

Dr. Hey and Dr. Yo



Open your IDE and create a new project called *DrHeyDrYo*.

Create a Main.java class and copy/paste the Main.java code in the unit page in your class file.

Run the program and **fix any syntax errors** if there are any.

Code Analysis

Analyse the code and answer the following questions

How many global variables are there?	
One of the global variables uses the final modifier. What effect will this have on the variable?	
Why doesn't the local variable in the scream function need to be global?	
Do you understand how the modulus operator, %, is being used in the program (Yes/No)?	
What is the datatype of the first parameter taken by the <code>updateVolume</code> function?	

Task 1

In the **game** function the following code exists:

```
while(heyVol < targetVolume && yoVol < targetVolume) {  
    scream();  
}
```

Using your own words, explain how the loop will **terminate**.

Task 2

In the **game()** function, create a local variable called **screamCount** and assign it a value of 0.

Inside the **game()** function's while loop, after **scream()** has been called, add 2 to

screamCount ie: `screamCount = screamCount + 2;`

We are now monitoring how many screams happen in the game!

Task 3

Let's redesign the **determineWinner()** function. When it is called, we send it the

screamCount data as a parameter. The **determineWinner** function will use this in a sentence eg:

The 2 doctors screamed <screamCount> times!

And then continue to determine the winner as before.

Task 4

Run the game 5 times and complete the table:

Run Number	screamcount
1	
2	
3	
4	
5	

Task 5

Explain why `screamCount` is different every time we run the program

Summary

So we can see that the game **loop** repeats a different number of times each time we run the code!

If we know how many times we need to repeat some code, we can use a **for loop** eg:

```
for(int i = 0; i<10; i++){  
    #do something 10 times  
}
```

But if we want to repeat some code while a certain condition is true, we should use a while loop eg:

```
//give the loop control variable a starter value
```

```
heyVol = 0;
```

```
while(heyVol < 100) {
```

```
    System.out.println(heyVol);
```

```
    heyVol = heyVol + (int) (Math.random()*5)+1; //update the control variable
```

```
}
```

Look at the code. Can you predict how many times the loop will iterate?