Snippet 11:

```
public class IncorrectLoopUpdate {
   public static void main(String[] args) {
      int i = 0;
      while (i < 5) {
         System.out.println(i);
         i += 2; // Error: This may cause unexpected results in output
      }
   }
}
// Error to investigate: What will be the output of this loop? How should the loop variable be updated to achieve the desired result?
```

Snippet 12:

```
public class LoopVariableScope {
   public static void main(String[] args) {
      for (int i = 0; i < 5; i++) {
         int x = i * 2;
      }
      System.out.println(x); // Error: 'x' is not accessible here
   }
}
// Error to investigate: Why does the variable 'x' cause a compilation error? How does scope
```

SECTION 2: Guess the Output

Instructions:

1. **Perform a Dry Run:** Carefully trace the execution of each code snippet manually to determine the output.
2. **Write Down Your Observations:** Document each step of your dry run, including the values of variables at each stage of execution.
3. **Guess the Output:** Based on your dry run, provide the expected output of the code.
4. **Submit Your Assignment:** Provide your dry run steps along with the guessed output for each code snippet.

Snippet 1:

```
public class NestedLoopOutput {
   public static void main(String[] args) {
      for (int i = 1; i <= 3; i++) {
         for (int j = 1; j <= 2; j++) {
            System.out.print(i + " " + j + " ");
         }
         System.out.println();
```

```
        }
    }
}
// Guess the output of this nested loop.
```

Snippet 2:

```
public class DecrementingLoop {
    public static void main(String[] args) {
        int total = 0;
        for (int i = 5; i > 0; i--) {
            total += i;
            if (i == 3) continue;
            total -= 1;
        }
        System.out.println(total);
    }
}
// Guess the output of this loop.
```

Snippet 3:

```
public class WhileLoopBreak {
    public static void main(String[] args) {
        int count = 0;
        while (count < 5) {
            System.out.print(count + " ");
            count++;
            if (count == 3) break;
        }
        System.out.println(count);
    }
}
// Guess the output of this while loop.
```

Snippet 4:

```
public class DoWhileLoop {
    public static void main(String[] args) {
        int i = 1;
        do {
            System.out.print(i + " ");
            i++;
        } while (i < 5);
        System.out.println(i);
    }
}
// Guess the output of this do-while loop.
```

Snippet 5:

```
public class ConditionalLoopOutput {
   public static void main(String[] args) {
      int num = 1;
      for (int i = 1; i <= 4; i++) {
         if (i % 2 == 0) {
            num += i;
         } else {
            num -= i;
         }
      }
      System.out.println(num);
   }
}
// Guess the output of this loop.
```

Snippet 6:

```
public class IncrementDecrement {
   public static void main(String[] args) {
      int x = 5;
      int y = ++x - x-- + --x + x++;
      System.out.println(y);
   }
}
// Guess the output of this code snippet.
```

Snippet 7:

```
public class NestedIncrement {
   public static void main(String[] args) {
      int a = 10;
      int b = 5;
      int result = ++a * b-- - --a + b++;
      System.out.println(result);
   }
}
// Guess the output of this code snippet.
```

Snippet 8:

```
public class LoopIncrement {
   public static void main(String[] args) {
      int count = 0;
      for (int i = 0; i < 4; i++) {
         count += i++ - ++i;
      }
      System.out.println(count);
   }
```