Vibe Coding Assessment

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1. 5 Small Patterns

Prompt:

Write a C program that prints 5 small patterns using nested loops.The patterns should be:
1. Right-angled triangle (stars)
2. Inverted right-angled triangle (stars)
3. Number triangle (1 to n in each row)
4. Repeating number triangle (same number in each row)
5. Hollow square (stars at borders)
For each pattern, print the pattern name before it and include the expected output as a block comment right after the code for that pattern.

```
#include <stdio.h>

int main() {
    int i, j;

    // 1. Right-angled triangle
    printf("\nPattern 1:\n");
    for (i = 1; i <= 5; i++) {
        for (j = 1; j <= i; j++)
            printf("* ");
        printf("\n");
    }
    /*
    Output:
    *
    * *
    * * *
    * * * *
    * * * * *
    */

    // 2. Inverted right-angled triangle
    printf("\nPattern 2:\n");
    for (i = 5; i >= 1; i--) {
        for (j = 1; j <= i; j++)
```

```
        printf("* ");
    printf("\n");
}
/*
Output:
* * * * *
* * * *
* * *
* *
*
*/

// 3. Number triangle
printf("\nPattern 3:\n");
for (i = 1; i <= 5; i++) {
    for (j = 1; j <= i; j++)
        printf("%d ", j);
    printf("\n");
}
/*
Output:
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
*/

// 4. Repeating number triangle
printf("\nPattern 4:\n");
for (i = 1; i <= 5; i++) {
    for (j = 1; j <= i; j++)
        printf("%d ", i);
    printf("\n");
}
/*
Output:
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
*/
```

```
    // 5. Hollow square
    printf("\nPattern 5:\n");
    for (i = 1; i <= 5; i++) {
        for (j = 1; j <= 5; j++) {
            if (i == 1 || i == 5 || j == 1 || j == 5)
                printf("* ");
            else
                printf("  ");
        }
        printf("\n");
    }
    /*
    Output:
    * * * * *
    *       *
    *       *
    *       *
    * * * * *
    */

    return 0;
}
```

2.Sleepy Technique

Prompt :
I want to get numerator, denominator from user then divide them, but like sleepy technique if 25/56 => cancel 5 from numerator and denominator and give 2/6 as answer. Write it as a program in C.

```
#include <stdio.h>

int main() {
    int num, den;
    int num_tens, num_units, den_tens, den_units;

    printf("Enter numerator: ");
    scanf("%d", &num);
    printf("Enter denominator: ");
    scanf("%d", &den);
```

```
    // Extract digits
    num_tens = num / 10;
    num_units = num % 10;
    den_tens = den / 10;
    den_units = den % 10;

    // Check for common digits and cancel one
    if (num_units == den_units && num_units != 0) {
        printf("After sleepy cancel: %d/%d\n", num_tens, den_tens);
    }
    else if (num_units == den_tens && num_units != 0) {
        printf("After sleepy cancel: %d/%d\n", num_tens, den_units);
    }
    else if (num_tens == den_units && num_tens != 0) {
        printf("After sleepy cancel: %d/%d\n", num_units, den_tens);
    }
    else if (num_tens == den_tens && num_tens != 0) {
        printf("After sleepy cancel: %d/%d\n", num_units, den_units);
    }
    else {
        printf("No common digit to cancel!\n");
    }

    return 0;
}
```