Loops: While Loops

• while is similar to if but while repeatedly "loops back" and executes the statement until the expression is false.

• General format of a while loop:
  
  setup statement
  while (expression) {
    body statement(s)
    update statement(s)
  }

Loops: For Loops

• for loops are a "condensed" version of a while loop.

• General format of a for loop:
  
  for (setup; expression; update) {
    body statement(s)
  }
For vs. While

This while example

```c
i = 100; // setup
while (i >= 0) { // expression
    printf("%d\n", i);
    --i; // update
}
```

is equivalent to

```c
for (i = 100; i >= 0; --i) {
    printf("%d\n", i);
}
```

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Read Input: Exercise

Modify the code below to print out the average of the input. For example, if the input is 1, 2, 3, 2, then the program should print out 2.

```c
int main(void) {
    int n = 0;
    while (1) {
        n = read_int();
        if (n == READ_INT_FAIL) {
            break;
        }
    }
}
```

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Loop: Exercise

```
// draw_circle(size): draws a circle inside of a square
//    with dimensions (size * 2 + 1)
// Requires: size >= 1
// Effects: produces output
```

There is a simple example of the output in "simple.expect"
Piazza Etiquette

Gold Questions
Do not ask questions regarding the implementation of functions within gold questions. Only ask questions which clarify your understanding of the assignment explanation.

Black Questions
You can ask questions regarding the implementation of functions within black questions. However, please do not post your code publicly on Piazza.

Piazza Mechanics

- Official Assignment Posts
- Searching for similar questions
- Making private posts