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Syrian Arab Republic

Lattakia - Tishreen University

Department of Communication and  
electrical engineering

5<sup>th</sup> , Network Programming : Homework  
No1



الجمهورية العربية السورية

اللائقية - جامعة تشرين

كلية الهندسة الكهربائية والميكانيكية

قسم هندسة الاتصالات والالكترونيات

السنة الخامسة: وظيفة ١ برمجة شبكات

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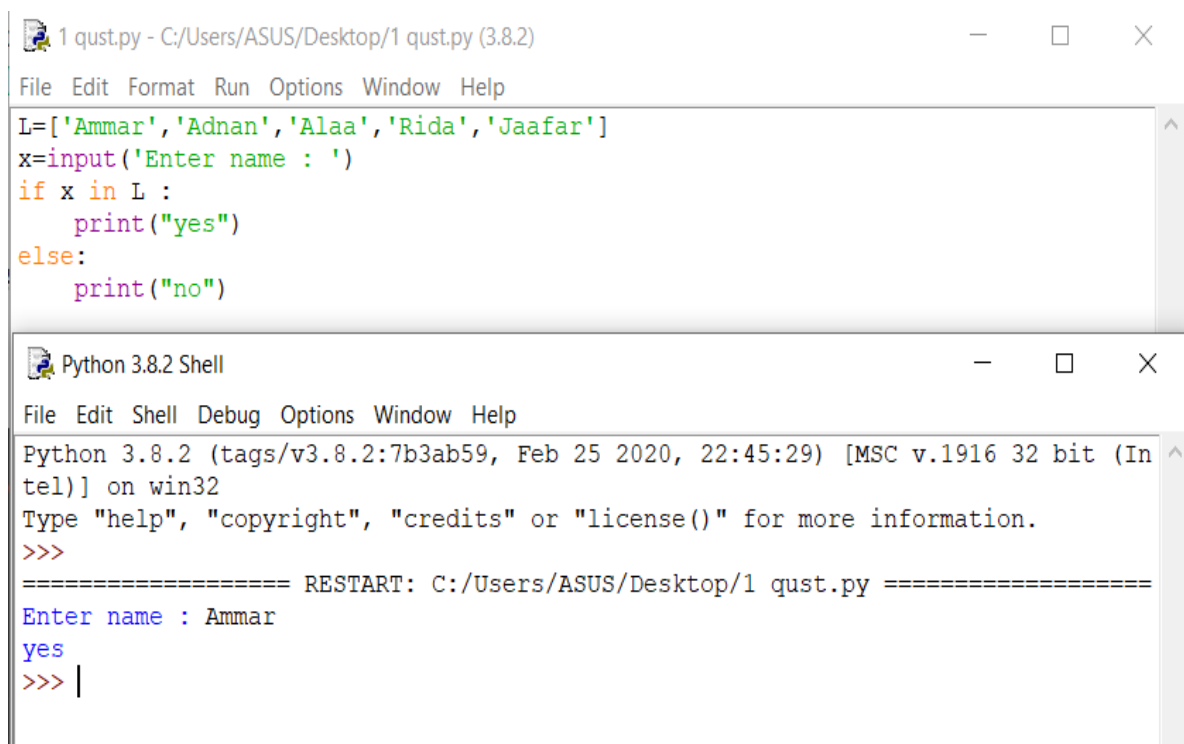
***Homework Number :*** 1

## 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 is graduated or not.

قمنا بتعريف list تحوي خمسة اسماء وتم طلب من المستخدم ادخال اسم عن طريق  
تعليلة if تختبر اذا كان الاسم المدخل موجود ضمن list فيطبع yes واذا لم يكون  
الاسم موجود يطبع no



The screenshot shows two windows from a Python IDE. The top window, titled '1 qust.py - C:/Users/ASUS/Desktop/1 qust.py (3.8.2)', contains the following Python code:

```
File Edit Format Run Options Window Help
L=['Ammar','Adnan','Alaa','Rida','Jaafar']
x=input('Enter name : ')
if x in L :
    print("yes")
else:
    print("no")
```

The bottom window, titled 'Python 3.8.2 Shell', shows the execution of the program:

```
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/ASUS/Desktop/1 qust.py =====
Enter name : Ammar
yes
>>> |
```

B- Generate and print a list of odd numbers from 1 to 1000.

### Tips: "List Comprehension"

قمنا بتعريف حلقة for داخل list ضمن مجال من 1 الى 1000 وعند كل لفة تختبر العدد ضمن تعليمة if حيث اذا كان باقي قسمته على 2 لا تساوي الصفر أي هو عدد فردي فيتم تخزينه ضمن list واذا كان باقي قسمته على 2 تساوي الصفر أي هو عدد زوجي فيتم اهماله

```
bvb.py - C:/Users/ASUS/Desktop/bvb.py (3.8.2)
File Edit Format Run Options Window Help
x=[y for y in range (1,1000) if y%2!=0]
print (x)

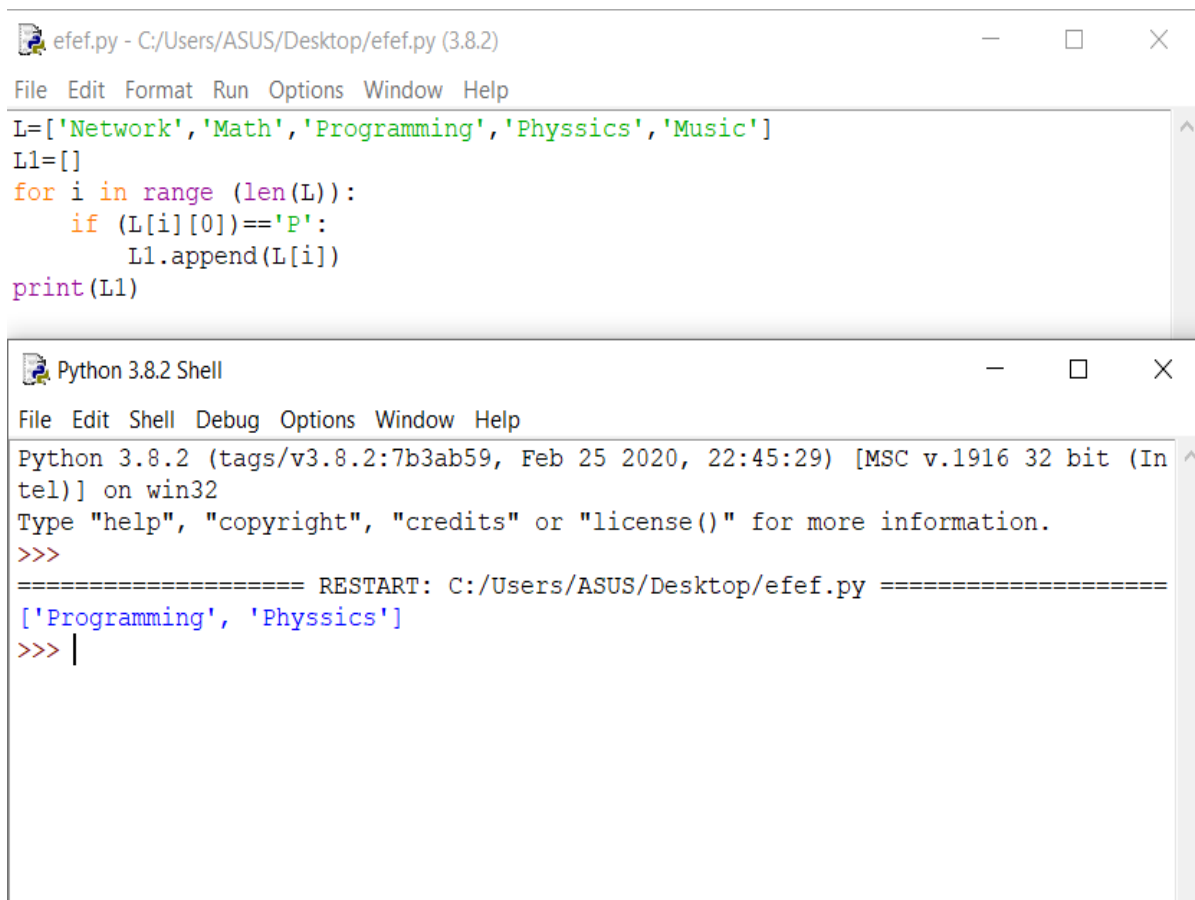
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/ASUS/Desktop/bvb.py =====
[1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 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, 135, 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, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291, 293, 295, 297, 299, 301, 303, 305, 307, 309, 311, 313, 315, 317, 319, 321, 323, 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, 397, 399, 401, 403, 405, 407, 409, 411, 413, 415, 417, 419, 421, 423, 425, 427, 429, 431, 433, 435, 437, 439, 441, 443, 445, 447, 449, 451, 453, 455, 457, 459, 461, 463, 465, 467, 469, 471, 473, 475, 477, 479, 481, 483, 485, 487, 489, 491, 493, 495, 497, 499, 501, 503, 505, 507, 509, 511, 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, 585, 587, 589, 591, 593, 595, 597, 599, 601, 603, 605, 607, 609, 611, 613, 615, 617, 619, 621, 623, 625, 627, 629, 631, 633, 635, 637, 639, 641, 643, 645, 647, 649, 651, 653, 655, 657, 659, 661, 663, 665, 667, 669, 671, 673, 675, 677, 679, 681, 683, 685, 687, 689, 691, 693, 695, 697, 699, 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, 773, 775, 777, 779, 781, 783, 785, 787, 789, 791, 793, 795, 797, 799, 801, 803, 805, 807, 809, 811, 813, 815, 817, 819, 821, 823, 825, 827, 829, 831, 833, 835, 837, 839, 841, 843, 845, 847, 849, 851, 853, 855, 857, 859, 861, 863, 865, 867, 869, 871, 873, 875, 877, 879, 881, 883, 885, 887, 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, 961, 963, 965, 967, 969, 971, 973, 975, 977, 979, 981, 983, 985, 987, 989, 991, 993, 995, 997, 999]
>>> |
```

**C-** L=['Network' , 'Math' , 'Programming' , 'P hysics' , 'Music']

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

**Tips:** using loop, list 'len ()' method

قمنا بتعريف list تحوي 5 عناصر وقمنا بتعريف list فارغة وقمنا بتعريف حلقة for مجالها حتى طول list الأولى وثم اختبرنا اذا كان اول حرف من العنصر هو الحرف p عن طريق تعليمة if حيث اذا تحقق الشرط نقوم بتخزين العنصر في list الفارغة



The screenshot shows a Python IDE with two windows. The top window, titled 'efef.py - C:/Users/ASUS/Desktop/efef.py (3.8.2)', contains the following Python code:

```
File Edit Format Run Options Window Help
L=['Network','Math','Programming','Physsics','Music']
L1=[]
for i in range (len(L)):
    if (L[i][0])=='P':
        L1.append(L[i])
print(L1)
```

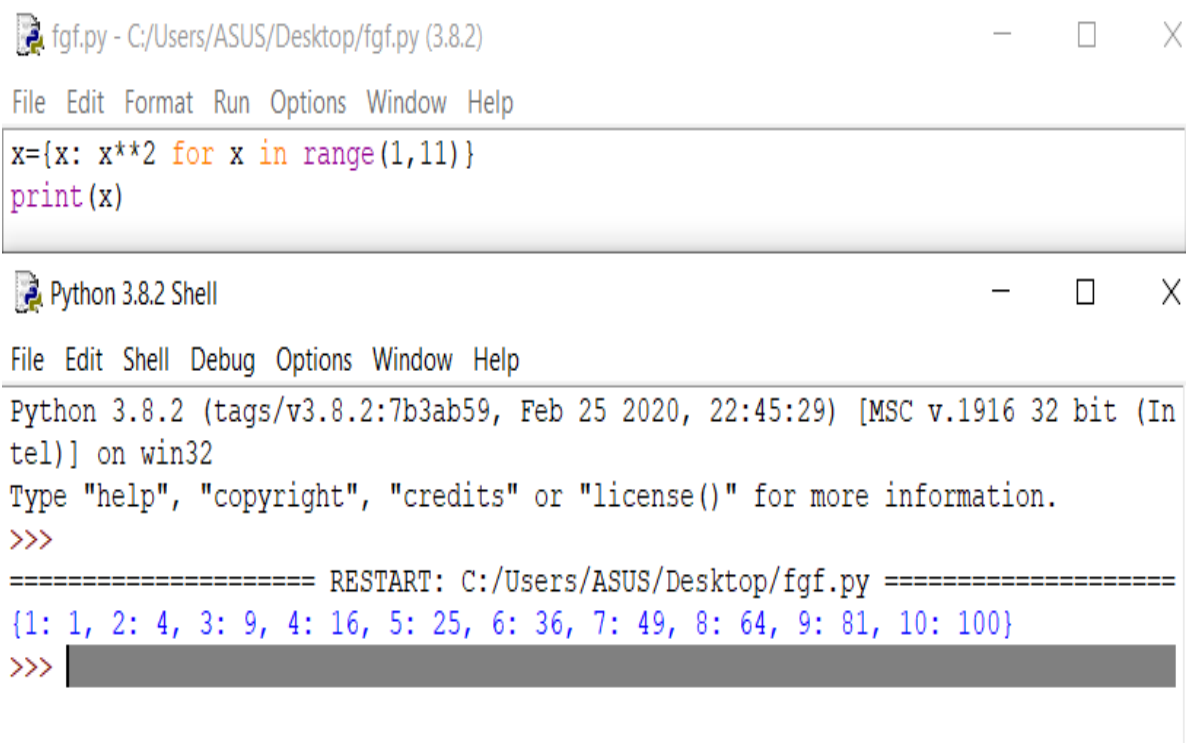
The bottom window, titled 'Python 3.8.2 Shell', shows the output of the script:

```
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/ASUS/Desktop/efef.py =====
['Programming', 'Physsics']
>>> |
```

**D: Using Dictionary comprehension, Generate this dictionary**

`d={1:1,2:4,3:9,4:16,5:25,6:36,7:42,8:64,9:81,10:100}`

تم تعريف dictionary ووضعنا فيه حلقة for مجالها من 1 الى 11 عند كل لفه من الحلقة يتم تخزين رقم اللفة كمفتاح وناتج تربيع الرقم كقيمة



The screenshot shows two windows from a Python IDE. The top window, titled 'fgf.py - C:/Users/ASUS/Desktop/fgf.py (3.8.2)', contains the following code:

```
File Edit Format Run Options Window Help
x={x: x**2 for x in range(1,11)}
print(x)
```

The bottom window, titled 'Python 3.8.2 Shell', shows the execution output:

```
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/ASUS/Desktop/fgf.py =====
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100}
>>>
```

## Question 2: Convert from decimal to binary

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

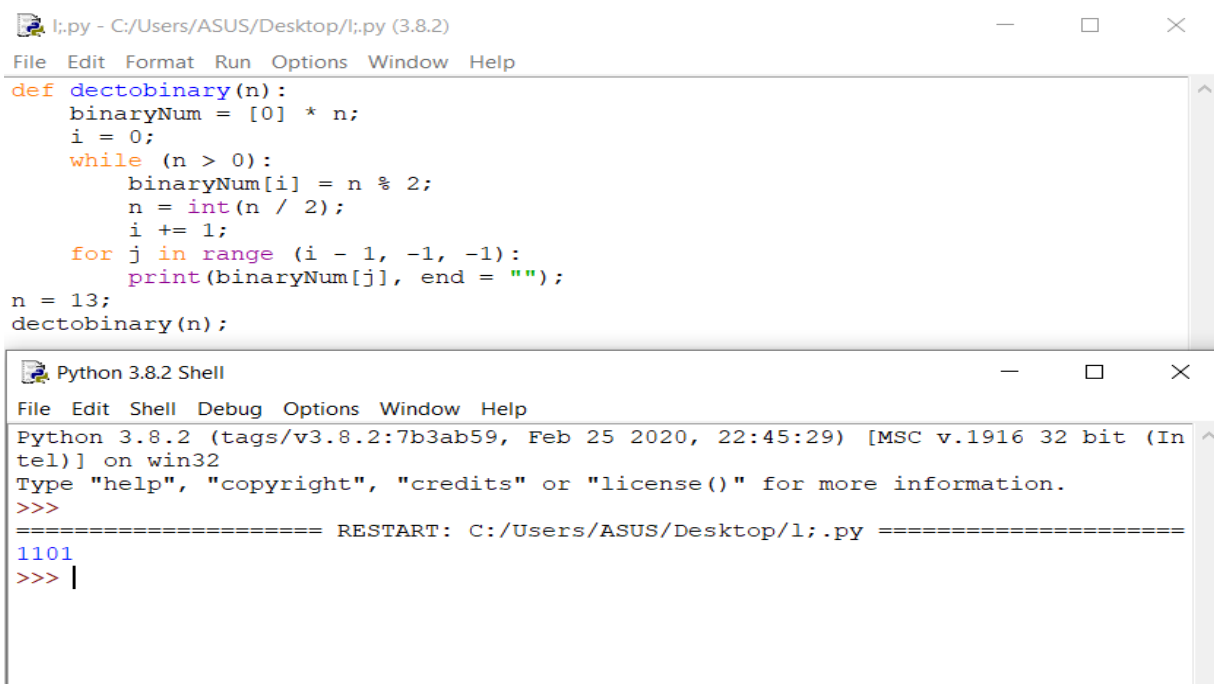
The program should start reading the decimal number from the user. Then the binary equivalent number must be calculated. Finally, the program must display the equivalent binary number on the screen.

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

استخدمنا قائمة binaryNum لتخزين العدد الثنائي وقمنا بتعريف عداد لقائمة العدد الثنائي

وقمنا بتخزين باقي القسمة في مصفوفة العدد الثنائي وطبعنا عناصر المصفوفة بترتيب معكوس

واختبرنا البرنامج عن طريق تحويل العدد 13 الى ثنائي



```
l;.py - C:/Users/ASUS/Desktop/l;.py (3.8.2)
File Edit Format Run Options Window Help
def dectobinary(n):
    binaryNum = [0] * n;
    i = 0;
    while (n > 0):
        binaryNum[i] = n % 2;
        n = int(n / 2);
        i += 1;
    for j in range(i - 1, -1, -1):
        print(binaryNum[j], end = "");
n = 13;
dectobinary(n);

Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020, 22:45:29) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/ASUS/Desktop/l;.py =====
1101
>>> |
```

### 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 user results and store user name and result in separate file.

قمنا بتعريف أسئلة من نوع string ثم عرفنا متغير من نوع dictionary ووضعنا الأسئلة كمفتاح له و الأجوبة كقيمة له ثم قمنا بتعريفه كملف json اسمه ammar ثم فتحناه للكتابة

amm1.py - C:\Users\ASUS\Desktop\amm1.py (3.8.2)

File Edit Format Run Options Window Help

```
import json
amm = {
    ""1) What is the capital of France ?
a.Paris
b.Cairo
"": "a",
    ""2) What is the capital of Britain ?
a.London
b.Paris
"": "a",
    ""3) What is the capital of Spain ?
a.Madrid
b.Paris
"": "a",
    ""4) What is the capital of Italy?
a.Rome
b.Paris
"": "a",
    ""5) What is the capital of German?
a.Berlin
b.Paris
"": "a",
    ""6) What is the capital of Oman ?
a.Muscat
b.Paris
"": "a",
    ""7) What is the capital of China ?
a.Bekin
b.Paris
"": "a",
    ""8) What is the capital of Japan?
a.Tokyo
b.Paris
"": "a",
    ""9) What is the capital of Russia?
a.Moscow
b.Paris
"": "a",
    ""10) What is the capital of Egypt ?
a.Cairo
b.Paris
"": "a",
    ""11) What is the capital of Syria ?
a.Moscow
b.Damascus
"": "b",
```

```
""12) What is the capital of Iran ?
a.Moscow
b.Tahran
"": "b",
    ""13) What is the capital of Lebanon?
a.Moscow
b.Beirut
"": "b",
    ""14) What is the capital of Iraq?
a.Moscow
b.Baghdad
"": "b",
    ""15) What is the capital of Yemen?
a.Moscow
b.Sana'a
"": "b",
    ""16) What is the capital of Somalia ?
a.Moscow
b.Mogadishu
"": "b",
    ""17) What is the capital of Morocco?
a.Moscow
b.Elratat
"": "b",
    ""18) What is the capital of Bahrain?
a.Moscow
b.Manama
"": "b",
    ""19) What is the capital of Jordan?
a.Moscow
b.Amman
"": "b",
    ""20) What is the capital of Romania?
a.Moscow
b.Bucharest
"": "b",
}
amm= json.dumps(amm)
with open("amm.json","w") as f:
    f.write(amm)
```

ثم قمنا بطباعة المتغيرات التي سوف يعتمد عليها المستخدم لحل الأسئلة  
عرفنا متغير int لمعرفة النتيجة حيث يعمل كعداد وعرفنا dictionary فارغة و  
list فارغة وطلبنا من المستخدم ادخال اسمه وقمنا باستدعاء ملف json وفتحناه  
للقراءة

amm2.py - C:\Users\ASUS\Desktop\amm2.py (3.8.2)

File Edit Format Run Options Window Help

```
import json
amm1=0
amm2= {}
amm3 = []
name = input(" name :")
with open("amm2.json","r") as f:
    ammar=json.loads(f.read())
    for i in ammar :
        print(i)
        a1 = input("enter a or b :")
        amm3.append(a1)
        if a1 ==amm2[i]:
            amm1=amm1+1
        else:
            amm1=amm1-1

amm2 ={name:amm3}
print(amm2)

print("The result :",amm1)
```

\*Python 3.8.2 Shell\*

File Edit Shell Debug Options Window Help

Python 3.8.2 (tags/v3.8.2:7b3ab59, Feb 25 2020) on win32

Type "help", "copyright", "credits" or "license()" for more  
>>>

===== RESTART: C:\Users\ASUS\Shell>

name :amm2

1) What is the capital of France ?

a.Paris

b.Cairo

enter a or b :a

2) What is the capital of Britain ?

a.London

b.Paris

enter a or b :a

3) What is the capital of Spain ?

a.Madrid

b.Paris

enter a or b :a

4) What is the capital of Italy?

a.Rome

b.Paris

enter a or b :a

5) What is the capital of German?

a.Berlin

b.Paris

enter a or b :a

6) What is the capital of Oman ?

a.Muscat

b.Paris

enter a or b :a

7) What is the capital of China ?

a.Beijing

b.Paris



Python 3.8.2 Shell

File Edit Shell Debug Options Window Help

enter a or b :a  
8) What is the capital of Japan?  
a.Tokyo  
b.Paris  
  
enter a or b :a  
9) What is the capital of Russia?  
a.Moscow  
b.Paris  
  
enter a or b :a  
10) What is the capital of Egypt ?  
a.Cairo  
b.Paris  
  
enter a or b :a  
11) What is the capital of Syria ?  
a.Moscow  
b.Damascus  
  
enter a or b :b  
12) What is the capital of Iran ?  
a.Moscow  
b.Tahran  
  
enter a or b :b  
13) What is the capital of Lebanon?  
a.Moscow  
b.Beirut  
  
enter a or b :b  
14) What is the capital of Iraq?  
a.Moscow  
b.Baghdad  
  
enter a or b :b  
15) What is the capital of Yemen?  
a.Moscow  
b.Sana'a

enter a or b :b  
16) What is the capital of Somalia ?  
a.Moscow  
b.Mogadishu  
  
enter a or b :b  
17) What is the capital of Morocco?  
a.Moscow  
b.Elratat  
  
enter a or b :b  
18) What is the capital of Bahrain?  
a.Moscow  
b.Manama  
  
enter a or b :b  
19) What is the capital of Jordan?  
a.Moscow  
b.Amman  
  
enter a or b :b  
20) What is the capital of Romania?  
a.Moscow  
b.Bucharest  
  
enter a or b :b  
{'ammar': ['a', 'a', 'a', 'a', 'a', 'a', 'a', 'a', 'a', 'a', 'b', 'b', 'b', 'b',  
'b', 'b', 'b', 'b', 'b', 'b']}  
The result : 20  
>>>

Ln 50, Col 0

End the homework