

## WHILE LOOPS

**OBJECTIVE:** Students will gain experience writing classes that contain methods that use While loops.

1. Write a class named `WhileLoops_YourName.java`
2. In the class write a method named `printWhileSquareNumber()` the method will have return type `void`
3. The method should use a while loop to generate and print out the first 10 square numbers
  - a. Hint: the formula for creating a square number is: `squareNum = num * num;`
  - b. These numbers should print: 1, 4, 9, 16, 25, 36, 49, 81, 100
  - c. Don't do the math in the print method
4. Write a second method in the class named `printWhileTimes()` the method will have return `void`
  - a. Use an inner and outer (nested)while loops to generate the times tables for numbers 1 through 10
  - b. **Hint:** you may need to use both `System.out.println()` and `System.out.print()`
  - c. Some formatting characters are `'\t'` (tab) `'\n'` (new line)
  - d. Do the math first then worry about the formatting
5. In the **main()** method create a `WhileLoops_YourName` object called `testObject`
6. Call both the `printWhileSquareNumber ()` and `printWhileTimes ()` methods with the `testObject`

```
1 2 3 4 5 6 7 8 9 10
2 4 6 8 10 12 14 16 18 20
3 6 9 12 15 18 21 24 27 30
4 8 12 16 20 24 28 32 36 40
5 10 15 20 25 30 35 40 45 50
6 12 18 24 30 36 42 48 54 60
7 14 21 28 35 42 49 56 63 70
8 16 24 32 40 48 56 64 72 80
9 18 27 36 45 54 63 72 81 90
10 20 30 40 50 60 70 80 90 100
```

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## FOR LOOPS

**OBJECTIVE:** Students will gain experience writing classes that contain methods that use For loops.

1. Write a class named `ForLoops_YourName.java`
2. In the class write a method named `printForSquareNumber()` the method will have return type `void`
3. The method should use a for loop to generate and print out the first 10 square numbers
  - a. Hint: the formula for creating a square number is: `squareNum = num * num;`
  - b. These numbers should print: 1, 4, 9, 16, 25, 36, 49, 81, 100
  - c. Don't do the math in the print method
4. Write a second method in the class named `printForTimes()` the method will have return `void`
  - a. Use an inner and outer (nested)for loops to generate the times tables for numbers 1 through 10
  - b. **Hint:** you may need to use both `System.out.println()` and `System.out.print()`
  - c. Some formatting characters are `'\t'` (tab) `'\n'` (new line)
  - d. Do the math first then worry about the formatting
5. In the **main()** method create a `ForLoops_YourName` object called `testObject`
6. Call both the `printForSquareNumber ()` and `printForTimes ()` methods with the `testObject`

```
1 2 3 4 5 6 7 8 9 10
2 4 6 8 10 12 14 16 18 20
3 6 9 12 15 18 21 24 27 30
4 8 12 16 20 24 28 32 36 40
5 10 15 20 25 30 35 40 45 50
6 12 18 24 30 36 42 48 54 60
7 14 21 28 35 42 49 56 63 70
8 16 24 32 40 48 56 64 72 80
9 18 27 36 45 54 63 72 81 90
10 20 30 40 50 60 70 80 90 100
```

### REMEMBER:

- The inner loop always runs to completion first
- In the structure of a for loop you set the counter variable