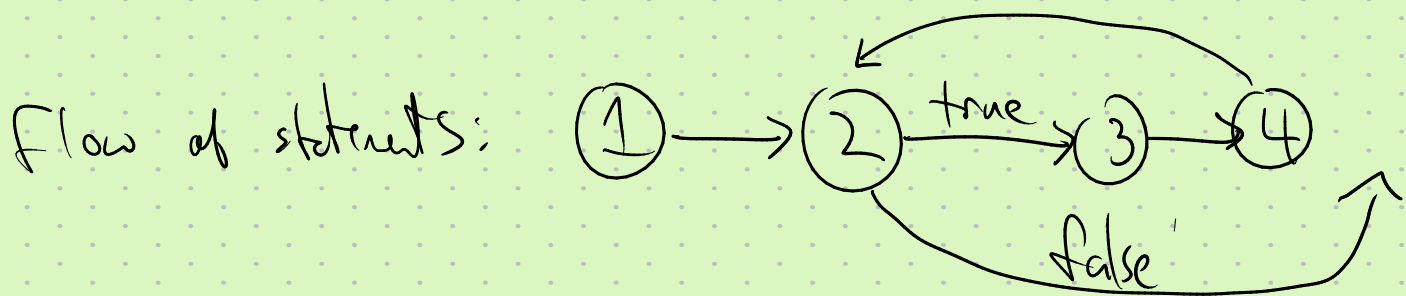


Today: for loops + examples.

Basic structure:

```
for (①; ②; ④) {  
    ③  
}
```

- ① - initialization. Can declare new variables here!
- ② - boolean expr.
- ③ - arbitrary statements to do while ② is true
- ④ - "update"



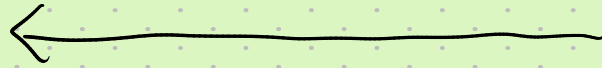
Exercise: find the greatest common divisor of two integers (non-negative).

E.g., $\text{gcd}(12, 18) = 6$.

Strategy? Let's try a "brute force" approach:
come up a list of candidates for $d = \text{gcd}(n, m)$.

Then test each one for being a common divisor.
Keep the largest one.

Candidates: $1, 2, \dots, \min(n, m)$



$$\underline{n \% d == 0 \ \&\& \ m \% d == 0}$$