptr2;

    num1 = 1;
    num2 = 2;

    ptr1 = &num1;
    ptr2 = &num2;

    printf("Before Swap : %d %d", *ptr1, *ptr2);

    ptr1 = &num2;
    ptr2 = &num1;

    printf("\nAfter Swap : %d %d", *ptr1, *ptr2);

    return 0;
}
```

Output: -

Before Swap : 1 2

After Swap : 2 1

// 3. Write a C program to input and print array elements using pointer.

```
#include <stdio.h>

int main(){
    int array[100]={};
    int *ptr, nElement;

    printf("Number of elements you want to input : ");
    scanf("%d", &nElement);

    for (int i = 0; i < nElement; i++)
    {
        printf("Enter value : ");
        scanf("%d", &array[i]);
    }

    ptr = array;

    printf("\n\n");
    for (int i = 0; i < nElement; i++)
    {
        printf("%d ", *(ptr+i));
    }

    return 0;
}
```

Output: -

Enter value : 50
Enter value : 40
Enter value : 30
Enter value : 20
Enter value : 10

50 40 30 20 10

// 4. Write a C program to copy one array to another using pointers.

```
#include <stdio.h>

int main() {
    int arr1[100], arr2[100], n, i;
    int *ptr1, *ptr2;

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

    for (i = 0; i < n; i++) {
        printf("Enter value : ");
        scanf("%d", &arr1[i]);
    }

    ptr1 = arr1;
    ptr2 = arr2;

    for (i = 0; i < n; i++) {
        *(ptr2 + i) = *(ptr1 + i);
    }

    printf("\nElements of the first array are: ");
    for (i = 0; i < n; i++) {
        printf("%d ", *(ptr1 + i));
    }

    printf("\nElements of the second array are: ");
    for (i = 0; i < n; i++) {
        printf("%d ", *(ptr2 + i));
    }

    return 0;
}
```

Output: -

```
Enter the size of the array: 5
Enter value : 50
Enter value : 40
Enter value : 30
Enter value : 20
Enter value : 10
```

```
Elements of the first array are: 50 40 30 20 10
Elements of the second array are: 50 40 30 20 10
```

// 5. Write a C program to swap two arrays using pointers.

```
#include <stdio.h>

int main() {
    int arr1[5] = {1, 2, 3, 4, 5};
    int arr2[5] = {6, 7, 8, 9, 10};
    int *ptr1 = arr1;
    int *ptr2 = arr2;

    printf("Before swapping.\narr1 is: ");
    for (int i = 0; i < 5; i++) {
        printf("%d ", *(ptr1 + i));
    }

    printf("\n\nBefore swapping.\narr2 is: ");
    for (int i = 0; i < 5; i++) {
        printf("%d ", *(ptr2 + i));
    }

    for (int i = 0; i < 5; i++) {
        *(ptr1 + i) = *(ptr1 + i) + *(ptr2 + i);
        *(ptr2 + i) = *(ptr1 + i) - *(ptr2 + i);
        *(ptr1 + i) = *(ptr1 + i) - *(ptr2 + i);
    }

    printf("\n\nAfter swapping.\narr1 is: ");
    for (int i = 0; i < 5; i++) {
        printf("%d ", *(ptr1 + i));
    }

    printf("\n\nAfter swapping.\narr2 is: ");
    for (int i = 0; i < 5; i++) {
        printf("%d ", *(ptr2 + i));
    }

    return 0;
}
```

Output: -

Before swapping.
arr1 is: 1 2 3 4 5

Before swapping.
arr2 is: 6 7 8 9 10

After swapping.
arr1 is: 6 7 8 9 10

After swapping.
arr2 is: 1 2 3 4 5