Nested Loops

CSC 116 – Section 002
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Nested Loops

- Used to work with x-dimensional data
- For each value in the outer loop all values of the inner loop are executed
- Need to use a different control variable name for each loop (most common i and j)
- However, you can use the control variable of the outer loop in the inner loop (but you can't use the control variable of the outer loop in the inner loop unless you declare the variable before the inner loop).

Nested Loop Example

```java
public void nestedForLoopEx1() {
    System.out.println("   1   2   3   4   5");
    int COL_WIDTH = 5;
    for(int i = 1; i <= 5; i++) {
        System.out.print(i);
        for(int j = 1; j <=5; j++) {
            int x = i * j;
            String output = "" + x;
            while(output.length() < COL_WIDTH)
                output = " " + output;
            System.out.print(output);
        }
        System.out.println("");
    }
}
```

Nested Loop Example 2

```java
public void nestedForLoopEx2() {
    for (int x = 1; x < 10; x++) { //Print line
        for (int y = 1; y <=x; y++) {
            System.out.print(y);
        }
        System.out.println();
    }
}
```

References

- Jason Schwarz's Lecture 13 slides: http://courses.ncsu.edu/csc116/