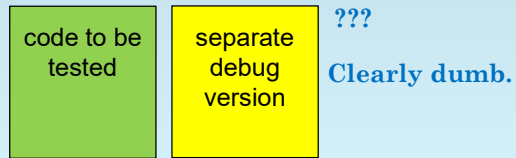## Extremely Bad Practice: Test Something Different

Option 3?
◦ **Write and test a separate version**,
◦ then throw it away and ship the original.

code to be tested	separate debug version

???

Clearly dumb.

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Just as Bad, But Harder to Spot

What if we do it this way?

```
if (debug_mode) {
    separate debug version
} else {
    code to be tested
}
```

This code is never tested!

Less clear, but still dumb.

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A Little Help, Please?

I have a question…

How are bytes stored in memory?

For **example**,
◦ when a processor writes
◦ a **32-bit register**
◦ **to 8-bit-addressable memory**,
◦ **what happens**?
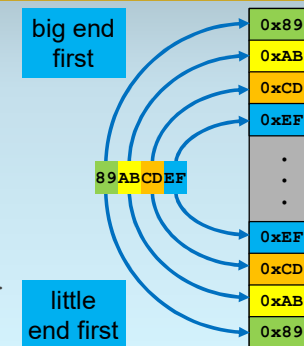
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Two Choices for Endianness

Here's a register.
Here's memory.
Which way are the bytes written?
The upper form is called **big endian**.
The lower form is called **little endian**.

big end first

`89ABCDEF`

little end first

```
0x89
0xAB
0xCD
0xEF
 .
 .
 .
0xEF
0xCD
0xAB
0x89
```

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