Exercises - Session 5

In case you get stuck anywhere, don't be afraid to ask the coaches! They are here to help and will gladly explain everything to you!
Take notes during the exercises. Even if you never look at them again, they will help you memorise things!

Math quiz

In this exercise we are going to write a neat little math quiz game. Here's what it should do when it's all finished (things the user enters are **bold**):

```
$ ruby math_quiz.rb
Welcome to the math quiz!
Type 'quit' to quit if you've had enough ;)
What's 26 * 4?
43
Wrong!
What's 21 - 12?
9
Correct!
What's 87 - 67?
20
Correct!
What's 9 - 79?
-70
Correct!
What's 67 + 45?
quit
Good bye!
```

1. When the user launches the game, she is being greeted.

2. Next, the program poses a simple maths question (e.g. "What's 26 * 4?"). The two numbers are chosen randomly from the range 1 to 100. The operation is also chosen randomly. It's either addition, subtraction or multiplication.

3. The user can then enter their answer.

4. The game checks the answer and responds with either "Correct!" or "Wrong!".

5. The game loops until the user enters "quit".

At first, the task to implement something like that may seem daunting. As always, try to think about the smallest thing you can program which will get you closer to your goal. Do that, check that it's working and then move on with the next tiny step.

Typing game

Here's another little game for you to implement. Check out what it does (things the user enters are **bold**):

```
$ ruby typing_game.rb
Welcome to the typing game! How fast can you type?
Type 'quit' to quit if you've had enough ;)
country
country
You're typing at 195.08505199421438 characters per minute
snake
snake
You're typing at 183.86575820789616 characters per minute
opposite
opposite
You're typing at 172.54072554547548 characters per minute
yesterday
yesterdya
You mistyped!
distance
distance
You're typing at 214.31299509423258 characters per minute
meeting
meeting
You're typing at 198.11629294722118 characters per minute
tin
quit
Good bye!
```

Because this game involves a big list of words (taken from the Basic English vocabulary), you get a file to start with. You can download it here: typing_game.rb. Download and save this file and start implementing your game in there.

1. When the user launches the game, she is being greeted.

2. The game gives her a random word from a predefined array.

3. The user then types that word as quickly as possible (followed by the return key).

4. The game checks whether the entered word is spelled correctly (otherwise it answers with "You mistyped!")

5. The game measures the time it took the user to type the word and calculates the characters per minute from that value. It shows that value to the user.

6. The game loops until the user enters "quit".

Hint: You can get a timestamp of the current time in seconds (with digits after the comma) with this command: `Time.now.to_f`. Try it out in irb to see how it works!