LOOPS

Iteration: while, for

Recall building blocks

- Sequence of instructions
  - Assignment
  - I/O
    - alert
    - prompt
    - confirm
    - document.write
- Selection
- Iteration
- Sub-routine (suspend and resume)
Loops: while

- Example:
  - Stir until smooth

```javascript
var count = 0;
while (count < 10) {
    alert(count);
    count++;
}
```

Reserved keyword

Exercise

```javascript
var n = prompt("Please enter number 0 … 100");
while (n < 0 || n > 100) {
    alert("Error; try again.");
    n = prompt("Please enter number 0 … 100");
}
Alert("Thank you for entry “ + n);
```

- What does this do?
Another exercise

```javascript
var qCount = 0;
while (change >= 25) {
    qCount++;
    change = change - 25;
}
```

- What does this do?
- What is qcount?
- What is the value of change at the end?
- Note:
  - After loop, change is first value that caused test to fail
  - Not the last successful value!

Loops: for

```javascript
var i = 0;
while (i < 10) {
    ...
    i++;
}
```

- Counting loops are (so) very common
  - Have special loop construct for these
    ```javascript
    for (var i = 0; i < 10; i++) {
        ...
    }
    ```
Example: for

```javascript
var sum = 0;
for (var i = 0; i < 10; i++) {
    sum = sum + i;
}

What is `sum` at end of loop?
```

Exiting / Continuing

```javascript
if (x < 0) {
    document.write("This is a fatal input!<br>");
    exit(); // will exit from current JS section
}

...

for (var i = 0; i < 10; i++) {
    if (i == 5)
        continue; // will skip to next iteration
        // of inner-most loop
    sum = sum + i;
}
```