hw02

September 1, 2022

1 hw02

1.1 Metadata

Name:	hw02
URL:	https://github.com/tslever/DS5100-2022-08-tsl2b/blob/main/lessons/M02/hw02.ipynb
Course:	DS 5100
Term:	Fall 2022 Online
Module:	M02
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Net ID:	tsl2b
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1.2 Data

Table 1: GRADES

name	grade
Jon	95
Mike	84
Jaime	99

Table 2: TOUCHDOWNS

name	touchdowns
Alex	2
Patrick	4
Tom	1
Joe	3
Alex	1

1.3 Tasks

1.3.1 Task 1

Using the data in Table 1, create a dictionary called `gradebook` where the keys contain the names and the values are the associated grades. Print the dictionary. (1 PT)

```
[1]: from platform import system
     if system() == 'Linux':
         !~/Documents/Tom_Levers_Git_Repository/refresh_tomleverspythonpackage.sh
     elif system() == 'Windows':
         !%USERPROFILE%/Documents/Tom_Levers_Git_Repository/
       ↪refresh_tomleverspythonpackage.bat
```

```
C:\Users\Tom\Documents\DS5100-2022-08-tsl2b\lessons\M02>pip uninstall
tomleverspythonpackage -y
Found existing installation: tomleverspythonpackage 0.1.0
Uninstalling tomleverspythonpackage-0.1.0:
  Successfully uninstalled tomleverspythonpackage-0.1.0

C:\Users\Tom\Documents\DS5100-2022-08-tsl2b\lessons\M02>pip install
C:\Users\Tom/Documents/Tom_Levers_Git_Repository/tomleverspythonpackage
Processing
c:\users\tom\documents\tom_levers_git_repository\tomleverspythonpackage
Building wheels for collected packages: tomleverspythonpackage
  Building wheel for tomleverspythonpackage (setup.py): started
  Building wheel for tomleverspythonpackage (setup.py): finished with status
'done'
  Created wheel for tomleverspythonpackage:
filename=tomleverspythonpackage-0.1.0-py3-none-any.whl size=2963
sha256=d25f283106c9f3f6196c6a6a639a121f1f8bad473b4b8316e3ab5d43395fd7dc
  Stored in directory: C:\Users\Tom\AppData\Local\Temp\pip-ephem-wheel-cache-2iz
76pyb\wheels\d9\ed\26\9b7957f5be7233af3b0ceffa91f1210e3b8a8e23dad36ba9ab
Successfully built tomleverspythonpackage
Installing collected packages: tomleverspythonpackage
Successfully installed tomleverspythonpackage-0.1.0

C:\Users\Tom\Documents\DS5100-2022-08-tsl2b\lessons\M02>pip show
tomleverspythonpackage
Name: tomleverspythonpackage
Version: 0.1.0
Summary: Contains Tom Lever's Python objects
Home-page: https://github.com/tslever/tree/main/tomleverspythonpackage
Author: Tom Lever
Author-email: thomas.lever.business@gmail.com
License: BSD 2-clause
Location: c:\users\tom\anaconda3\lib\site-packages
Requires:
Required-by:
```

```
  DEPRECATION: A future pip version will change local packages to be built in-
place without first copying to a temporary directory. We recommend you use
--use-feature=in-tree-build to test your packages with this new behavior before
it becomes the default.
```

```
   pip 21.3 will remove support for this functionality. You can find discussion
regarding this at https://github.com/pypa/pip/issues/7555.
```

[2]:

```
from tomleverspythonpackage.acsvfilereader import ACsvFileReader
from agradebook import AGradeBook

if __name__ == "__main__":

    the_csv_file_reader = ACsvFileReader()
    gradebook = the_csv_file_reader.reads_into_a_dictionary('GRADES.csv', str,␣
 ↪int)
    print(type(gradebook))
    print(gradebook)
```

```
<class 'dict'>
{'Jon': 95, 'Mike': 84, 'Jaime': 99}
```

1.4 Task 2

Index into the gradebook to print Mike’s grade. Do NOT use the `get()` method for this. (1 PT)

[3]:

```
if __name__ == "__main__": # continued

    the_gradebook = AGradeBook(gradebook)
    the_grade = the_gradebook.provides_a_grade_for('Mike')
    print(type(the_grade))
    print(the_grade)
```

```
<class 'int'>
84
```

1.5 Task 3

Attempt to index into gradebook to print Jeff’s grade. Show the result. Do NOT use the `get()` method for this. (1 PT)

[4]:

```
if __name__ == "__main__": # continued

    try:
        the_gradebook.provides_a_grade_for('Jeff')
    except ValueError as e:
        print(type(e))
        print(e)
```

```
<class 'ValueError'>
'Jeff' is not in list
```

1.6 Task 4

Using Table 2, build a list from the names called `names` and print it. (1 PT)

[5]:

```python
if __name__ == "__main__": # continued

    names = ['Alex', 'Patrick', 'Tom', 'Joe', 'Alex']
    print(type(names))
    print(names)
```

```
<class 'list'>
['Alex', 'Patrick', 'Tom', 'Joe', 'Alex']
```

1.7 Task 5

Sort the list in ascending order and print it. (1 PT)

[6]:

```python
if __name__ == "__main__": # continued

    the_sorted_list = sorted(names)
    print(type(the_sorted_list))
    print(the_sorted_list)
```

```
<class 'list'>
['Alex', 'Alex', 'Joe', 'Patrick', 'Tom']
```

1.8 Task 6

Build a set from the names in Table 2 and print it. (1 PT)

[7]:

```python
if __name__ == "__main__": # continued

    the_set_of_names = set(names)
    print(type(the_set_of_names))
    print(the_set_of_names)
```

```
<class 'set'>
{'Tom', 'Alex', 'Patrick', 'Joe'}
```

1.9 Task 7

Build a dictionary from the touchdowns data, calling it `td`, and print it. Use lists to store the values. Remember that dictionary keys must be unique. (1 PT)

[8]:

```python
if __name__ == "__main__": # continued

    td = the_csv_file_reader.reads_into_a_dictionary('TOUCHDOWNS.csv', str, int)
    print(type(td))
    print(td)
```

```
<class 'dict'>
{'Alex': [2, 1], 'Patrick': 4, 'Tom': 1, 'Joe': 3}
```

1.10 Task 8

Compute the sum of Alex's touchdowns using the appropriate built-in function.

[9]:

```
if __name__ == "__main__": # continued

    the_sum = sum(td.get('Alex'))
    print(type(the_sum))
    print(the_sum)
```

```
<class 'int'>
3
```

1.11 Task 9

Get the keys from `td` and save them as a sorted list `list1`. Then get a set from `names` and save them as a sorted list called `list2`. Compare them with a boolean operator to see if they are equal. (2 PTS)

[10]:

```
if __name__ == "__main__": # continued

    list1 = sorted(td.keys())
    list2 = sorted(list(the_set_of_names))
    if list1 == list2:
        print('list1 is equal to list2.')
        print(str(list1) + ' == ' + str(list2))
    else:
        print('list1 is not equal to list2.')
        print(str(list1) + ' != ' + str(list2))
```

```
list1 is equal to list2.
['Alex', 'Joe', 'Patrick', 'Tom'] == ['Alex', 'Joe', 'Patrick', 'Tom']
```

[ ]:

```
```