COMP90041

Programming and Software Development

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Lab 3

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Switch

- `switch` statement chooses one of several cases based on an `int`, `short`, `byte`, or `char` value
- As of Java 7, it can also be a `String`: more useful
- Form:

```
switch (expr) {
  case value1:
    statements...
    break;
  :
  case valuen:
    statements...
    break;
}
```

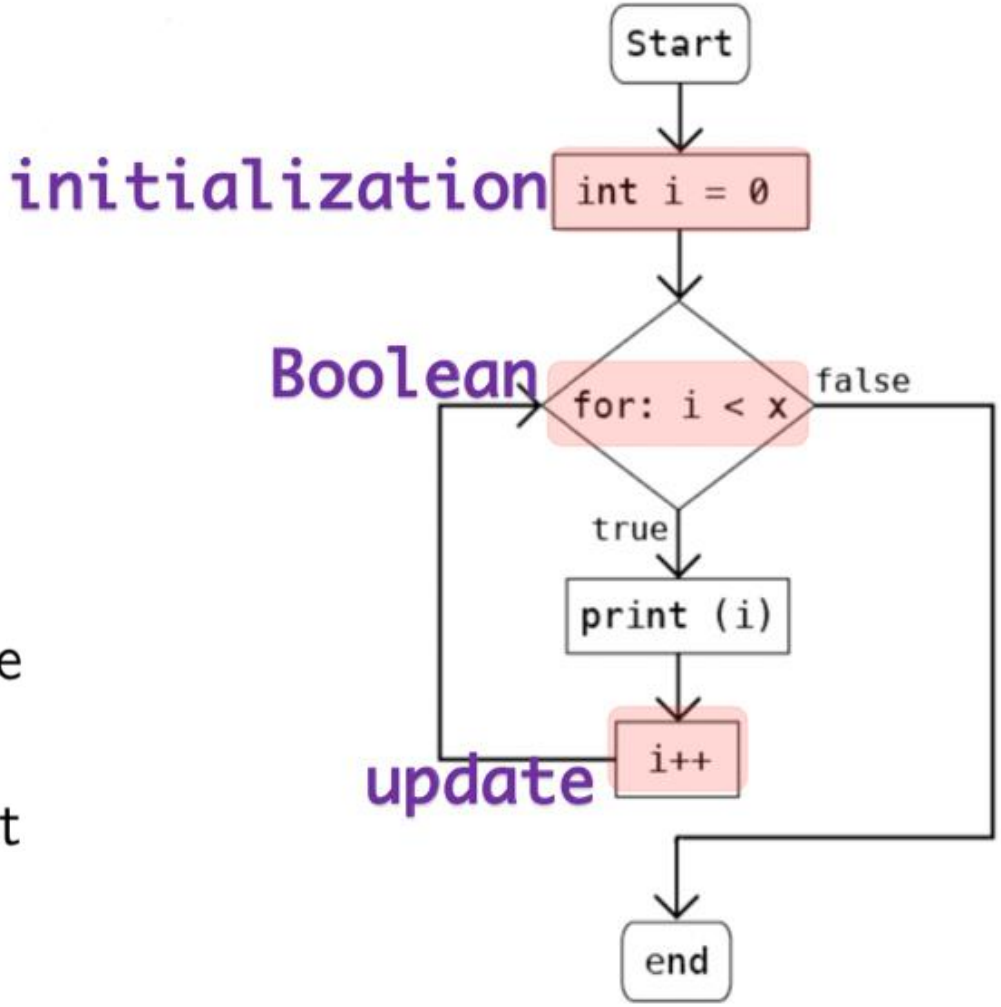
Print angle based on direction N,S,E,W

POP QUIZ

for loop

Print nums 0-5

```
private static void printNumbers(int x) {
    for (int i = 0; i < x; ++i) {
        System.out.println(i);
    }
}
```



- Variables declared in *init* part are scoped to the for: not available after the loop
- But you can declare variable before loop, and just initialise it in the *init* part

while and do-while

while loop

```
while (Boolean_Expression) {
      Statement 1;
      Statement 2;
      :
      Statement last;
}
```

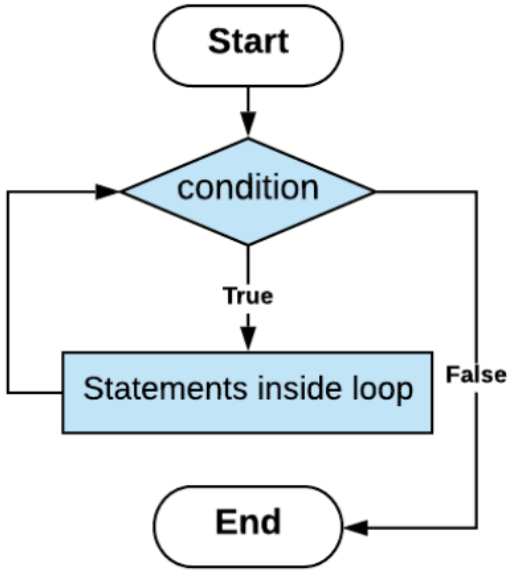
do-while loop

```
do {
      Statement 1;
      Statement 2;
      :
      Statement last;
} while (Boolean_Expression);
```

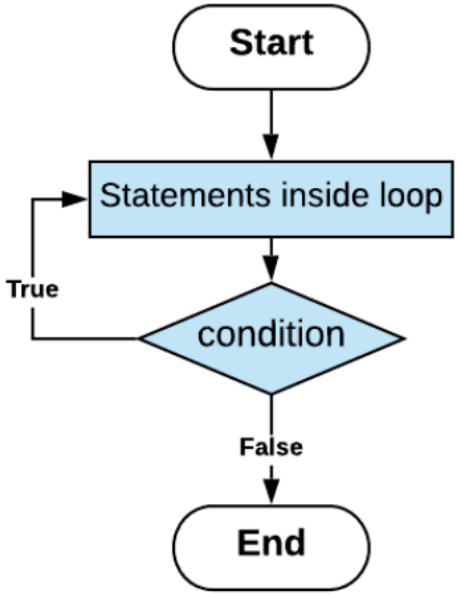
while and do-while

```
private static void printNumbers(int x) {
    int i = 0;
    while (i < x) {
        System.out.println(i);
        ++i;
    }
}
```

while loop



do-while loop



- `while` executes *`Statement`* zero or more times
- `do while` executes *`Statement`* one or more times

break and continue

POP QUIZ

- Inside a `for`, `while` or `do while` loop, a `break` terminates the (innermost) loop immediately
- This is useful inside an `if` inside a loop
- A `continue` statement immediately returns to the top of the innermost loop and continues from there

```
for (int i = 0; i < 10; ++i) {
    if (i == 4) {
        continue;
    }
    System.out.println(i);
}
```

```
for (int i = 0; i < 10; ++i) {
    if (i == 4) {
        break;
    }
    System.out.println(i);
}
```