1. *the process (i.e. reading integer number) must get executed at least once.*
2. *the verification occurs after point (1)*

The following piece of code counters prints out the first 10 positive numbers that are generated randomly. The loop must exist after 10 positive numbers or at the first negative number generated.

Try to code it using do-while and discuss the difference.

```
Random rand = new Random();
int counter = 0;
int number = rand.nextInt();
if (number > 0) {
    counter++;
    System.out.println(number);
}
while (number>=0 && counter < 10) {
    number = rand.nextInt();
    if (number > 0) {
        counter++;
        System.out.println(number);
    }
}
```

Week 7 Lab Tasks

Click HERE to download the lab application shell

while loop questions...

L1 (0.1 marks)

Write code to simulate repeatedly rolling a pair of dice. Count and display how many of these rolls it takes before both die (singular of dice) have the same face value in a single roll.

L2 (0.4 marks)

Write code to perform the simulation from **L1** many times to establish a **long term average** number of rolls required.

Display the long term average**.** Does this agree with a probability analysis? Use nested **while** ... loops even though **for** ... loops are a more appropriate control structure in this case. Why are for ... loops more appropriate?

L3 (0.3 marks)

Find and display the **index** of the **first occurrence** of a given String in an array of **String**(s). Allow for all array lengths including 0 (an empty array). Also, allow for the given String to be absent from the array.

When you code your loop make sure it maps to the appropriate loop pattern outline discussed in **T4**?

do-while loop question...

L4 (0.3 marks)

Write code that finds the average of the first 100 even positive random numbers. Your code should also print out the number of iterations it takes to get the average.

Note: To make your results easy to read and understand, consider to get random numbers in the range (0..1000) using nextInt(bound). Click HERE for more support.

for loop questions...

L5 (0.4 marks)

Assume you have an array of strings ***ar*** and a given string variable called '***value'***. Your code should print out: (1) the value (2) the number of occurrences and (3) **true** if the number of occurrences is more than one; **false** otherwise.

```
Example
ar=["David","Sally","Ellen","Adam","Sally"]
for value="Sally", the output=2 , true
for value="David", the output=1 , false
```

L6 (0.5 marks) (HD Students)

Write a piece of code that prints out the second-highest value in an array of integers.

Note: you should not use any build-in methods we have not introduced.

> *Assumption: in all cases, the length of the input array is greater than or equal to 2.*

Eample:

input: [2,6,3,9,0]

output: 6