Tutorial 3

- Loops
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:

```java
for (setup; expression; update) {
    body statement(s)
}
```
For vs. While

This \texttt{while} example

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

is equivalent to

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