

The Bounds Precondition

The bounds make sure that you exit the loop at the correct time. Next you have to that make it possible to **enter** the loop. Step asks "How do I get out?", while Step 2 asks: "How do I get into the loop?" Look at the bounds condition:

```
while letter is not a period
```

1. **What** is letter?
2. **Where** did it come from?
3. **How** did it get a value that I can check?

If you were to write the bounds in C++, using your editor, your code would not compile because it refers to variables which don't yet exist. **Bounds precondition** statements **create the variables** used in the test, and **initialize** each to some meaningful state.

```
// Step 2: The bounds precondition
str <- string supplied to the problem
pos <- 0
letter <- str.at(pos)
while letter is not a period
{
    // Inside the loop
}
```

In our example, **str** is the string we've been given. We need two variables, **pos** which is the position (or index) of the character we want to examine, and **letter**, initialized with the first character in **str**.

If **letter** does not contain the first character in **str**, then you have no assurance that you will **ever enter the loop**— the value of **letter** will be unknown. (In C++ it will be some random value.)



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