

## Code hard copy:

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#Scenario:
#Creating a program that interacts with the HarryPotter api that contains a
list of all students
#at Hogwarts in the Harry Potter Book series, with their information (such as
school house, age, their wand, etc).
#From this api I am taking the names and corresponding school house of each
student out of this list of information
#and storing this into a file, in a readable format.
#The program also asks the user to choose a house and then counts how many
students are in that house
#and runs a message at the end to display this output clearly.
#The program also asks the user to enter a Character's name to see if they
attended Hogwarts in the books.
#If the character did attend, it prints a message to inform the user of this.
If the character name the user entered
#did not attend Hogwarts, a message is printed to inform them of this too.
#This API does not require any keys to be set up.

#-----Importing Module and using API-----#
import requests          #Importing the necessary module to make requests to an
API.
from pprint import pprint #Importing pprint module to pretty-print data into a
more readable format.
apiurl= 'https://hp-api.onrender.com/api/characters/students' #Creating a
variable to store the Harry Potter API in.
theresponse = requests.get(apiurl) #Making a call to the above API and storing
it in the variable 'theresponse'
students = theresponse.json() #Getting the data from the API to convert it into
JSON strings
##pprint(students)

#----- Creating a file & using a for loop -----#
with open("Hogwarts_students.txt", "w") as thefile:    #Creating a file to store
the API data in
    thefile.write("🧙Students attending Hogwarts in the Harry Potter Series and
Their Houses🧙:" + "\n") #Using .write() to Create a title for the txt file.
    for item in students: #Using a for loop to loop through the API data and
pull out and save the relevant data to the txt file in a clear readable format.
        thefile.write("The character" + " " + item['name'] + " " + "is in the
hogwarts house" + " " + item['house'] +'\n')
#Using "\n" to create a new line to display the data more clearly in the text
file.

#----- Creating functions -----#
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#I am creating a function to count how many students are in a user- chosen
hogwarts house.
house = input("Enter a Hogwarts House, your choices are: Gryffindor,
Hufflepuff, Ravenclaw or Slytherin ").title()
#Asking for user input for a house and storing it in the variable "house".
#I am using the .title() in-built python method to ensure that regardless of
user input, the capitalisation matches that in the txt file to be counted.

#Creating the function to count how many students in each house by creating a
word counter (however many times a house appears in the file is how many
students are in it).
def houseselection():
    data = file.read()
    words = data.split()
    words_count = words.count(house) #Using the variable "house" to state which
word (or in this case which hogwarts house) to count.
    return "There are {} students in {}".format(words_count, house)

#Calling the function to use for the txt file:
with open('Hogwarts_students.txt', 'r') as file:
    housetotal = houseselection()
    print(housetotal)

#----- Using if....else statements ----- #
#I am creating a function to enable the user to enter a character's name to see
if they attended hogwarts.
#I am using an if...else statement to branch logic in the program to print
different answers depending on if the name entered is a Hogwarts student or
not.
#I am using .title() again to ensure user input matches the text in the file
from the API.
Name_search = input("Enter a character's first name to see if they are student
at Hogwarts in the series:").title()
def charactername():
    info = file.read()
    names = info.split()
    names_count = names.count(Name_search)
    if names_count >=1: #If the name appears less than once in the count then
the character name is not a student at Hogwarts, as the file is a list of
students at hogwarts from the API.
        print("{} attends Hogwarts in the Harry Potter Book
series!".format(Name_search))
    else:
        print("{} is not a student at Hogwarts in the Harry Potter
series".format(Name_search) + "\n" " - Which means your character was a
teacher,"
            "relative, member of staff or attended another wizarding school in
the Harry Potter series!".format(

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        Name_search) + "\n" + "Alternatively the name you entered isn't a
character in the books 😊!")

#Calling the function to use it for the file:
with open("Hogwarts_students.txt", 'r') as file:
    charactername()

#----- Using a list to store data (the professors in the HP book
series) and returning a boolean value based on whether or not 'profs' value
appears
#in the list professors -----#
profs = input("Enter the surname of a professor in the Harry Potter Books:
").title()
professors = ["Hagrid", "Dumbledore", "Snape", "Lupin", "Mcgonagall",
"Spore", "Everard", "Fortescue", "Derwent", "Nigellus-Black", "Dippet",
"Vector", "Sinistra", "Kettleburn", "Grubblyplank", "Flitwick", "Carrow",
"Merrythought", "Quirrell", "Lockheart", "Crouch", "Umbridge", "Trelawney",
"Firenze", "Hooch", "Sprout", "Binns",
'Burbage', "Slughorn", "Babbling"]
check = profs in professors
print("{} is a professor at Hogwarts:".format(profs), check)
#This will run the 'profs' variable against the stored list elements, and will
produce a boolean value depending on if the name is in the 'professors' list
data structure or not.
#If the 'profs' variable is in the 'professors' list, the return will be
'True'. If it is not, the return will be False.

#-----Using 2 in-built functions for assignment
requirements-----#:
#Here I am using the two in built functions len() and print().
#len() is returning the number of characters in the apiurl string we set up
earlier.
#print() is displaying the output of len() which I have stored in the variable
"inbuiltinfunctionexample".
inbuiltinfunctionexample = len(apiurl)
print(inbuiltinfunctionexample)

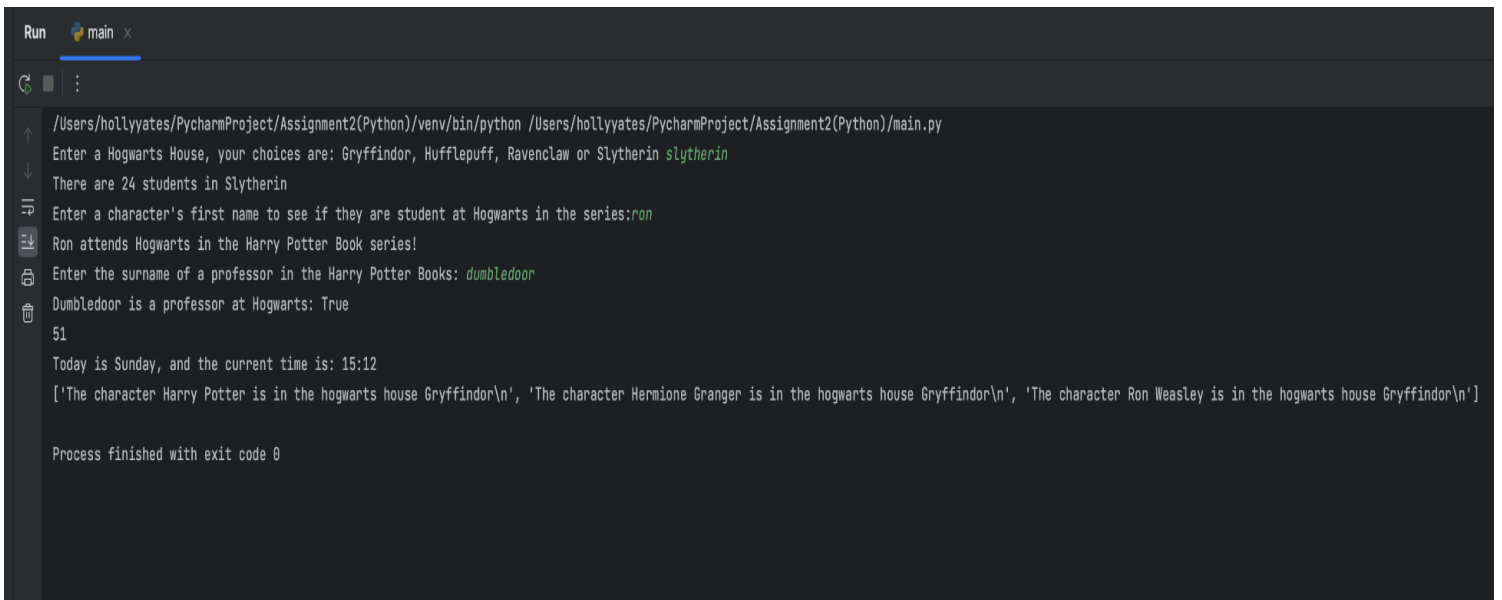
#-----importing additional module for assignment requirements-----#
import datetime #Importing datetime module.
currenttime = datetime.datetime.now() #Storing this in a variable
print(currenttime.strftime("Today is %A, and the current time is: %H:%M"))
#Using datetime character codes to print the current date and time when
accessed.

#-----Using string slicing for assignment
requirements-----#
with open("Hogwarts_students.txt") as doc:

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string = doc.readlines() #Using readlines() to pull out data from the API
stored in the file.
print(string[1:4]) #Using string slicing to display the first three lines of
the text file (by using indexes 1:4 it will not print the title or the fourth
line).
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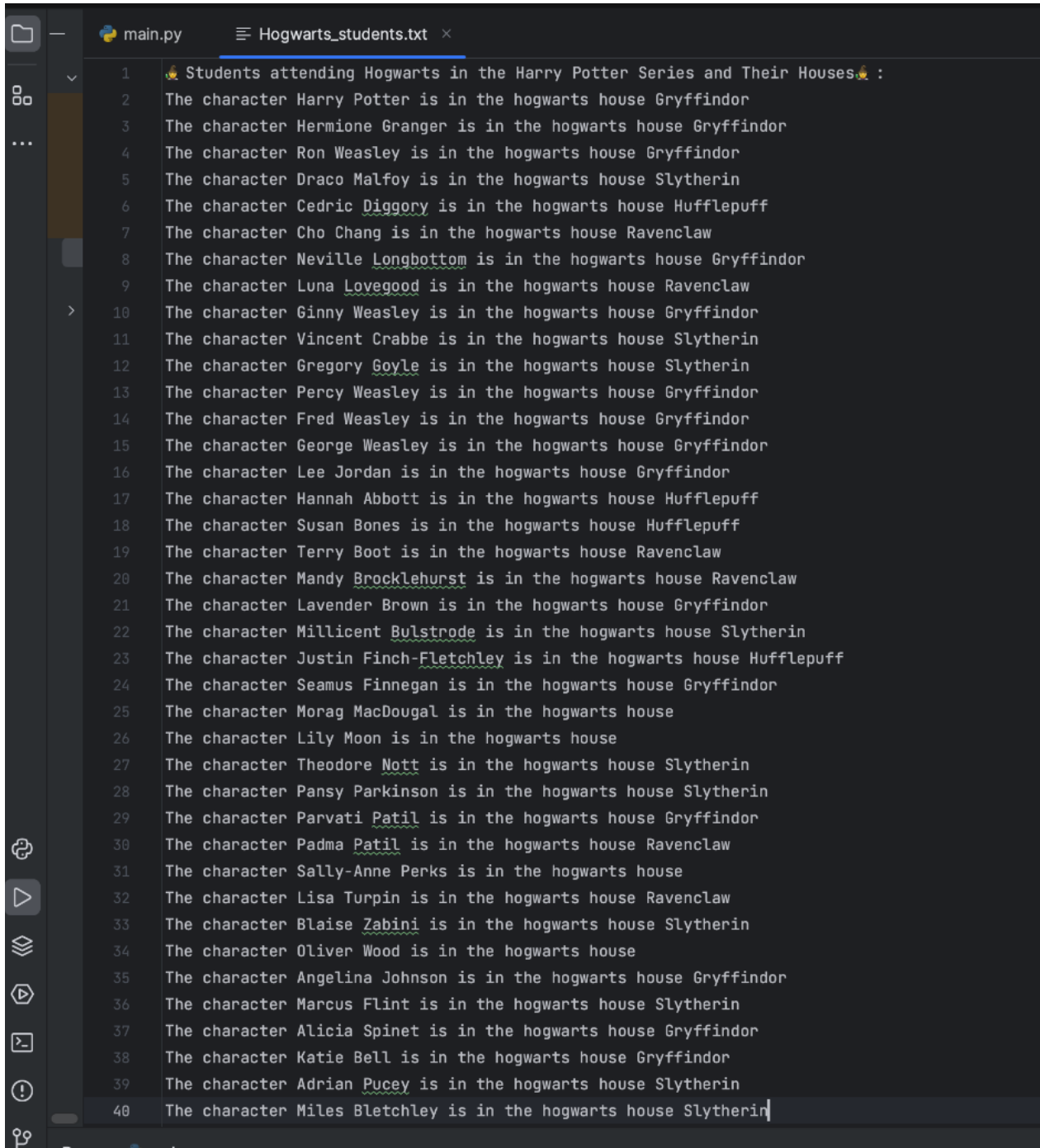
## Console output screenshot:



The screenshot shows a Python console window with the following output:

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Run main x
/Users/hollyyates/PycharmProject/Assignment2(Python)/venv/bin/python /Users/hollyyates/PycharmProject/Assignment2(Python)/main.py
Enter a Hogwarts House, your choices are: Gryffindor, Hufflepuff, Ravenclaw or Slytherin slytherin
There are 24 students in Slytherin
Enter a character's first name to see if they are student at Hogwarts in the series:ron
Ron attends Hogwarts in the Harry Potter Book series!
Enter the surname of a professor in the Harry Potter Books: dumbledore
Dumbledore is a professor at Hogwarts: True
51
Today is Sunday, and the current time is: 15:12
['The character Harry Potter is in the hogwarts house Gryffindor\n', 'The character Hermione Granger is in the hogwarts house Gryffindor\n', 'The character Ron Weasley is in the hogwarts house Gryffindor\n']
Process finished with exit code 0
```

## Text file screenshot:



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main.py  Hogwarts_students.txt x
1  🧙 Students attending Hogwarts in the Harry Potter Series and Their Houses.🧙 :
2  The character Harry Potter is in the hogwarts house Gryffindor
3  The character Hermione Granger is in the hogwarts house Gryffindor
4  The character Ron Weasley is in the hogwarts house Gryffindor
5  The character Draco Malfoy is in the hogwarts house Slytherin
6  The character Cedric Diggory is in the hogwarts house Hufflepuff
7  The character Cho Chang is in the hogwarts house Ravenclaw
8  The character Neville Longbottom is in the hogwarts house Gryffindor
9  The character Luna Lovegood is in the hogwarts house Ravenclaw
10 The character Ginny Weasley is in the hogwarts house Gryffindor
11 The character Vincent Crabbe is in the hogwarts house Slytherin
12 The character Gregory Goyle is in the hogwarts house Slytherin
13 The character Percy Weasley is in the hogwarts house Gryffindor
14 The character Fred Weasley is in the hogwarts house Gryffindor
15 The character George Weasley is in the hogwarts house Gryffindor
16 The character Lee Jordan is in the hogwarts house Gryffindor
17 The character Hannah Abbott is in the hogwarts house Hufflepuff
18 The character Susan Bones is in the hogwarts house Hufflepuff
19 The character Terry Boot is in the hogwarts house Ravenclaw
20 The character Mandy Brocklehurst is in the hogwarts house Ravenclaw
21 The character Lavender Brown is in the hogwarts house Gryffindor
22 The character Millicent Bulstrode is in the hogwarts house Slytherin
23 The character Justin Finch-Fletchley is in the hogwarts house Hufflepuff
24 The character Seamus Finnegan is in the hogwarts house Gryffindor
25 The character Morag MacDougal is in the hogwarts house
26 The character Lily Moon is in the hogwarts house
27 The character Theodore Nott is in the hogwarts house Slytherin
28 The character Pansy Parkinson is in the hogwarts house Slytherin
29 The character Parvati Patil is in the hogwarts house Gryffindor
30 The character Padma Patil is in the hogwarts house Ravenclaw
31 The character Sally-Anne Perks is in the hogwarts house
32 The character Lisa Turpin is in the hogwarts house Ravenclaw
33 The character Blaise Zabini is in the hogwarts house Slytherin
34 The character Oliver Wood is in the hogwarts house
35 The character Angelina Johnson is in the hogwarts house Gryffindor
36 The character Marcus Flint is in the hogwarts house Slytherin
37 The character Alicia Spinnet is in the hogwarts house Gryffindor
38 The character Katie Bell is in the hogwarts house Gryffindor
39 The character Adrian Pucey is in the hogwarts house Slytherin
40 The character Miles Bletchley is in the hogwarts house Slytherin
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main.py  Hogwarts_students.txt x
39 The character Adrian Pucey is in the hogwarts house Slytherin
40 The character Miles Bletchley is in the hogwarts house Slytherin
41 The character Terrence Higgs is in the hogwarts house Slytherin
42 The character Colin Creevey is in the hogwarts house Gryffindor
43 The character Milicent Bullstroude is in the hogwarts house Slytherin
44 The character Ernie Macmillan is in the hogwarts house Hufflepuff
45 The character Penelope Clearwater is in the hogwarts house Ravenclaw
46 The character Derek is in the hogwarts house
47 The character Cassius Warrington is in the hogwarts house Slytherin
48 The character Graham Montague is in the hogwarts house Slytherin
49 The character Peregrine Derrick is in the hogwarts house Slytherin
50 The character Lucian Bole is in the hogwarts house Slytherin
51 The character Dennis Creevey is in the hogwarts house
52 The character Stewart Ackerley is in the hogwarts house Ravenclaw
53 The character Malcolm Baddock is in the hogwarts house Slytherin
54 The character Eleanor Branstone is in the hogwarts house Hufflepuff
55 The character Owen Cauldwell is in the hogwarts house Hufflepuff
56 The character Emma Dobbs is in the hogwarts house
57 The character Laura Madley is in the hogwarts house Hufflepuff
58 The character Natalie McDonald is in the hogwarts house Gryffindor
59 The character Graham Pritchard is in the hogwarts house Slytherin
60 The character Orla Quirke is in the hogwarts house Ravenclaw
61 The character Kevin Whitby is in the hogwarts house Hufflepuff
62 The character Eloise Midgen is in the hogwarts house Gryffindor
63 The character Fawcett is in the hogwarts house Ravenclaw
64 The character Summers is in the hogwarts house Hufflepuff
65 The character Stebbins is in the hogwarts house Ravenclaw
66 The character Anthony Goldstein is in the hogwarts house Ravenclaw
67 The character Euan Abercrombie is in the hogwarts house Gryffindor
68 The character Rose Zeller is in the hogwarts house Hufflepuff
69 The character Patricia Stimpson is in the hogwarts house
70 The character Kenneth Towler is in the hogwarts house Gryffindor
71 The character Vicky Frobisher is in the hogwarts house Gryffindor
72 The character Geoffrey Hooper is in the hogwarts house Gryffindor
73 The character Michael Corner is in the hogwarts house Ravenclaw
74 The character Zacharias Smith is in the hogwarts house Ravenclaw
75 The character Barnabas the Barmy is in the hogwarts house
76 The character Andrew Kirke is in the hogwarts house Gryffindor
77 The character Jack Sloper is in the hogwarts house Gryffindor
78 The character Summerby is in the hogwarts house Hufflepuff
79 The character Marjette Edgeworth is in the hogwarts house Ravenclaw
Run main x
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79 The character Marietta Edgecombe is in the hogwarts house Ravenclaw
80 The character Bradley is in the hogwarts house Ravenclaw
81 The character Roger Davies is in the hogwarts house Ravenclaw
82 The character Eddie Carmichael is in the hogwarts house Ravenclaw
83 The character Daphne Greengrass is in the hogwarts house Slytherin
84 The character Romilda Vane is in the hogwarts house Gryffindor
85 The character Cormac McLaggen is in the hogwarts house Gryffindor
86 The character Marcus Belby is in the hogwarts house Ravenclaw
87 The character Tiberius is in the hogwarts house
88 The character Demelza Robins is in the hogwarts house Gryffindor
89 The character Jimmy Peakes is in the hogwarts house Gryffindor
90 The character Ritchie Coote is in the hogwarts house Gryffindor
91 The character Melinda Bobbin is in the hogwarts house
92 The character Leanne is in the hogwarts house Hufflepuff
93 The character Vaisey is in the hogwarts house Slytherin
94 The character Harper is in the hogwarts house Slytherin
95 The character Urquhart is in the hogwarts house Slytherin
96 The character Cadwallader is in the hogwarts house Hufflepuff
97 The character James Potter is in the hogwarts house Gryffindor
98 The character Albus Severus Potter is in the hogwarts house Slytherin
99 The character Rose Weasley is in the hogwarts house Gryffindor
100 The character Hugo Weasley is in the hogwarts house
101 The character Scorpius Malfoy is in the hogwarts house Slytherin
102 The character Victoire Weasley is in the hogwarts house
103
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Run main x

Assignment2(Python) > Hogwarts\_students.txt