

In this lab, you will learn to build, run and debug small C programs.

The basic objectives are:

- (1) Understand the basic instructions in C.
- (2) Think of ways to implement a given problem in C.
- (3) Get familiar with your IDE.

**Task 1: We wish to find the roots of a quadratic equation. We wrote the following program. But, it does not work. Can you find the mistakes and correct them? Also, modify the fixed program to print the largest root if the roots are real and unequal.**

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

int main()
{
    float a, b, c;

    printf("Enter coefficients: ");
    scanf("%d %d %d",&a, &b, &c);
    float determinant = b*b-4ac;
    if (determinant > 0)
    {
        // sqrt() function returns square root
        float root1 = (-b+sqrt(determinant))/(2a);
        float root2 = (-b-sqrt(determinant))/(2a);
        printf("root1 = %.2lf and root2 = %.2lf",root1,root2);
    }
    else if (determinant == 0)
    {
        float root1 = root2 = -b/(2a);
        printf("root1 = root2 = %.2lf;", root1);
    }
    else
    {
        float realPart = -b/(2a);
        float imaginaryPart = sqrt(-determinant)/(2a);
        printf("root1 = %.2lf+%.2lfi and root2 = %.2f-%.2fi", realPart,
            imaginaryPart, realPart, imaginaryPart);
    }

    return 0;
}
```

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**Task 2:** For a given 5 digit number, print the sum of the digits in the odd position.  
Here are some sample input and output:

Input: 45613 Output: 13

Input: 01212 Output: 4

**Task 3:** Print Vv as shown below using \*:

```
*           *
*           *
*         * *       *
*       *   *   *   *
*     * *   * *
*   * *     * *
```