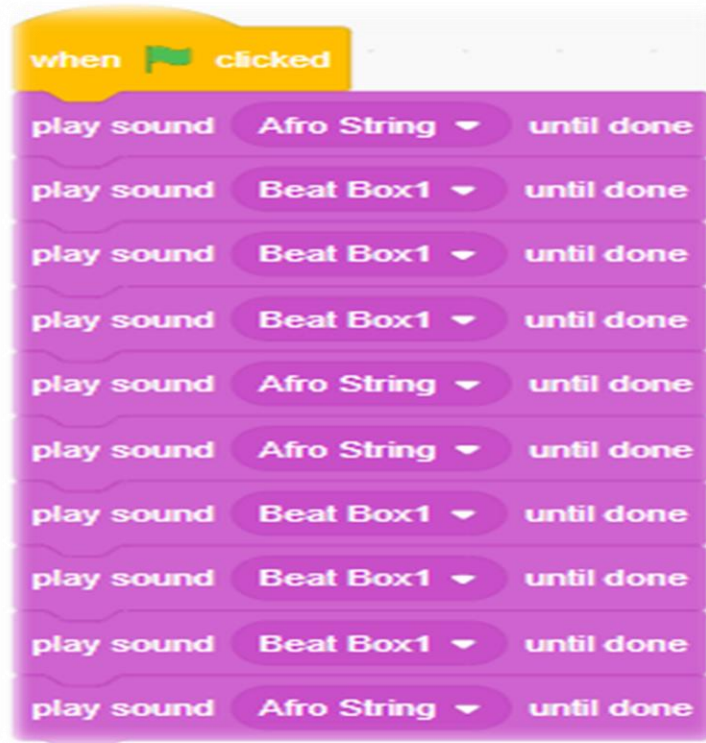


Playing Multiple Soundtracks



Playing Soundtracks



How can we use Java to perform this function?

Loops in Java

Entry
Point



Exit Point

Working with Looping Constructs

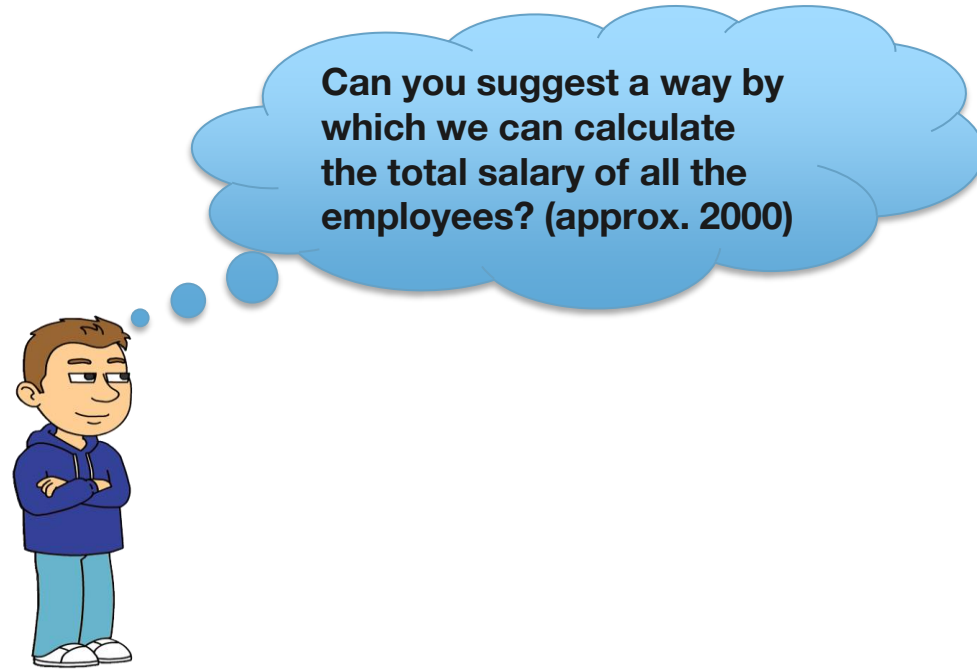




Learning Objectives

- Define loops in Java
- Identify situations where *for*, *while* and *do...while* loops are used
- Create *for*, *while* and *do...while* loops
- Use *nested* loops
- Describe *infinite* loops
- Explain *for-each* loop

Calculating the Salary of Employees



Different Types of Loops

In Java, looping is a feature that enables you to execute the same set of instructions several times.

Types of Loops

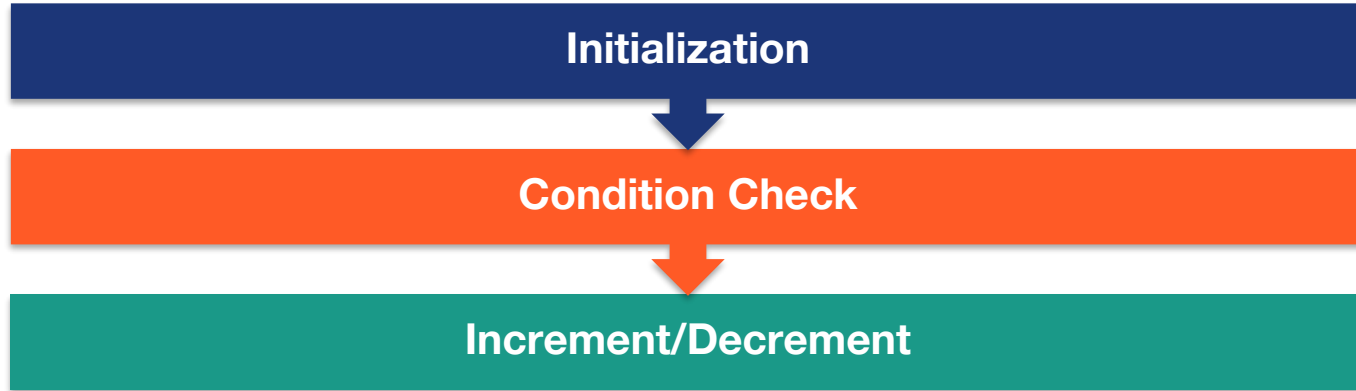
while

for

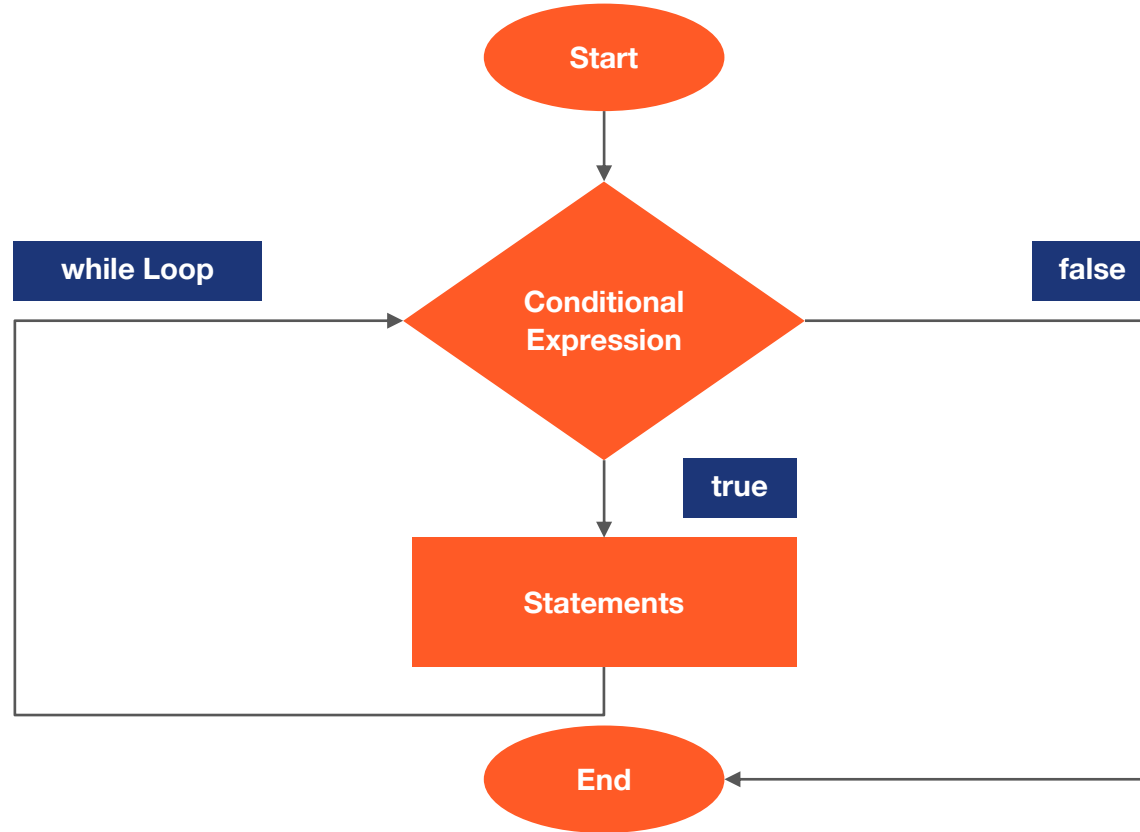
do...while

Phases of Loops

There are three phases of loops



“while” Loop



“while” Loop

The syntax of the “while” loop is:

```
while (BoolExpr)
{
    statements; //executed as long as
    BoolExpr is true
}
```

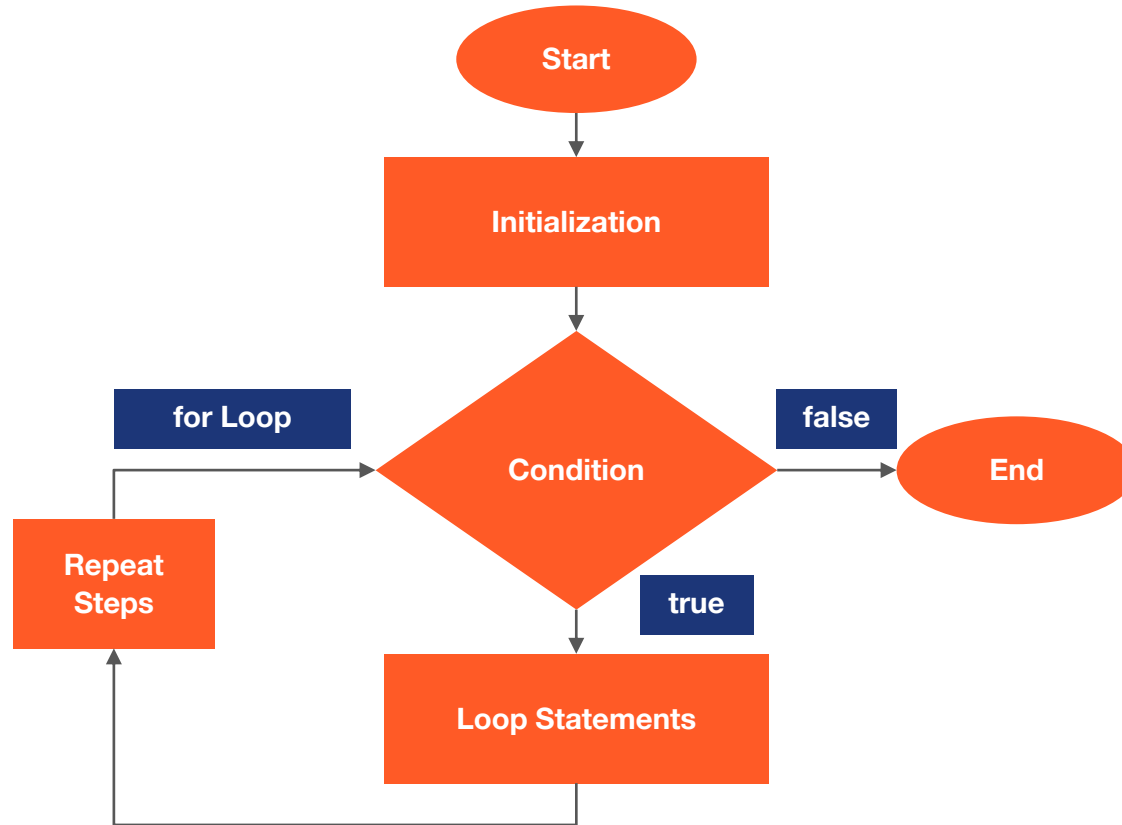
Interactive Demo

Write a program that displays the sum of all the digits of an integer entered by the user.

DEMO



“for” Loop



“for” Loop

The syntax of the “for” loop is:

```
for(InitializationExpr; TestExpr; IterationExpr)
{
    statement_1
    statement_2
}
```

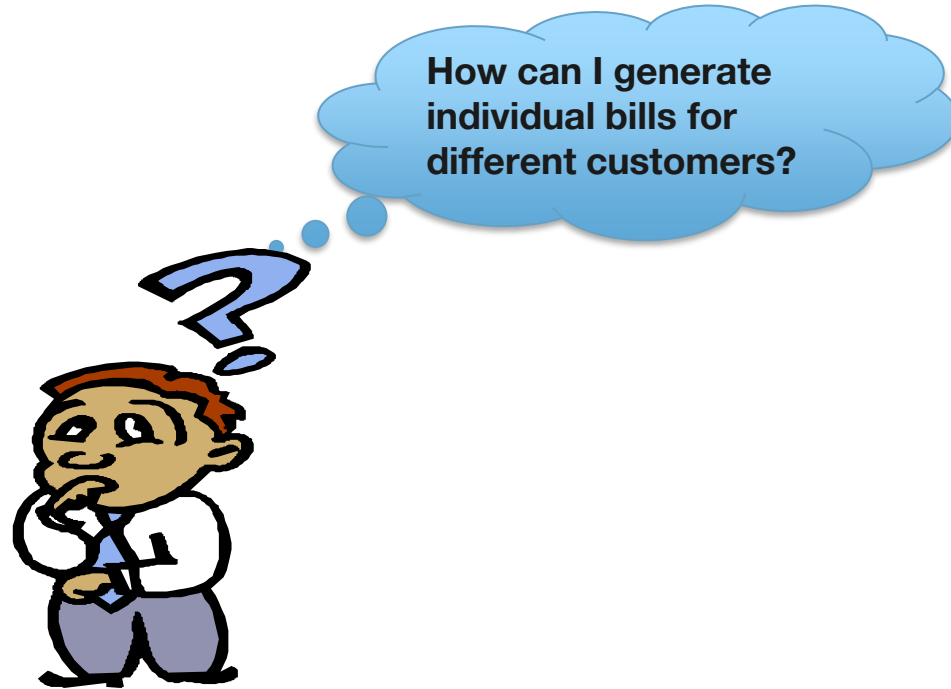
Interactive Demo

Use “for” loop to write a program that displays all even numbers between 1 to 1000.

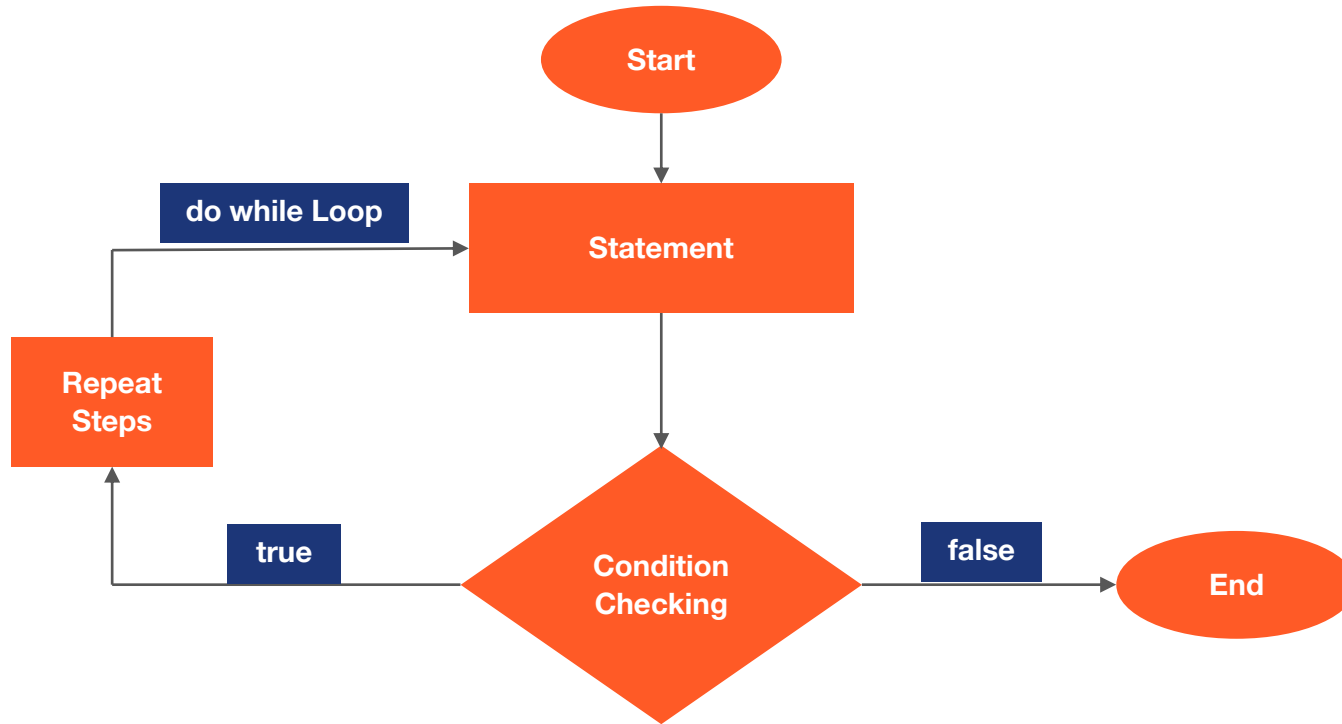
DEMO



“do...while” Loop



“do...while” Loop



“do...while” Loop

The syntax of the “do...while” loop is:

```
do
{
    statements;
}
while (BoolExpr) ;
```

Interactive Demo

Write a program that accepts a series of numbers from a user and stops by displaying an appropriate message when the sum of the numbers exceeds 999.

DEMO



Nested Loop

The syntax of the “nested” loop is:

```
for(InitializationExpr; TestExpr; IterationExpr)
{
    statement_1
    for(InitializationExpr; TestExpr; IterationExpr)
    {
        statement_1
        statement_2
    }
}
```

Interactive Demo

Write a program in Java that displays the below pattern.

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

DEMO



Infinite Loop

The syntax of the infinite loop is:

```
for(;;)  
{  
    statement1  
    statement2  
}
```

“For-each” Loop

The syntax of the “for-each” loop is:

```
for(datatype var; varArray)
{
    statement1
    statement2
}
```

Key Takeaways

- Importance of loops in Java
- The function of *for*, *while*, and *do...while* loop
- Implement *for*, *while*, and *do...while* loop in programs
- Use *nested* loop in programming
- Identify *Infinite* loop and enhanced for loop

