



The following assignment is based on the following subjects:

- Loops
- Functions
- Lists



Write a program which will:

- 1) Generate basic math problems;
- 2) Present them to the user;
- 3) Accept the user's answers;
- 4) Decide whether the user's answers are correct or not;
- 5) Repeat steps (1) through (6) for as long as the user wishes to solve additional problems;
- 6) Generate a summary report which includes:
  - a) A list of problems answered incorrectly (if any)
  - b) A message indicating the overall success rate (correct/overall + %)



1) "Generate basic math problems"

- a) Every math problem should be in the form of: *number\_1 operator number\_2*

E.g.:  $12 + 9$

- b) Both numbers and the operator need to be picked randomly.

Hint 1: you can use the built-in *randint* function (found in the *random* package).

Hint 2: you may find the built-in *choice* function useful (also in the *random* package).

- c) To keep things simpler, the allowed operations are: addition, subtraction and multiplication.

- 2) “Present them to the user”. E.g.:

$$3 * 21 = ?$$

- 3) "Accept the user's answers"
  - a) Use the built-in `raw_input` function.
  - b) Keep in mind that the input returns as a string, and may not represent a valid number.
- 4) "Decide whether the user's answers are correct or not"
  - a) Display the user some feedback on his / her answer.
- 5) "Repeat steps (1) through (6) for as long as the user wishes to solve additional problems"
  - a) Ask the user whether he / she would like to try another problem.
  - b) Acceptable answers are: "yes", "no", "Yes", "No", "y", "n", "Y", "N" and "" (No).
- 6) "Generate a summary report"
  - a) "A list of problems answered wrong (if any)". E.g.:
 
$$23 - 19 = 5 \text{ (4)}$$

$$1 + 1 = 3 \text{ (2)}$$
  - b) "A message indicating the overall success rate". E.g.:
 

You have answered correctly 3 out of 5 problems (60%)



## Geek out

Add division as a mathematical operation.

You can use the built-in `round` function to round the results (2 decimal digits).

Don't forget – you can't divide by 0...

