

Loops and While Loop

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Objectives

- To write programs for executing statements repeatedly using a **while** loop (§5.1-5.2).

Outline

- Loops
- While Loop
- Example problem
 - Addition Quiz

Motivating Problem

- Suppose that we want to print "Welcome to Java!" 100 times, how do we do it?
- Write 100 times

```
System.out.println("Welcome to Java!");
```

1st Attempt

100
times

```
System.out.println("Welcome to Java!");  
System.out.println("Welcome to Java!");  
System.out.println("Welcome to Java!");  
System.out.println("Welcome to Java!");  
System.out.println("Welcome to Java!");  
System.out.println("Welcome to Java!");  
...  
...  
...  
System.out.println("Welcome to Java!");  
System.out.println("Welcome to Java!");  
System.out.println("Welcome to Java!");
```

2nd Attempt – Loops!

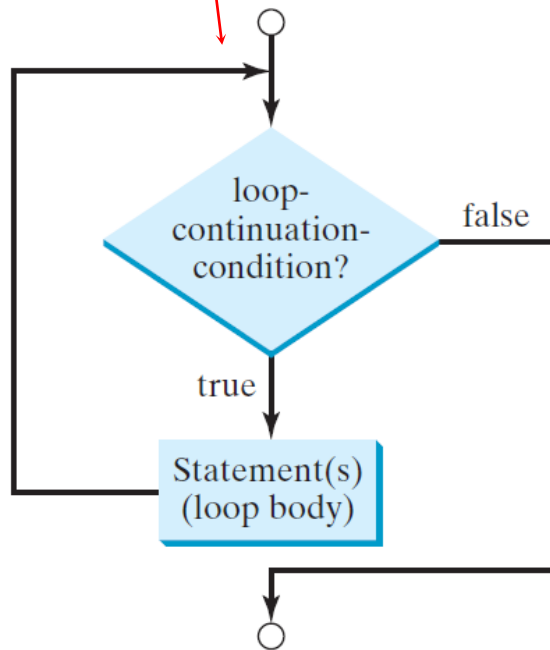
- Java provides control statements to execute a block of code repeatedly.
- Use the while loop statement

2nd Attempt – Use While Loop

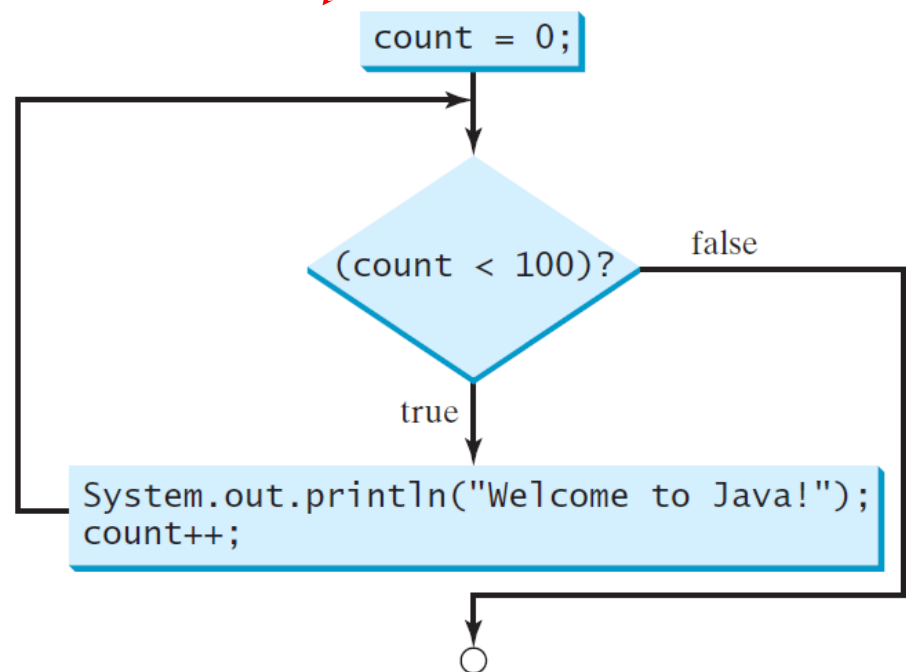
```
int count = 0;
while (count < 100) {
    System.out.println("Welcome to Java");
    count++;
}
```

Flow Chart of While Loop

```
while (loop-continuation-condition) {  
    // loop-body;  
    Statement(s);  
}
```



```
int count = 0;  
while (count < 100) {  
    System.out.println("Welcome to Java!");  
    count++;  
}
```



Questions?

Problem. AdditionQuiz

- To teach kids to learn addition, consider to write a program that prompts a pupil to enter an answer for a question on addition of two single digits.
- Using a loop, we can now write the program in the way that lets the user enter a new answer until it is correct.

Questions?