Program:

```c
//write the c program to print and count Even and Odd elements in an array
#include<stdio.h>

void isOddorEven(int arr2[],int num)
{
    int isEven = 0;
    int isOdd  = 0;
    // printf("------------------------------------------------------------------
-\n");
    for(int i=0;i<num;i++)
    {
        if(arr2[i]%2 == 0)
        {
            printf("The Given Number is Even\n",arr2[i]);
            isEven++;
        }
        else
        {
            printf("The Given Number is Odd\n",arr2[i]);
            isOdd++;
        }
    }
    //count of even and odd numbers
    // printf("------------------------------------------------------------------
---\n");
    printf("Total Number of Even numbers : %d\n",isEven);
    printf("Total Number of Odd numbers : %d\n",isOdd);
    // printf("------------------------------------------------------------------
---\n");
}
int main()
{
    int num;
    // printf("\t\t\tEven or Odd\n");
    printf("Enter the number of elements you want to enter : ");
    scanf("%d",&num);
    float arr[num];
    int arr2[num];
    int flag = 0;
    //To get user input in float and type cast to int
    for(int i=0;i<num;i++)
    {
        printf("Enter Number : ");
        scanf("%f",&arr[i]);
        float temp = arr[i]*100;
        arr2[i] = temp;
    }
```

```
    isOddorEven(arr2,num);
    return 0;
}
```

Output :

```
PS E:\SGGS\2ND YEAR\C> cd "e:\SGGS\2ND YEAR\C\" ; if ($?)
Enter the number of elements you want to enter : 4
Enter Number : 10.01
Enter Number : 10.02
Enter Number : 1.03
Enter Number : 10.04
The Given Number is Odd
The Given Number is Even
The Given Number is Odd
The Given Number is Even
Total Number of Even numbers : 2
Total Number of Odd numbers : 2
PS E:\SGGS\2ND YEAR\C>
```

Program:

```c
// WAP to perform Transpose of matrics

#include <stdio.h>

int main()
{
    int arr[3][3];
    printf("Enter 3*3 matrix 9 elements = ");
    for (int i = 0; i < 3; i++)
    {
        for (int j = 0; j < 3; j++)
        {
            scanf("%d", &arr[i][j]);
        }
    }
    printf("\n\n");

    for (int i = 0; i < 3; i++)
    {
        for (int j = 0; j < 3; j++)
        {
            printf("%d \t", arr[i][j]);
        }
        printf("\n");
    }

    printf("\n\n");

    printf("Transpose of matrix = \n\n");

    for (int i = 0; i < 3; i++)
    {
        for (int j = 0; j < 3; j++)
        {
            printf("%d \t", arr[j][i]);
        }
        printf("\n");
    }

    return 0;
}
```

Output :

```
PS E:\SGGS\2ND YEAR\C> cd "e:\SGGS\2ND YEAR\C\" ; i
Enter 3*3 matrix 9 elements = 1 2 3 4 5 6 7 8 9


1       2       3
4       5       6
7       8       9


Transpose of matrix =

1       4       7
2       5       8
3       6       9
```

Program:

```c
// WAP to perform operation using pointer
#include<stdio.h>

int main()
{
    int a = 30;
    int b = 40;

    int *ptr1 = &a;
    int *ptr2 = &b;

    printf("sum of pointer value = %d\n",*ptr1 + *ptr2);

    printf("subtraction of pointer value = %d\n",*ptr1 - *ptr2);

    printf("multiplication of pointer value = %d\n",*ptr1 * *ptr2);

    printf("division of pointer value = %d\n",*ptr1 / *ptr2);
    return 0;
}
```

Output :

```
PS E:\SGGS\2ND YEAR\C> cd "e:\SGGS\2ND YEAR\C\"
sum of pointer value = 70
subtraction of pointer value = -10
multiplication of pointer value = 1200
division of pointer value = 0
PS E:\SGGS\2ND YEAR\C>
```

Program:

```c
// WAP for concatenation using pointer

#include <stdio.h>
#include <string.h>

int main()
{
    char str1[20] = "Abhang ";
    char str2[20] = "Paturkar";

    char *ptr1 = str1;
    char *ptr2 = str2;

    char result[100];

    strcpy(result, ptr1);
    strcat(result, ptr2);

    printf("Concatenated string = %s \n", result);

    return 0;
}
```

Output :

```
PS E:\SGGS\2ND YEAR\C> cd "e:\SGGS\2ND YEA
Conacatinated string = Abhang Paturkar
PS E:\SGGS\2ND YEAR\C>
```

Program:

```c
//write a c program for dinamic allocation uing malloc calloc realloc free function
#include <stdio.h>
#include <stdlib.h>

int main() {
    int *array = malloc(10 * sizeof(int));

    if (array == NULL) {
        printf("Error: Memory allocation failed.\n");
        return 1;
    }

    for (int i = 0; i < 10; i++) {
        array[i] = i;
    }

    printf("Array contents:\n");
    for (int i = 0; i < 10; i++) {
        printf("%d ", array[i]);
    }
    printf("\n");

    array = realloc(array, 20 * sizeof(int));

    if (array == NULL) {
        printf("Error: Reallocation failed.\n");
        return 1;
    }

    for (int i = 10; i < 20; i++) {
        array[i] = i;
    }

    printf("Array contents after reallocation:\n");
    for (int i = 0; i < 20; i++) {
        printf("%d ", array[i]);
    }
    printf("\n");

    free(array);

    return 0;
}
```

Output :

```
PS E:\SGGS\2ND YEAR\C> cd "e:\SGGS\2ND YEAR\C\" ; if ($?)
Array contents:
0 1 2 3 4 5 6 7 8 9
Array contents after reallocation:
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
PS E:\SGGS\2ND YEAR\C>
```