Final Projects

Just select "ONE" of the projects.

*First Dead Line: 15/01/1403

*Second Dead Line: 31/02/1403 (-20%)

*Use Python Version 3.6 and higher

Final Project 1

IMDB Telegram Bot
2000

- **Create a Telegram bot using python, for searching Movies in the IMDB API !**

- **Bot Steps:**

1. start
2. Search a phrase
3. show the list of movies, based on your search!
4. Select the desired movie
5. Show the selected movies information!

Project Guides:

- You can find the API's here: https://imdb-api.com/
- Before finding APIs, you have to register in the website(imdb-api.com) !
- Use https://www.pythonanywhere.com/ as your server! (this is a suggestion)
- Sample Bot: https://t.me/GoodIMDbOT
- UI and other things of of your robot does not need to look like the robot, exactly. they are desired!
- How to name your bot: LastName+FirstName+imdb+bot

FINALLY:

- **WRITE THE LINK OF YOUR ROBOT IN THE *TXT* FILE AND ZIP IT ALONG WITH YOUR CODES AND UPLOAD IT TO THE ANSWER GATE!**

EXCEPT WHAT IS SAID IN THE TEXT OF THE PROJECT,

EVERY TYPE, EVERY SOLUTION, EVERY METHOD, EVERY FUNCTION, EVERY COMMAND AND EVERY STRUCTURE IS ALLOWED!

Final Project 2

date converter Library
2000

- Write all the mentioned functions in the form of a python calendar library that converts dates! (Gregorian (میلادی), Hijri(قمری) and Jalali(شمسی))

Points:

- After you finish writing the library, put it on *https://pypi.org/* so that it can be installed with *pip install your_calendar_lib (otherwise, your mark will be ZERO)*

- Be sure about exception handling in your code! (empty input, input with different datatype, zero division, different number of input argument, ...)

- How to name your library:
  The first two letters of your last name + The first two letters of your FirstName + 'date'+ 'converter'
  Example: First Name: Elnaz, Last Name: Ghanbari, library name: elghdateconverter
  *If the library name exists in the https://pypi.org/, add a random two-digit number to the end of it. library name: elghdateconverter12

- Name of functions and number of inputs have to be same as mentioned functions, exactly!

- **Methods and Functions:**

1. **your_calendar_lib.hijri(Year, Month, day).hijri_to_gregorian()**

   Description: This function converts Hijri date to Gregorian date !

   Example:
   your_calendar_lib.hijri(1444, 08, 07).hijri_to_gregorian()
   out: (2023,02 ,28) #Gregorian,output type: tuple!

2. **your_calendar_lib.gregorian(Year, Month, day).gregorian_to_hijri()**

   Description: This function converts Gregorian date to Hijri date !

   Example:
   your_calendar_lib.gregorian(2023,02 ,28).gregorian_to_hijri()
   out: (1444, 08 , 07) #Hijri,output type: tuple!

3. **your_calendar_lib.jalali(Year, Month, day).jalali_to_hijri()**

   Description: This function converts Jalali date to Hijri date !

   Example:
   your_calendar_lib.jalali(1401, 12, 09).jalali_to_hijri()
   out: (1444, 08, 07) #Hijri,output type: tuple!

4. your_calendar_lib.hijri(Year, Month, day).hijri_to_jalali()

Description: This function converts Hijri date to Jalali date !

Example:
```
your_calendar_lib.hijri(1444, 08, 07).hijri_to_jalali()
out: (1401, 12, 09 ) #Jalali,output type: tuple!
```

5. your_calendar_lib.gregorian(Year, Month, day).gregorian_to_jalali()

Description: This function converts Gregorian date to Jalali date !

Example:
```
your_calendar_lib.gregorian(2023-02-28).gregorian_to_jalali()
out: (1401,12,09) #Jalali,output type: tuple!
```

6. your_calendar_lib.jalali(Year, Month, day).jalali_to_gregorian()

Description: This function converts Jalali date to Gregorian date !

Example:
```
your_calendar_lib.jalali(1401,12,09).jalali_to_gregorian()
out: (2023-02-28) #Gregorian,output type: tuple!
```

7. your_calendar_lib.gregorian.now()

Description: This function shows current time in gregorian!

Example:

```
your_calendar_lib.gregorian.now()
out: (2023,02 ,28 ) #Gregorian,output type: tuple!
```

---

8. your_calendar_lib.jalali.now()

Description: This function shows current time in jalali!

Example:

```
your_calendar_lib.jalali.now()
out: (1401,12 ,12 ) #Jalali,output type: tuple!
```

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9. your_calendar_lib.hijri.now()

Description: This function shows current time in hijri!

Example:

```
your_calendar_lib.hijri.now()
out: (1444,08 ,10 ) #hijri,output type: tuple!
```

- **Methods and Functions:**

10. your_calendar_lib.gregorian(year, month, day).weekday()

Description: This function shows the week day

Example:
your_calendar_lib.gregorian(2023, 02 , 28).weekday()
out: Tuesday #output type: String

11. your_calendar_lib.jalali(year, month, day).weekday()

Description: This function shows the week day

Example:
your_calendar_lib.jalali(1401, 12 , 09).weekday()
out: Tuesday #output type: String

12. your_calendar_lib.hijri(year, month, day).weekday()

Description: This function shows the week day

Example:
your_calendar_lib.hijri(1444, 12 , 09).weekday()
out: Tuesday #output type: String

- **Methods and Functions:**

13. your_calendar_lib.gregorian(year, month, day).elapsedtime()

Description: This function shows elapsed time from input date until now!

Example:

```
your_calendar_lib.gregorian(2022, 02, 05).elapsedtime()
out: (1, 7, 7)  #(year, month, day) ,output type: tuple!
```

14. your_calendar_lib.jalali(year, month, day).elapsedtime()

Description: This function shows elapsed time from input date until now

Example:

```
your_calendar_lib.jalali(1400, 02, 05).elapsedtime()
out: (1, 7, 7)  #(year, month, day) ,output type: tuple!
```

15. your_calendar_lib.hijri(year, month, day).elapsedtime()

Description: This function shows elapsed time from input date until now

Example:

```
your_calendar_lib.hijri(1444, 02, 05).elapsedtime()
out: (1, 7, 7)  #(year, month, day) ,output type: tuple!
```

FINALLY:

- **WRITE HOW TO INSTALL YOUR LIBRARY IN THE *TXT* FILE AND ZIP IT ALONG WITH YOUR CODES AND UPLOAD IT TO THE ANSWER GATE!**

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EVERY TYPE, EVERY SOLUTION, EVERY METHOD, EVERY FUNCTION, EVERY COMMAND AND EVERY STRUCTURE IS ALLOWED!

Final Project 3

Sudoku Solver

1200

- Create a Sudoku Solver (9x9) program.

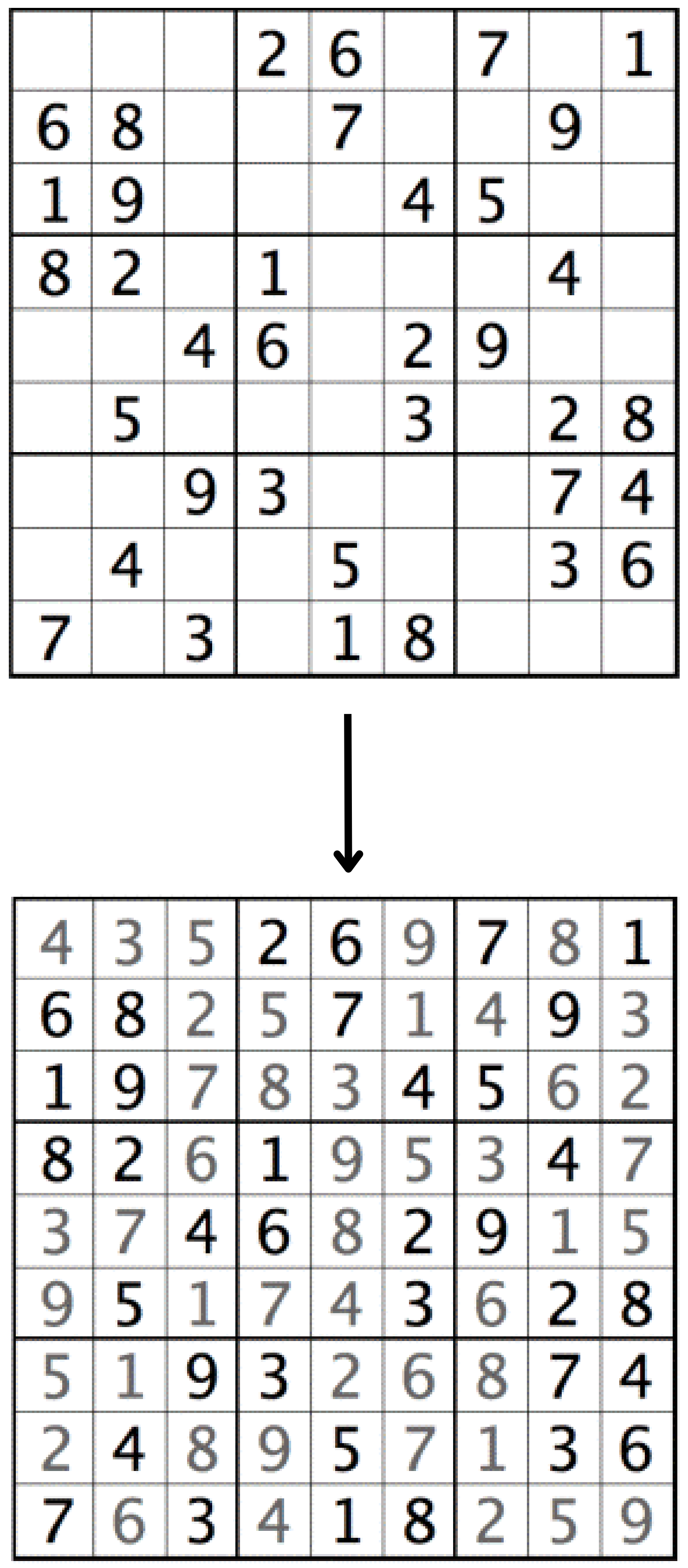
- Steps:

1. pass 9 integer number as first row. use 'empty' instead of empty cells.
2. pass 9 integer number as second row. use 'empty' instead of empty cells.
3. pass 9 integer number as third row. use 'empty' instead of empty cells.
4. pass 9 integer number as fourth row. use 'empty' instead of empty cells.
5. pass 9 integer number as fifth row. use 'empty' instead of empty cells.
6. pass 9 integer number as sixth row. use 'empty' instead of empty cells.
7. pass 9 integer number as seventh row. use 'empty' instead of empty cells.
8. pass 9 integer number as eighth row. use 'empty' instead of empty cells.
9. pass 9 integer number as ninth row. use 'empty' instead of empty cells.
10. print the solved sudoku.

- **For Example:**

1st input: 'empty' 'empty' 'empty' 2 6 'empty' 7 'empty' 1
2nd input: 6 8 'empty' 'empty' 7 'empty' 'empty' 9 'empty'
3d input: 1 9 'empty' 'empty' 'empty' 4 5 'empty' 'empty'
4th input: 8 2 'empty' 1 'empty' 'empty' 'empty' 4 'empty'
....

Output: [[4, 3, 5, 2, 6, 9 , 7, 8, 1],
[6, 8, 2, 5, 7, 1, 4, 9, 3],
...]]



			2	6		7		1
6	8			7			9	
1	9				4	5		
8	2		1				4	
		4	6		2	9		
	5				3		2	8
		9	3				7	4
	4			5			3	6
7		3		1	8			

4	3	5	2	6	9	7	8	1
6	8	2	5	7	1	4	9	3
1	9	7	8	3	4	5	6	2
8	2	6	1	9	5	3	4	7
3	7	4	6	8	2	9	1	5
9	5	1	7	4	3	6	2	8
5	1	9	3	2	6	8	7	4
2	4	8	9	5	7	1	3	6
7	6	3	4	1	8	2	5	9

Sudoku and rules : https://eu.usatoday.com/story/life/2022/08/12/what-is-sudoku-solve-puzzle/10299742002/

sample for test: https://sudokuspoiler.com/sudoku/sudoku9

FINALLY:

- ZIP YOUR CODE AND UPLOAD IT TO THE ANSWER GATE!

YOU HAVE TO USE IN-BUILT PYTHON, NUMPY AND PANDAS METHODS, WITHOUT ANY OTHER LIBRARIES!

Sudoku and rules : https://eu.usatoday.com/story/life/2022/08/12/what-is-sudoku-solve-puzzle/10299742002/

sample for test: https://sudokuspoiler.com/sudoku/sudoku9