Now that we got housekeeping out of the way let us go over loops. A loop is an element that allows us to reuse a snippet of code over and over again. Usually these loops will have a condition (instruction as to when it should end) attached. This will determine when the loop should stop so that the code does not run forever.

If a basketball🏀 coach tells one of his players to do push ups (but does not tell the player how many) the player will keep doing push ups till the coach tells him to stop. However, what if the coach never tells the player when to stop😰. This would be a problem as the player would end up straining his body after infinite push ups.
This shows the importance of conditions (what we learned in the conditional exercises) and how it helps tell the computer to stop or continue using code.
For the purpose of this exercise we will be focusing on a specific type of loop called a while loop.

To understand what and how a while loop works it is best to show you.

```
1| number = 0
2| while number < 10:
3|       number = number + 1
```

Here is a bit of code. The first line has a variable named “number” with the value 10. We will use this as a “counter variable”. A counter variable will help us keep track how many times the loop will run.

Line 2 contains a while loop. To the left of the word “while” there is a conditional statement (number < 10). This line of code is basically stating that the while loop will continue if the variable, number, is less than 10.

Line 3 updates the counter variable (increases the value of number by 1). I.e. if “number = 4”. “number = number + 1” will make number change to 5.

All in all the code snippet should loop 10 times.

1.) How many times would this code piece loop?

```
1| number = 0
2| while number < 5:
3|       number = number + 1
```

a.) 10 times b.) 5 times c.) 0 times

2.) How many times would this code piece loop?

```
1| number = 3
2| while number < 5:
3|       number = number + 1
```

a.) 2 times b.) 12 times c.) 0 times

3.) How many times would this code piece loop?

```
1| number = 10
2| while number > 0:
3|       number = number - 1
```

a.) 2 times b.) 12 times c.) 10 times