Programming in Alice

practical test 2

# Overview

In this practical test you will use if statements, user interaction, random numbers and while loops to develop a Maths quiz. In the Maths quiz you will randomly generate simple Maths problems.

## Question 1

Create a new world with a quiz master. (Keep it simple – do not waste time setting up the world).

Create a new World method called **question 1**. In this question you will create a random Maths problem.

1. Create two local variables called **num1** and **num2** (both numbers). Assign a random number between 1 and 10 to each of these numbers (both numbers should be integers). **[2 marks]**
2. Create a variable called **guess**. Ask the user to enter the product of the two numbers.For example if the two numbers are 3 and 4, the program should ask: “What is the product of 3 and 4”. You will need to use a combination of the two string utility functions from the world object to construct the question to the user. Remember you need to ask the user for a number. The user’s response will be assigned to the **guess** variable. **[2 marks]**
3. Check whether or not the user’s guess is correct. If their guess is correct, then the Quiz Master should say “Correct”; otherwise the Quiz Master should say “Wrong”. **[2 marks]**

## Question 2

In this question you will use a while loop to allow the user to have multiple guesses for a quiz question until they get the correct answer.

Create a new world method called **question2**.

1. Next create a new variable in question2 called **numguesses**. Set the initial value for **numguesses**to 0. **[1 mark]**
2. Create two variables called **num1** and **num2**, and assign random numbers between 1 and 10 to each. Also create the guess variable and initialize to 0. **[1 mark]**
3. Use a while loop to repeatedly ask the user to enter a guess until they enter the correct answer. The while loop should check whether the guess equals the expected answer (i.e. num1\*num2). After getting the guess, check whether or not the user has answered correctly and provide feedback as described in step 3 of Question 1. **[2 marks]**
4. Increment the numguesses variable at the end of the loop. **[1 mark]**
5. Immediately after the while loop, your program should instruct the Quiz Master to say “The number of guesses was 5” (assuming numguesses has the value 5 upon exiting the loop). **[1 marks]**