C day9_q17.c > ...

```c
// Q17: Write a program to find the roots of a quadratic equation and categorize them.

/*
Sample Test Cases:
Input 1:
1 -3 2
Output 1:
Roots are real and different: 2, 1

Input 2:
1 -2 1
Output 2:
Roots are real and same: 1

Input 3:
1 2 5
Output 3:
Roots are complex

*/

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

int main() {
    float a, b, c, d, root1, root2, realPart, imagPart;
    scanf("%f %f %f", &a, &b, &c);
    d = b*b - 4*a*c;
    if(d > 0) {
        root1 = (-b + sqrt(d)) / (2*a);
        root2 = (-b - sqrt(d)) / (2*a);
        printf("Real and different roots: %.2f and %.2f\n", root1, root2);
    } else if(d == 0) {
        root1 = -b / (2*a);
        printf("Real and same roots: %.2f and %.2f\n", root1, root1);
    } else {
        realPart = -b / (2*a);
        imagPart = sqrt(-d) / (2*a);
        printf("Complex roots: %.2f + %.2fi and %.2f - %.2fi\n", realPart, imagPart, realPart, imagPart);
    }
    return 0;
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\drago\OneDrive\Desktop\C H.W> gcc .\day9_q17.c
PS C:\Users\drago\OneDrive\Desktop\C H.W> ./a.exe
1 -3 2
Real and different roots: 2.00 and 1.00
PS C:\Users\drago\OneDrive\Desktop\C H.W> gcc .\day9_q17.c
PS C:\Users\drago\OneDrive\Desktop\C H.W> ./a.exe
1 -2 1
Real and same roots: 1.00 and 1.00
PS C:\Users\drago\OneDrive\Desktop\C H.W> gcc .\day9_q17.c
PS C:\Users\drago\OneDrive\Desktop\C H.W> ./a.exe
1 2 5
Complex roots: -1.00 + 2.00i and -1.00 - 2.00i
PS C:\Users\drago\OneDrive\Desktop\C H.W>
```

C day9_q18.c > main()

```c
// Q18: Write a program that accepts a percentage (0-100) and assigns a grade based on the following criteria:
// 90-100: Grade A
// 80-89: Grade B
// 70-79: Grade C
// 60-69: Grade D
// below 60: Grade F.

#include <stdio.h>

int main()
{
    char grade;
    int marks;
    printf("Enter Your Marks: ");
    scanf("%d", &marks);
    if (marks <= 100 && marks >= 90)
    {
        printf("grade = 'A' ");
    }
    else if (marks <= 90 && marks >= 80)
    {
        printf("grade = 'B' ");
    }
    else if (marks <= 80 && marks >= 70)
    {
        printf("grade = 'C' ");
    }
    else if (marks <= 70 && marks >= 60)
    {
        printf("grade = 'D' ");
    }
    else if (marks <= 60 && marks >= 50)
    {
        printf("grade = 'E' ");
    }
    else
    {
        printf("grade = 'F' ");
    }
    return 0;
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\drago\OneDrive\Desktop\C H.W> gcc .\day9_q18.c
PS C:\Users\drago\OneDrive\Desktop\C H.W> ./a.exe
Enter Your Marks: 99
grade = 'A'
PS C:\Users\drago\OneDrive\Desktop\C H.W> gcc .\day9_q18.c
PS C:\Users\drago\OneDrive\Desktop\C H.W> ./a.exe
Enter Your Marks: 85
grade = 'B'
PS C:\Users\drago\OneDrive\Desktop\C H.W> gcc .\day9_q18.c
PS C:\Users\drago\OneDrive\Desktop\C H.W> ./a.exe
Enter Your Marks: 76
grade = 'C'
PS C:\Users\drago\OneDrive\Desktop\C H.W> gcc .\day9_q18.c
PS C:\Users\drago\OneDrive\Desktop\C H.W> ./a.exe
Enter Your Marks: 66
grade = 'D'
PS C:\Users\drago\OneDrive\Desktop\C H.W> gcc .\day9_q18.c
PS C:\Users\drago\OneDrive\Desktop\C H.W> ./a.exe
Enter Your Marks: 51
grade = 'E'
PS C:\Users\drago\OneDrive\Desktop\C H.W> gcc .\day9_q18.c
PS C:\Users\drago\OneDrive\Desktop\C H.W> ./a.exe
Enter Your Marks: 23
grade = 'F'
PS C:\Users\drago\OneDrive\Desktop\C H.W>
```