CSE 11
Accelerated Intro to Programming
Discussion Section 6

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This discussion is being recorded

Logistics

- PA5 due today at 11:59PM
- PA6 Released
- Exam this week - Thursday 8am - Sunday 8am (PST)

For-in loops

- **run the body of their loops once per element in a given array**
- **follows the order that they appear in the array, with the "loop variable" assigned to that element**
- **Their syntax looks like:**

```
for (/* element type */ /* variable name */: /* array */) {

    /* loop body */

}
```

Example :

```
String[] messages = {"Hello", "CSE11"};



for (String message: messages) {

    System.out.println(message);

  }
```
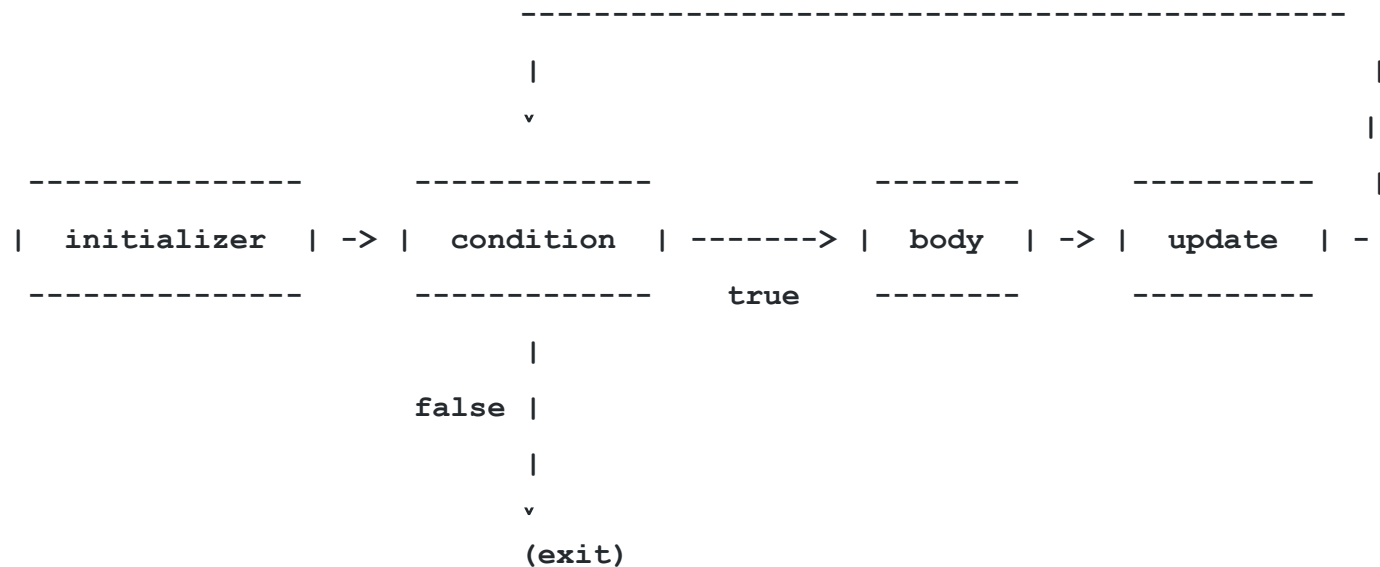
prints

```
Hello

CSE11
```

Counted for loops

- **More fine grained control compared to for-in loops - these are not limited to running once per element in an array**
- **Their syntax looks like:**

```
for (/* initializer */; /* condition */; /* update */) {
    /* body */
  }
```

-

```
                                ---------------------------------------------
                                |                                           |
                                v                                           |
    --------------      -------------              --------       ----------  |
   | initializer | -> |  condition  | -------> |  body  | -> |  update  | -
    --------------      -------------    true    --------       ----------
                             |
                       false |
                             |
                             v
                          (exit)
```

Counted for loops

- **body of counted for loops contain other can contain multiple Java statements, including multiple method calls, variable definitions and updates, if statements, and even other loops**

```
// Start with the top header of the table
String result = "\t1\t2\t3\t4\t5\n";

for (int i = 1; i <= 5; i += 1) {
    // Print the left header
    result += i;

    // Print the row
    for (int j = 1; j <= 5; j += 1) {
        result += "\t" + (i * j);
    }

    // Add a newline to finish the row
    result += "\n";
}

System.out.println(result);
```

Prints the times table from 1 to 5 to the terminal:

	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

PA6

- https://github.com/CSE11-SP21-Assignments/cse-11-sp21-pa6-starter

Thanks!