Repeated decisions using \textbf{for}

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The For-Loop

For-loops and while-loops are very similar; you can turn any while-loop into an equivalent for-loop and vice versa.

initialization
while (boolean statement) {
    perform action(s)
    update
}

for (initialization; boolean statement; update) {
    perform action(s)
}
The For-Loop

```java
for (initialization; boolean statement; update) {
    Perform Action(s)
} //Go back to “top” of loop (evaluate boolean statement again)
//Rest of Program
```
**For Vs While Example**

```cpp
int count = 1;       //initialization
while (count <= 10) { //test
    cout << count << " ";
    ++count;           //update
}
```

**Output (For Both Loops)**

1 2 3 4 5 6 7 8 9 10
When To Use One Or The Other

While you can convert any while-loop into an equivalent for-loop and any for-loop into an equivalent while-loop, in this course, we recommend the following:

- Using **while-loops** when you don't know when something will stop (e.g. forcing the user to enter a legal input value).
- Using **for-loops** when you know when something will stop (e.g. sum of all numbers up to $n$, where $n$ is given by the user).