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Review test Intro

PYTHON ACADEMY / PROJECT 2: PICK YOUR FAVOURITE / REVIEW TEST INTRO

Ok now! We are almost ready to get to the project part.

However, before we set you off to dive into it, you should really go through the review test that is about to follow. It will test your knowledge from the previous 4 lessons. Depending on your score, you should consider revision of the particular lesson.

Good luck with the test as well as the project!

Review test 5-8

PYTHON ACADEMY / PROJECT 2: PICK YOUR FAVOURITE / REVIEW TEST 5-8

1/15

seznam otázek

What are the correct assertions about `break` & `continue` statement?

- [ ] `continue` jumps out of the loop and continues with the code coming after the loop body
- [ ] `break` jumps out of the loop and continues with the code coming after the loop body

80% z Lekce 10

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stops the program execution

PROJECTS

Pick your project

PYTHON ACADEMY / PROJECT 2: PICK YOUR FAVOURITE / PROJECTS / PICK YOUR PROJECT

Congratulations, you can work on another project. Two months have passed and you have another opportunity to test your skills on complex project.

How to work on project

80% z Lekce 10

You h[illegible]ion t[illegible]work on one from three available projects. Pick one you like the most. We at[illegible]ject[illegible]n order you could have a preference.

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Projects

Option A: Bulls & Cows
Option B: Tic Tac Toe

Each of the projects are different. One is longer than another, one is more difficult etc. If you are super active, try to complete more than one project. :) We wish you luck. Go to another chapter to see what we have prepared for you.

Option A: Bulls & Cows

Your task is to create a program that would simulate **Bulls and Cows** game.

1. First of all, the computer will generate a 4-digit secret number. The digits must be all different.
2. Then, in turn, the user tries to guess their computer's number. The computer prompts the user for a number and after the input has been received, the computer responds with the number of matching digits.
3. If the matching digits are in their right positions, they are "bulls", if in different positions, they are "cows".

For example, let's say the number is 2017. A sample interaction might look like this:

```
Hi there!
I've generated a random 4 digit number for you.
Let's play a bulls and cows game.
Enter a number
>>> 1234
```

```
    Osnova
>>
3 bulls, 0 cows
>>> 2017
Correct, you've guessed the right number in 4 guesses!
That's {amazing, average, not so good, ...}
```

Bonus

Extend the functionality of the program as you wish. For example

- Counting time it took to guess the number
- Count the number of guesses and store them in a file and at the end depict user's stats (the best player etc.)

Option B: Tic Tac Toe

Besides being a German female pop group, **Tic Tac Toe** is a game for 2 players. Each player can place one mark (or stone) per turn on the 3x3 (or bigger) grid.

The player who succeeds in placing three of their marks in a horizontal, vertical, or diagonal row winsthe game. The marks used are usually 'x' and 'o' for respective players.

Usually this game is implemented for human and computer to compete. As we will not solve any artificial intelligence for now, our main goal is to implement it for two human players.

These are the basic things your program should be able to do:

- shortly describe game rules
- display the game board
- ask the player #1 to choose the position to take

- ask the player (1-9) to choose the position to take
- display the game board with the newly taken position etc.

The program should be able to assess and inform the user, whether either of the players won the game or the players drew (don't forget to terminate the program).

Example of running program:

```
============================
Welcome to Tic Tac Toe
GAME RULES:
Each player can place one mark (or stone) per turn on the 3x3 grid
The WINNER is who succeeds in placing three of their marks in a
* horizontal,
* vertical or
* diagonal row
Let's start the game
------
 | |
------
 | |
------
 | |
------
========================================
Player o | Please enter your move number: 5
========================================
========================================
------
 | |
------
 |o|
------
 | |
------
```

```
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  --
x| |
------
 |o|
------
 | |
------
========================================
Player o | Please enter your move number:
...
Player o | Please enter your move number:3
====================

Congratulations, the player o WON!
------
x|x|o
------
 |o|
------
o| |
------
```

DALŠÍ LEKCE