Lab 3: Lamborghini Assignment

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SECTION 1: Error-Driven Learning Assignment: Loop Errors

Snippet 1

As we are decrementing i value, the condition would never be false. so the for loop would run infinitely. to avoid that, we should increment i

```
class HelloWorld {
    public static void main(String[] args) {
        for (int i = 0; i < 10; i++) {
            System.out.println(i);
        }

    }
}
```

Snippet 2

The assignment operator is used while defining condition. we should use relational operators as the output of condition must be a boolean value

```
public class IncorrectWhileCondition {
 public static void main(String[] args) {
     int count = 5;
     while (count != 0) {
         System.out.println(count);
         count--;
```

```
      }
 }
}
```

Snippet 3

The loop got executed infinitely because of the increment of number in do block. so, need to change the condition in while loop.

Snippet 4

To only print the numbers from 1 to 9, we have to change ≤ operator to < operator

```
public class OffByOneErrorForLoop {
 public static void main(String[] args) {
 for (int i = 1; i < 10; i++) {
 System.out.println(i);
 }
 }
}
```

Snippet 5

The loop given is infinite loop. we should decrement the values to get meaningful output

```
public class WrongInitializationForLoop {
 public static void main(String[] args) {
 for (int i = 10; i >= 0; i--) {
 System.out.println(i);
 }
 }
}
```

Snippet 6

If we do not use paranthesis to define for loop block, it would consode only one statement as block instruction and rest other would be out of the block. So, we must use parenthesis.

```
for (int i = 0; i < 5; i++)
{
 System.out.println(i);
 System.out.println("Done");
}
```

Snippet 7

Loop variables must be initialised before using them in loops

```
class HelloWorld {
    public static void main(String[] args) {
        int count = 8;
         while (count < 10) {
            System.out.println(count);
            count++;
         }

    }
}
```

Snippet 8

We should change the condition and increment the number

```
public class OffByOneDoWhileLoop {
 public static void main(String[] args) {
 int num = 1;
```

```
 do {
 System.out.println(num);
 num++;
 } while (num <= 6);
 }
}
```

Snippet 9

We must increment numbers by 1 so that program would not skip the numbers to be printed

```
public class InfiniteForLoopUpdate {
 public static void main(String[] args) {
 for (int i = 0; i < 5; i += 1) {
 System.out.println(i);
 }
 }
}
```

Snippet 10

The assignment operator is used while defining condition. we should use relational operators as the output of condition must be a boolean value

```
public class IncorrectWhileLoopControl {
 public static void main(String[] args) {
 int num = 10;
 while (num == 10) {
 System.out.println(num);
 num--;
 }
 }
}
```

Snippet 11

We must increment numbers by 1 so that program would not skip the numbers to be printed

```
public class IncorrectLoopUpdate {
 public static void main(String[] args) {
 int i = 0;
 while (i < 5) {
 System.out.println(i);
 i += 1; // Error: This may cause unexpected results in out
put
 }
 }
}
```

Snippet 12

Variables initialized in blocks are not accessible outside of the block.

SECTION 2: Guess the Output

Snippet 1

i	j	Output
1	1	1 1
	2	1 2
2	1	2 1
	2	2 2
3	1	3 1
	2	3 2

Output:

1 1 1 2

2 1 2 2

3 1 3 2

Snippet 2

i	total
5	4
4	7
3	10
2	11
1	11

Snippet 3

Count
0
1
2

0 1 2 3

Snippet 4

i	print
2	1
3	2
4	3
5	4

1 2 3 4 5

Snippet 5

i	num
1	0
2	2
3	-1
4	3

Snippet 6

int y = ++x(6) - x--(6) + --x(4) + x++(4);

Snippet 7

result = ++a (11) * b— (5) - —a(10) +b++(4)

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Snippet 8

COUNT	I
-2	0
-4	3
	6