

# CSE306 Software Quality in Practice

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**Marcus Hutchins**  @MalwareTechBlog · 6h 

Spent 25 minutes trying to debug a syntax error. Turns out the database connection dropped and I had been typing queries into the bash terminal



 45

 46

 1,272





# Question for class

When stepping through code with debugger, why are declarations skipped?

```
int foo() {  
    int x;  
    double y;  
    y = f(x) * 3; // why does debugger skip to here?  
    ...  
}
```



# ANSWER

Declarations are handled by compiler at compile time. They have no run-time analogue.



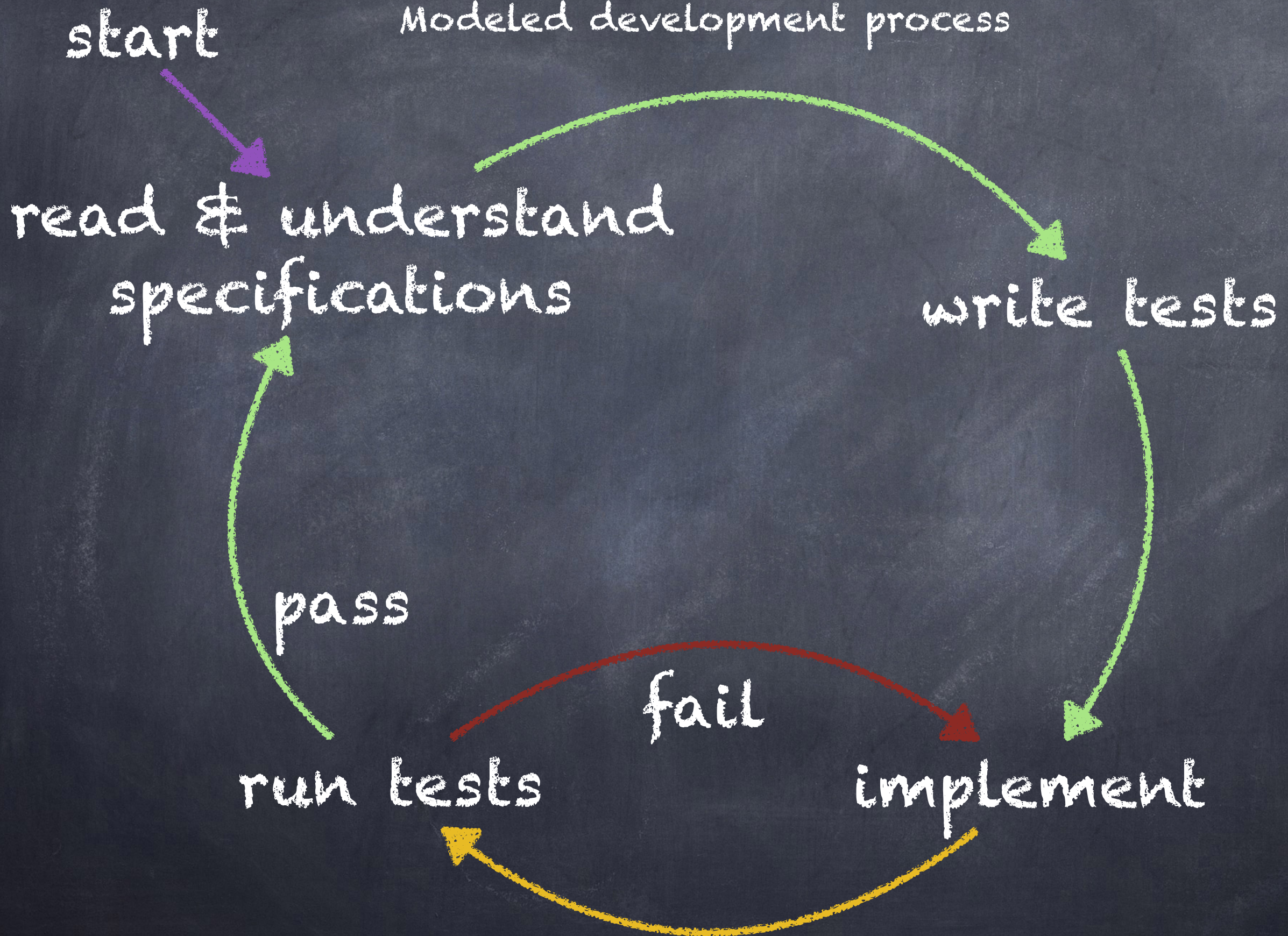
# EXPO1

- Team-based: use PRE teams
- Demo



# LEX09

Modeled development process





# Specification

The final digit of a Universal Product Code is a check digit computed as follows:

- 1 Add the digits in the odd-numbered positions (first, third, fifth, etc.) together and multiply by three.

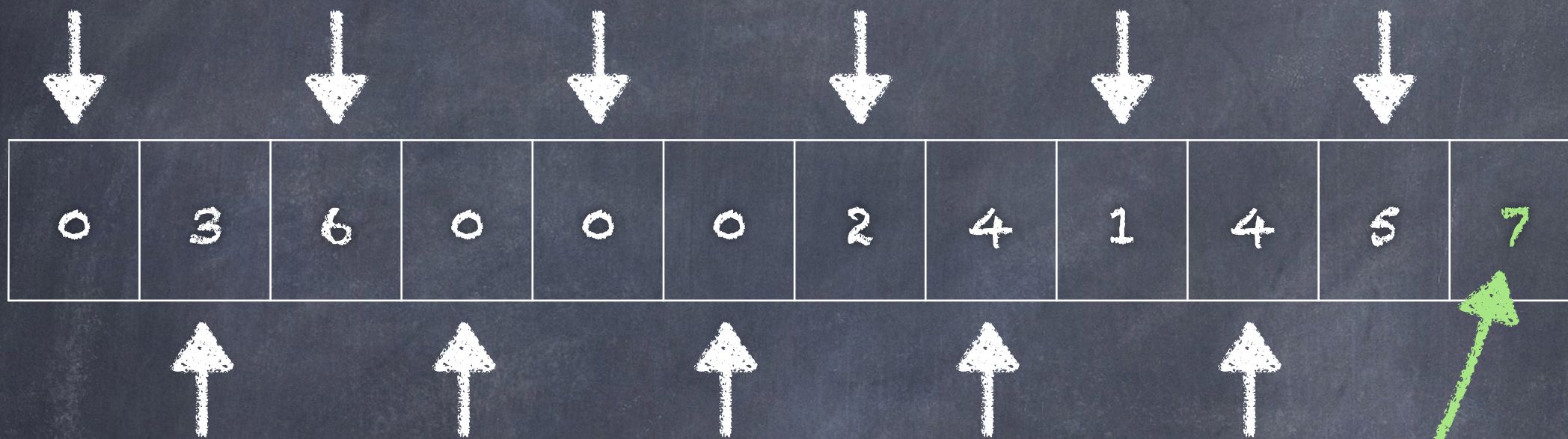
- 2 Add the digits (up to but not including the check digit) in the even-numbered positions (second, fourth, sixth, etc.) to the result.

- 3 Take the remainder of the result divided by 10 (modulo operation) and if not 0, subtract this from 10 to derive the check digit.

[https://en.wikipedia.org/wiki/Check\\_digit#UPC](https://en.wikipedia.org/wiki/Check_digit#UPC)



$$3 * (0+6+0+2+1+5) = 3 * 14 = 42$$



$$3+0+0+4+4 = 11$$

$$42 + 11 = 53$$

$$53 \% 10 = 3$$

$$10 - 3 = 7$$





## char to int Conversion

If `c` is a char from '0' to '9', how can you convert it to an int from 0 to 9?



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int convert(char c) { return c - '0'; }
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```
int convert(char c) { return c - '0'; }
```

```
int convert(char c) {  
    switch (c) {  
        case '0': return 0;  
        case '1': return 1;  
        ...  
        case '9': return 9;  
        case 'X': return 10; // CAN ALSO HANDLE 'X'  
    }  
}
```