Practice programs:

1. **Write a C program to perform basic Arithmetic Operations (addition, subtraction, multiplication, division, remainder)**

```
#include <stdio.h>  // Preprocessor directive to include standard input/output
functions
int main() {
    int a, b;        // Declare two integer variables
 int sum, diff, product, quotient, remainder; // Declare variables to store results
 printf("Enter two integers: ");
scanf("%d %d", &a, &b); // Take input from user and stores them in a and b
// Perform arithmetic operations
Sum=a+b;
diff = a - b;
 product = a * b;
quotient = a / b;      // Integer division
remainder = a % b;     // Modulo operation
// Display results
printf("Sum= %d\n", sum);
printf("Difference = %d\n", diff);
printf("Product = %d\n", product);
 printf("Quotient = %d\n", quotient);
printf("Remainder = %d\n", remainder);
   return 0; // Indicate that program ended successfully
}
```

2. **Write a C Program to find the largest of two numbers**

```
#include <stdio.h>  // For input and output functions
int main() {
 int num1, num2;  // Declare two integer variables
printf("Enter two numbers: ");
 scanf("%d %d", &num1, &num2); // Take user input
 // Compare the two numbers
if (num1 > num2)
 {
    printf("%d is larger\n", num1); // If num1 is greater
 } else if (num2 > num1)
{
printf("%d is larger\n", num2); // If num2 is greater
} else
 {
```

```
     printf("Both numbers are equal\n"); // If both are equal
  }
   return 0; // Successful program termination
 }
```

3. Write a C program to print your own name by taking it as Input

```c
#include <stdio.h>

int main() {
    // Defining string (character array) assuming 100 characters at max

 char name[100];  //[] indicates that it is character array

   // Taking input from the user
   printf("Enter Your Name: ");
   scanf("%s", &name); //%s means we want to read a string (sequence of
characters). &name is used here to give the memory address of the array name
so scanf() knows where to store the characters.

 printf("Your Name: %s\n", name); // Printing your name to the screen

   return 0;
}
```

4. Write a C program to multiply two float numbers

```c
#include <stdio.h>
   int main() {
       float num1, num2, product;

       printf("Enter two floating-point numbers: ");
       scanf("%f %f", &num1, &num2);

       product = num1 * num2;

       printf("Product = %f\n", product);
       return 0;
   }
```

5. Write a C program to swap two numbers

```c
#include <stdio.h>
```

```c
int main() {
    int a = 5, b = 10, temp;

    // Swapping values of a and  b
    temp = a;
    a = b;
    b = temp;
    printf("a = %d, b = %d\n", a, b);          %d\n      Print integer and move to
new line
    return 0;
}
```

6. **Write a C program to find the Area and perimeter of a rectangle**
```c
#include <stdio.h>

int main() {

        int l = 10, b = 10;
         printf("Area of rectangle is : %d", l * b);
        printf("\nPerimeter of rectangle is : %d", 2 * (l + b));
         return 0;
}
```

7. **Write a C Program to find the Area of a circle**
```c
#include <stdio.h>
#define PI 3.14159   // define constant for π

int main() {
    float radius, area;

    // Input radius
    printf("Enter the radius of the circle: ");
    scanf("%f", &radius);

    // Calculate area
    area = PI * radius * radius;

    // Display result
    printf("Area of the circle = %.2f\n", area);
```

```
    return 0;
}
```

Actual Lab programs:

1. **Write a C program to find the roots of a quadratic equation ax^2+bx+c=0**

```c
#include <stdio.h>
#include <stdlib.h>
#include<math.h>
int main()
{

float a,b,c,x1,x2,d;
printf("Enter the coeffients for a,b,c\n");
scanf("%f%f%f", &a,&b,&c);

if(a==0)
{

printf("\nRoots cant be find\n");
exit(0);
}
d=b*b-4*a*c;
if(d==0)
{

x1=x2= -b/(2*a);
printf("\nThe roots are real and equal\n");
printf("\nx1=%f\n x2=%f\n", x1,x2);

}

else if(d>0)
{
x1= (-b + sqrt(d))/(2*a);
x2= (-b - sqrt(d))/(2*a);

printf("\nThe roots are real and distinct\n");
```

```c
printf(" \nx1=%f\n x2=%f\n", x1,x2);
}

else
{
x1= -b/(2*a);
x2=sqrt(fabs(d))/ (2*a);

printf("\nThe roots are real and imaginary\n");
printf("\n(x1+ix2)= %f+i%f\n",x1,x2);
printf("\n(x1-ix2)= %f-i%f\n", x1,x2);

}
return 0;
}
```

2. Write a C program to find the sum of all the digits and occurrence of a digit in the number.

```c
#include <stdio.h>
#include <stdlib.h>

int main()
{

int num, digit, rem,sum=0,temp, count=0;
printf("Enter the Number\n");
scanf("%d",&num);

printf("Enter the digit to be find in the Number\n");
scanf("%d", &digit);
temp=num;

while(num!=0)
{
rem=num%10;
sum=sum+rem;
num=num/10;
if(rem==digit)
```

```c
count++;
}

printf("The Sum of all the digits of %d is %d\n", temp,sum);
printf("The digit %d is occurred for %d times\n", digit, count);

return 0;

}
```