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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**

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show questions

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

83% 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

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work on one from three available projects. Pick one you like the most. We order you could have a preference.

Projects

Option A: Car rental database
Option B: Bulls & Cows
Option C: 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: Car Rental Database

Your task is to create the car rental database, which enables you to compare different cars based on various parameters. You will go through working with files and data type dictionary.

Before you start, please **download database files** with which you will work from this link.

The database files are devided to two categories:

- files that store information about one particular car - name of this file represents car's ID
- 2 files which stores IDs of rented / not rented cars

From this not_rented file you will construct a dictionary (or another data structure - depending what suits you the most) from which you will extract needed information later.

The program shall be user friendly and it's supposed to present availible cars to customer and let him rent a car. The program should:

- greet the customer

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- rent a car
- exit the program

When listing cars the program shall display every information about a car availible + car's ID in a nice form. For example something like this:

```
================
|  ID   |   1   |
| brand |  vw   |
| model | golf  |
... etc
```

When searching cars, customer should be able to aply multiple conditions and he should be able to choose how to compare entered value and database value.

When renting cars, the program shall check if that car is availible, if yes then print some message and the move ID of that car form `not_rented` file to `rented` file.

Option B: 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".

```
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                    random 4 digit number for you.
Let's play a bulls and cows game.
Enter a number
>>> 1234
0 bulls, 2 cows
>>> 6147
1 bull, 1 cow
>>> 2417
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 C: 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

- [illegible]ame rules

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- display the game board
- ask the player #1 to choose the position to take
- display the game board with the newly taken position
- ask the player #2 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
========================================
========================================
------
 | |
```

```
| ------
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------
========================================
Player x | Please enter your move number: 1
========================================
========================================
------
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| |
------
```

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