

Syrian Arab Republic

Lattakia - Tishreen University

Department of Communication and
electrical engineering

5th Network Programming : Homework
No1



الجمهورية العربية السورية

اللاذقية - جامعة تشرين

كلية الهندسة الكهربائية والميكانيكية

قسم هندسة الاتصالات والإلكترونيات

السنة الخامسة: وظيفة ١ برمجة شبكات

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Question 1 : Python Basics?

A-define a list that contain the names of graduated students “5 students at least “:

Create a program that accept student name and prints if the user graduated or not.

```
# Question 1 : -A-
# first we define list that contain graduated student
Gradute_Student=["Mohamed Salami","Ghadeer Bishani",
,"Roaa adnan","Maher Mansour","Karla kilani ","Rabee Ali "]
#we ask the student to input his first & last name
first_name= input ("Enter your first name ")
last_name = input("Enter your Last name ")
#using strip() to delete the spaces in the right & left
strings to suitable the name in the last list
fname=first_name.strip()
#using title() to make the first character in each of
first & last name capital in in the last list
fname=fname.title()
lname=last_name.strip()
lname=lname.title()
# combining each of first_name & and last_name after
modulating to use them like a full name for the students
full_name= fname+" "+lname
```

```
#making a condition to experment that the full name is
belong to the last list or not
if full_name in Gradute_Student:
    print("congratulations {} you
graduated".format(full_name))
else:
    print("We are sorry for you \nGOOD LUCK  in the next
year {}".format(full_name))
```

في بداية البرنامج قمنا بتعريف List وهي **Gradute_Student** و وضعنا فيها أسماء الطلاب الذين تخرجوا ومن ثم طلبنا من المستخدم إدخال اسمه الأول و إدخال اسمه الأخير أيضاً عن طريق التعليمة **Input** .

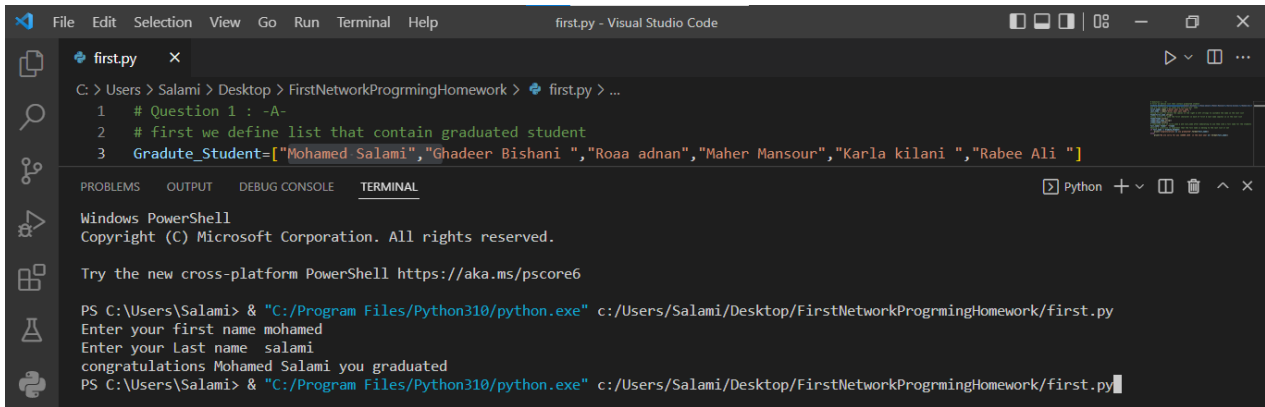
ثم قمنا باستخدام تعليمة **strip()** لكل من الاسم الأول والاسم الأخير على حدا للذان قام المستخدم بإدخالهما بحذف الفراغات الموجودة على يمين ويسار الاسم في حال وضعها بشكل خاطئ من قبل المستخدم ولكي يلائموا الأسماء الموضوعة في List . وتم استخدام التعليمة **title()** من أجل جعل بداية كل من الاسمين الأول و الأخير للذان أدخلهما المستخدم أحرف كبيرة ولكي يلائموا الأسماء الموضوعة في List .

قمنا بعد ذلك بدمج الاسمين الأول والأخير في سلسلة واحدة عن طريق (+) وأطلقنا على السلسلة اسم **full_name** .

ثم قمنا ب استخدام تعليمة الشرط **if** بالتحقق من وجود الاسم في List(1)

the result:

in first case we will enter student who is really graduated
“mohamed salami ” and this case the output is :



```
File Edit Selection View Go Run Terminal Help first.py - Visual Studio Code
first.py
C: > Users > Salami > Desktop > FirstNetworkProgrmingHomework > first.py > ...
1 # Question 1 : -A-
2 # first we define list that contain graduated student
3 Gradute_Student=["Mohamed Salami","Ghadeer Bishani ","Roaa adnan","Maher Mansour","Karla kilani ","Rabee Ali "]

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Salami> & "C:/Program Files/Python310/python.exe" c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/first.py
Enter your first name mohamed
Enter your Last name salami
congratulations Mohamed Salami you graduated
PS C:\Users\Salami> & "C:/Program Files/Python310/python.exe" c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/first.py
```

and the other case if we inpute student name who dose not graduated the output of the program is :



```
20
21

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
GOOD LUCK in the next year Diana Ali
PS C:\Users\Salami>
PS C:\Users\Salami>
PS C:\Users\Salami>
PS C:\Users\Salami>
PS C:\Users\Salami>
PS C:\Users\Salami> & "C:/Program Files/Python310/python.exe" c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/first.py
Enter your first name diana
Enter your Last name ali
We are sorry for you
GOOD LUCK in the next year Diana Ali
PS C:\Users\Salami>
```

B- Generate and print a list of odd numbers from 1 to 100 .

Tips: “List Comprehension ”

```
odd_number=[i for i in range(1,1001,2) ]
print(odd_number)
```

كما بتعريف `List[odd_number]` ثم باستخدام الحلقة `for` والتعليمة `range()` ابتداء من الرقم 1 وحتى 1001 وبخطوه 2 لكي تمر الحلقة على جميع الأعداد الفردية من 1 وحتى ال 1000 وباستخدام تعليمة `print()` قمنا بطباعة الأعداد الموجودة ضمن المجال السابق.

The output of the program :

```

PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> & "C:/Program Files/Python310/pyth
.exe" "c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/Question 1_B.py"
[1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47,
, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95
97, 99, 101, 103, 105, 107, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 133,
35, 137, 139, 141, 143, 145, 147, 149, 151, 153, 155, 157, 159, 161, 163, 165, 167, 169, 171
173, 175, 177, 179, 181, 183, 185, 187, 189, 191, 193, 195, 197, 199, 201, 203, 205, 207, 20
211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 2
, 249, 251, 253, 255, 257, 259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283,
5, 287, 289, 291, 293, 295, 297, 299, 301, 303, 305, 307, 309, 311, 313, 315, 317, 319, 321,
23, 325, 327, 329, 331, 333, 335, 337, 339, 341, 343, 345, 347, 349, 351, 353, 355, 357, 359
361, 363, 365, 367, 369, 371, 373, 375, 377, 379, 381, 383, 385, 387, 389, 391, 393, 395, 39
399, 401, 403, 405, 407, 409, 411, 413, 415, 417, 419, 421, 423, 425, 427, 429, 431, 433, 4
, 437, 439, 441, 443, 445, 447, 449, 451, 453, 455, 457, 459, 461, 463, 465, 467, 469, 471,
3, 475, 477, 479, 481, 483, 485, 487, 489, 491, 493, 495, 497, 499, 501, 503, 505, 507, 509,
11, 513, 515, 517, 519, 521, 523, 525, 527, 529, 531, 533, 535, 537, 539, 541, 543, 545, 547
549, 551, 553, 555, 557, 559, 561, 563, 565, 567, 569, 571, 573, 575, 577, 579, 581, 583, 58
587, 589, 591, 593, 595, 597, 599, 601, 603, 605, 607, 609, 611, 613, 615, 617, 619, 621, 6
, 625, 627, 629, 631, 633, 635, 637, 639, 641, 643, 645, 647, 649, 651, 653, 655, 657, 659,
1, 663, 665, 667, 669, 671, 673, 675, 677, 679, 681, 683, 685, 687, 689, 691, 693, 695, 697,
99, 701, 703, 705, 707, 709, 711, 713, 715, 717, 719, 721, 723, 725, 727, 729, 731, 733, 735
737, 739, 741, 743, 745, 747, 749, 751, 753, 755, 757, 759, 761, 763, 765, 767, 769, 771, 77
775, 777, 779, 781, 783, 785, 787, 789, 791, 793, 795, 797, 799, 801, 803, 805, 807, 809, 8
, 813, 815, 817, 819, 821, 823, 825, 827, 829, 831, 833, 835, 837, 839, 841, 843, 845, 847,
9, 851, 853, 855, 857, 859, 861, 863, 865, 867, 869, 871, 873, 875, 877, 879, 881, 883, 885,
87, 889, 891, 893, 895, 897, 899, 901, 903, 905, 907, 909, 911, 913, 915, 917, 919, 921, 923
925, 927, 929, 931, 933, 935, 937, 939, 941, 943, 945, 947, 949, 951, 953, 955, 957, 959, 96
1, 963, 965, 967, 969, 971, 973, 975, 977, 979, 981, 983, 985, 987, 989, 991, 993, 995, 997,
999]

```

C - L=["Network", "Math", "Programming", "Physics", "Music"]

In this exercise, you will implement a Python program that reads the items of the **items that starts with "P" letter**, then print it on screen .

Tips: using loop , list "len()"method

```

#Define the list
L = ["Network", "Math", "Programming", "Physics", "Music"]
#using for loop to check of the begining of each index
in the list
# if begining of "P" letter
for x in L:
    if x[0]=="P":
        print(x)

```

the output of the program :

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> & "C:/Program Files/Python310/pyth
on.exe" "c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/Question 1 _C.py"
Programming
Physics
PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> |
```

D: Using Dictionary comprehension, Generate this dictionary

$d=\{1:1,2:4,3:9,4:16,5:25,6:36,7:49,8:64,9:81,10:100\}$

```
#Defined comprehensioend Dictioerny & using for loop to
generate
#each key and his value (squers) using range method
d= {i:i**2 for i in range(1,11)}
print(d)
```

the output of the porgam:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> & "C:/Program Files/Python310/pyth
on.exe" "c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/Question 1 _C.py"
Programming
Physics
PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> & "C:/Program Files/Python310/pyth
on.exe" "c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/Question 1 _D.py"
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100}
PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> |
```

Question2 : Convert frome decimal to binary:

Write a Python program that converts a decimal number into its equivalent binary number.

The program should start reading the decimal number frome the user. Then the binary equivalent number must be calculated.

Finally , the program must display the equivalent binary number on the screen .

Tips : use empty list to hold binary number, use loop , use % operator ,use // operator, use list append method , reverse the list.

```
#first we using EXCEPTIONS \try-except\ to handle kind
of errors
#if users does not enter a Decimal Integer Value
try:
#using (input) method to let user input his Decimal
Number
    x=int(input("Enter your Decimal Number: "))
#Defined a empty list to put in it the binary value
    your_binary_Number=[]
#using while loop in condition x>0 to calculate the
binary number
    while x>0 :
##Taking the remainder of the division by 2 ,And add the
remainder to the empty list using (append) method
        your_binary_Number.append(x%2)
#Divide by 2 continues until the value 0 is reached and
the loop exits
        x=x//2
#using (reverse) method to reverse the list that contain
the binary value of Decimal number
```

```
#Define an integer number to use loop to print list
after reversing it
    i=0
    while i<len(your_binary_Number):
        print(your_binary_Number[i] , end="")
        i=i+1
#using except if users does not enter a Decimal Integer
Value
except:
    print("ERROR.... DECIMAL INTEGER VALUE
ONLY")
```

في بداية البرنامج قمنا باستخدام التعليمة او ما يسمى الاستثناء (try-except) في حال قام المستخدم بإدخال قيمة ليست عشرية لكي يظهر الخطأ الناتج بشكل واضح للمستخدم

وباستخدام التعليمة Input() سوف يقوم المستخدم بإدخال رقم عشري صحيح
و ثم نقوم بتعريف List[your_binary_Number] وتكون فارغة لإضافة الأرقام
عليها باستخدام تعليمة append() الموجودة في حلقة while().
وباستخدام حلقة while() طالما ان القيمة المدخلة أكبر من الصفر سوف يتم إضافة
الأعداد الثنائية الى List[your_binary_Number] عن طريق التعليمة
append() الناتجة من باقي القسمة على 2 و ثم نتابع القسمة على 2 حتى يصبح الرقم
المدخل 0 و يتحقق الشرط ونخرج من الحلقة .
وباستخدام التعليمة reverse() سوف نقوم بعكس قيم List[your_binary_Number]
للحصول على القيمة الصحيحة للعدد الثنائي وطباعتها باستخدام الحلقة while() .

The output when user enter decimal integer value:

```
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PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> & "C:/Program Files/Python310/python.exe" "c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/Question 2 .py"
Enter your Decimal Number: 55
110111
PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> & "C:/Program Files/Python310/python.exe" "c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/Question 2 .py"
Enter your Decimal Number: 63
111111
PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> & "C:/Program Files/Python310/python.exe" "c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/Question 2 .py"
Enter your Decimal Number: 16
10000
PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> & "C:/Program Files/Python310/python.exe" "c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/Question 2 .py"
Enter your Decimal Number: 47
101111
PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework>
```

```
Enter your Decimal Number: sd
ERROR... DECIMAL INTEGER VALUE ONLY
PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> & "C:/Program Files/Python
310/python.exe" "c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/Question 2 .p
y"
Enter your Decimal Number: $$
ERROR... DECIMAL INTEGER VALUE ONLY
PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework> |
```

If the user does not enter an integer value the output of the program is

Question 3 : Working with Files “Quiz Program”:

Type python quiz program that takes a text or json or csv file as input for (20 (Questions , Answers)). It asks the questions and finally computes and prints users results and store user name and result separate file.

```
import json
#Define an empty dictionary that will be contain
the question of the exam
exam_question={}
#using Input() to let user enter his name
student_name=input("Enter your full name: ")
#making first letter in each word of user name capital
#using strip to delete any spaces in the right or left
the full name
student_name=student_name.title()
student_name=student_name.strip()
#define an integer that indicate for mark user
mark=0
#open exm.json that we made it previously and put in it
the questions and answers
#and we will treat "exam.json" as f
with open ("exam.json","r") as f :
#we put the content of exam.json in empty dictionary
    exam_question=json.load(f)
print("welcome {} \n Your are going to answer of 20
Question about city capitals ".format(student_name))
```



```

#by for loop we are going through keys(the questions) of
dictionary and print it then
#we let the user enter his answer
for s in exam_question.keys():
    print(s)
    a=input("Enter your answer: ")
#using strip() to delete any spaces in right or left the
answer
#using title() for making agreement between the answer
and values in first character
    a=a.strip()
#using if() condition to compare the right answer and
the answer by the user
    if a.title()==exam_question[s]:
#if the answer right we will add 1 to the mark and print
true
#else the program print false
        mark=mark + 1
        print("True")
    else:
        print("False")
#Here using if() condition to evaluate the user based on
his mark
if mark==20:
    print("Excellent \U0001F970 , {} you mark is
{}".format(student_name,mark))
elif mark>15:
    print("Very Good \U0001F970, {} you mark is
{}".format(student_name,mark))
elif mark >= 10:
    print("Good, {} you mark is
{}".format(student_name,mark))
else:
    print("Sorry (\U0001F915 {} you mark is {} and You
Failed".format(student_name,mark))
#Here we are going to create a file and we will name it
"Names.json"
#and we will put the name of the user and his mark in it
.

```

```
with open("Names.json","a") as t:
    mark=str(mark)
    student_name=student_name + " "+mark
    u=json.dump(student_name,t)
```

the output of the program:

```
PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework\Question 3>
PS C:\Users\Salami\Desktop\FirstNetworkProgrmingHomework\Question 3> & "C:/Program Files/Python310/python.exe" "c:/Users/Salami/Desktop/FirstNetworkProgrmingHomework/Question 3/Question 3 .py"
Enter your full name: mohamed salami
welcome Mohamed Salami
Your are going to answer of 20 Question about city capitals
what is capital of Finland?
Enter your answer: helsinki
True
what is capital of Germany?
Enter your answer: berlin
True
what is capital of Syria?
Enter your answer: damascus
True
what is capital of Lebanon?
Enter your answer: beirut
True
what is capital of Palestine?
Enter your answer: jerusalam
False
what is capital of Jordan ?
Enter your answer: amman
True
what is capital of Spain ?
Enter your answer: madrid
True
what is capital of Tunes ?
Enter your answer: tunes
True
```

```
what is capital of Chaina ?
Enter your answer: bejjen
False
what is capital of South Korea?
Enter your answer: seol
True
what is capital of Pakestan ?
Enter your answer: islamabad
True
what is capital of UK
Enter your answer: london
True
what is capital of Tailand?
Enter your answer: pankok
True
what is capital of Iraq ?
Enter your answer: baghdad
True
True
True
True
True
what is capital of Turkey?
Enter your answer: ankara
True
what is capital of Ghana?
Enter your answer: akra
True
Very Good 😊, Mohamed Salami you mark is 18
> a& "C:/Program Files/Python310/python.exe" "c:/
```

The screenshot shows the Visual Studio Code interface with the 'exam.json' file open. The Explorer sidebar on the left shows the project structure with files like 'Question 3.py', 'exam.json', and 'Names.json'. The main editor area displays the content of 'exam.json', which is a JSON array of 20 objects, each containing a question and its capital. The questions are: 'what is capital of Finland?', 'what is capital of Germany?', 'what is capital of Syria?', 'what is capital of Lebanon?', 'what is capital of Palestine?', 'what is capital of Jordan?', 'what is capital of Spain?', 'what is capital of Tunes?', 'what is capital of Egypt?', 'what is capital of Italy?', 'what is capital of France?', 'what is capital of Russia?', 'what is capital of Chaina?', 'what is capital of South Korea?', 'what is capital of Pakestan?', 'what is capital of UK', 'what is capital of Tailand?', 'what is capital of Iraq?', 'what is capital of Turkey?', and 'what is capital of Ghana?'. The corresponding capitals are: 'Helsinki', 'Berlin', 'Damascus', 'Beirut', 'Jerusalem', 'Amman', 'Madrid', 'Tunes', 'Cairo', 'Roma', 'Paris', 'Moscow', 'Beijing', 'Seol', 'Islamabad', 'London', 'Pankok', 'Baghdad', 'Ankara', and 'Akra'.

```
{
  "what is capital of Finland?": "Helsinki",
  "what is capital of Germany?": "Berlin",
  "what is capital of Syria?": "Damascus",
  "what is capital of Lebanon?": "Beirut",
  "what is capital of Palestine?": "Jerusalem",
  "what is capital of Jordan ?": "Amman",
  "what is capital of Spain ?": "Madrid",
  "what is capital of Tunes ?": "Tunes",
  "what is capital of Egypt ?": "Cairo",
  "what is capital of Italy ?": "Roma",
  "what is capital of France ?": "Paris",
  "what is capital of Russia ?": "Moscow",
  "what is capital of Chaina ?": "Beijing",
  "what is capital of South Korea? ": "Seol",
  "what is capital of Pakestan ?": "Islamabad",
  "what is capital of UK ": "London",
  "what is capital of Tailand?": "Pankok",
  "what is capital of Iraq ?": "Baghdad",
  "what is capital of Turkey?": "Ankara",
  "what is capital of Ghana?": "Akra"
}
```

the question file that we named it (exam.json):

the result (name of the user and his mark) putting it in new file and name it (Name.json)

The screenshot shows the Visual Studio Code interface with the 'Names.json' file open. The Explorer sidebar on the left shows the project structure with files like 'Question 3.py', 'exam.json', and 'Names.json'. The main editor area displays the content of 'Names.json', which is a JSON array containing one object with the user's name and mark: 'Mohamed Salami 18'.

```
{
  "Mohamed Salami 18"
}
```

في البداية قمنا ب استيراد مكتبة `json` ثم قمنا بتعريف `dictionary` اسمه `exame_question` فارغ ل تحميل ملف الأسئلة فيه والتعامل معه ك `object` في بايثون ثم عن طريق التعليمة `input()` سوف يقوم المستخدم بإدخال اسمه ثم نقوم ع طريق التعليمة `strip ()` بحذف الفراغات في حال اضافتها من قبل المستخدم على يمين و ويسار الاسم .
`Title()` وعن طريق التعليمة السابقة سوف نقوم بجعل الحرف الأول من الاسم كبير. ثم عن طريق التعليمة `with` سوف نقوم بفتح الملف `exam.json` وقراءته والتعامل معه على انه `f` وتحميله في ال `dictionary` عن طريق التعليمة `load()`
ثم عن طريق التعليمة `for` سوف نمر على كل عنصر (`key`) من `exame_question` وندع المستخدم يدخل الجواب ثم نقوم بحذف الإضافات و جعل الحرف الأول كبير عن طريق التعليمتين `input()` , `strip ()` وعن طريق التعليمة `If()` في حال تساوي القيم سوف يطبع `true` ويقوم بزيادة ال `mark` بمقدار `1` وفي حال كانت الإجابة خاطئة سوف يطبع `false` ثم قمنا بتقييم الطالب على حسب علامته وذلك عن طريق التعليمة `if()` وبعد ذلك قمنا بفتح ملف جديد عن طريق التعليمة `with` اسمه `Names.json` ثم والاجراء المتبع معه هو `"a"` والذي يعني `append` والتعامل مع ك `object` اسمه `t` ثم بعد ذلك قمنا بوضع اسم الطالب وعلامته في الملف الجديد عن طريق التعليمة `json.dump` .