Syrian Arab Republic

Lattakia - Tishreen University

Department of Communication and
electrical engineering

5th , Network Programming : Homework
No1

الجمهورية العربية السورية

اللاذقية ـجامعــة تشريـــن

كلية الهندسة الكهربائية والميكانيكية

قسم هندسة الاتصالات والالكترونيات

السنة الخامسة: وظيفة١ برمجة شبكات

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First Network Programming Homework

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.

يتم تعريف قائمة تحوي مجموعة من الأسماء ،يطلب من المستخدم ادخال الاسم

- اذا كان ضمن القائمة يطبع الاسم

- اذا لم يجد الاسم يطبع :الاسم غير موجود.

a.q1.py - C:/Users/soso/AppData/Local/Programs/Python/Python39/a.q1.py (3.9.7)   —   □   ✕

File Edit Format Run Options Window Help

```python
list1 = ['Ali', 'Bana','hala','sara','karam']
studentname = input ('inter student name')
if studentname in (list1) :
        print (studentname)
else :
        print (" this name doesn't exists ")
```
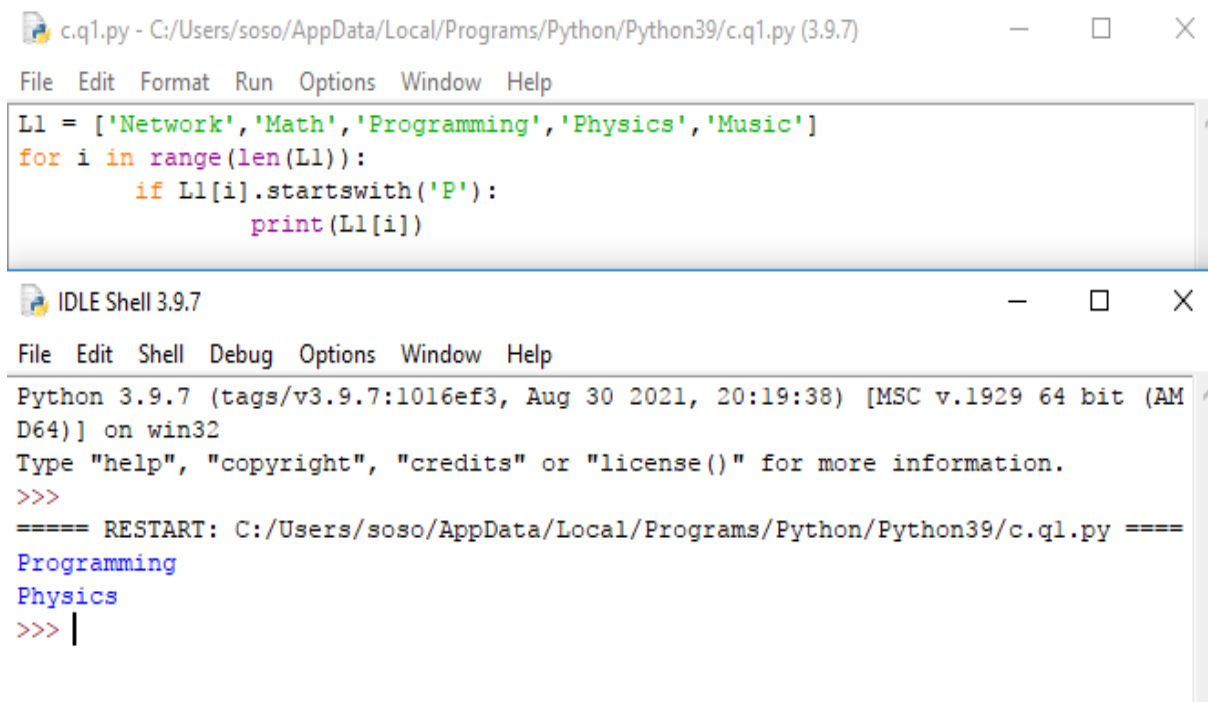
IDLE Shell 3.9.7   —   □   ✕

File Edit Shell Debug Options Window Help

```
Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 b
it (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/soso/AppData/Local/Programs/Python/Python39/a.q1.p
y ====
inter student nameAli
Ali
>>>
>>>
===== RESTART: C:/Users/soso/AppData/Local/Programs/Python/Python39/a.q1.p
y ====
inter student name rawan
 this name doesn't exists
>>> |
```

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

Tips: "List Comprehension"

باستخدام list comprehension تم توليد قائمة من الأرقام الفردية
بين1 و 1000:

C- L=['Network' , 'Math' , 'Programming', 'Physics' , '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

باستخدام حلقة for تمر على كل عناصر المصفوفة، نستخدم التابع
startswith للبحث عن الكلمة التي تبدأ بحرف P وطباعتها :
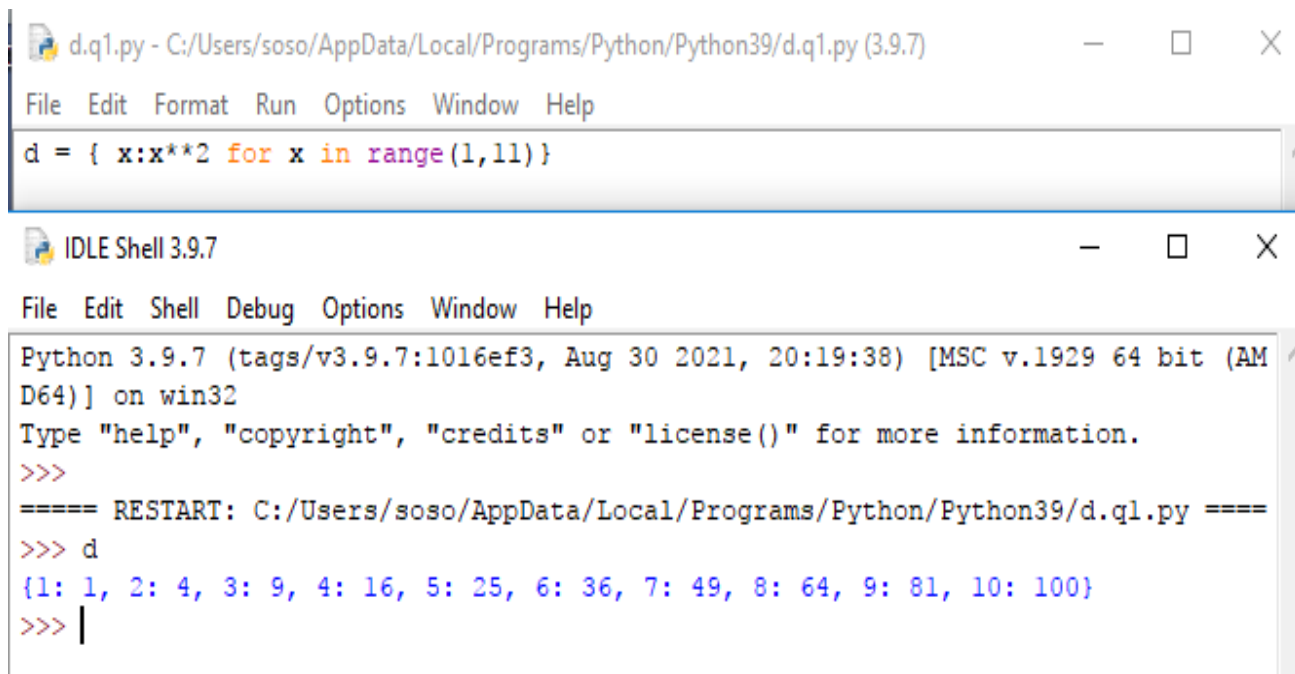
```
L1 = ['Network','Math','Programming','Physics','Music']
for i in range(len(L1)):
        if L1[i].startswith('P'):
                print(L1[i])
```

```
Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit (AM
D64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/soso/AppData/Local/Programs/Python/Python39/c.q1.py ====
Programming
Physics
>>>
```

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}

طباعة مربع الأعداد ضمن المجال من ١ لـ 10 ووضعها ضمن قاموس:

```
d.q1.py - C:/Users/soso/AppData/Local/Programs/Python/Python39/d.q1.py (3.9.7)        —    □    X
File  Edit  Format  Run  Options  Window  Help
d = { x:x**2 for x in range(1,11)}
```

```
IDLE Shell 3.9.7                                                                     —    □    X
File  Edit  Shell  Debug  Options  Window  Help
Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit (AM
D64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/soso/AppData/Local/Programs/Python/Python39/d.q1.py ====
>>> d
{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
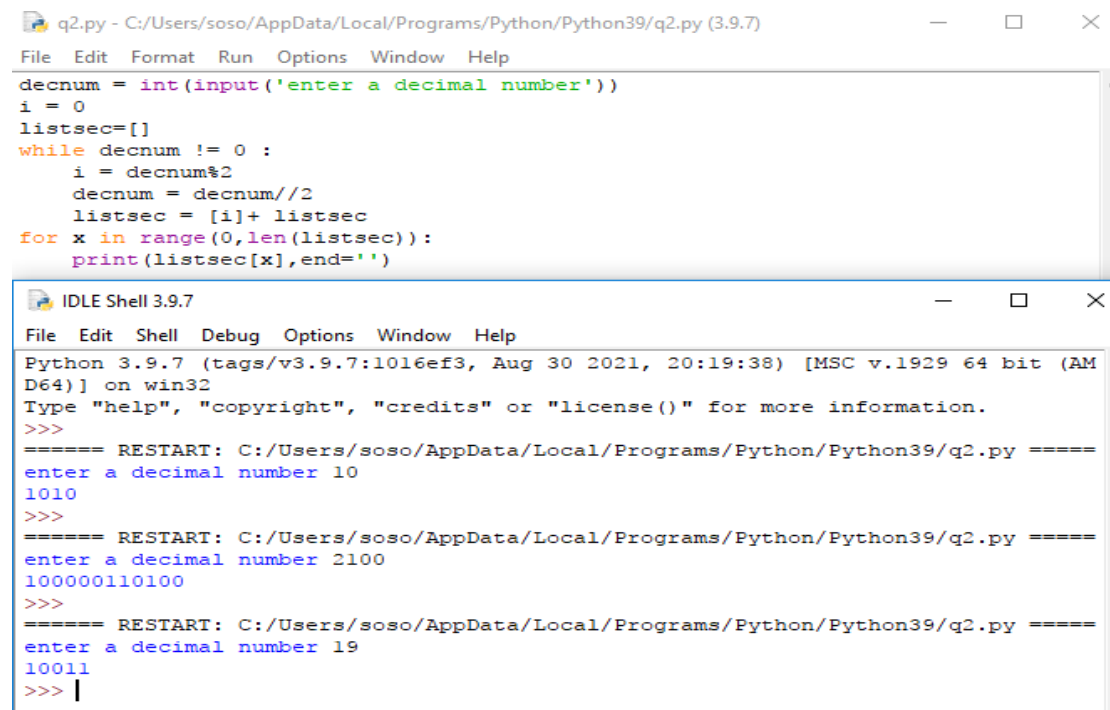
Write a Python program that converts a decimal number into its equivalent binary number.
The program should start reading the decimal number from the user. Then the binary equivalent number must be
calculated. Finally, the program must display the equivalent binary number on the screen.
Tips: use empty list to hold binary number, use loop, use % operator, use // operator, use list append method, reverse the list.

تحويل الأعداد العشرية الى أعداد ثنائية:

باستخدام حلقتين while و for

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.

تم اضافة ٢٠ سؤال ووضعهم ضمن dictionary بملف json:


```python
import json
Q1= """ What does this function do?len():
  a)Number of items in array
  b)Index of the value withen the array"""
Q2=""" What does this function do?max():
      a)The maximum number
      b)The minimum number"""
Q3="""What does this function do?min():
a)The maximum number
b)The minimum number"""
Q4="""What does this function do?sum():
a)Adds an object to the array
b)sum of numbers"""
Q5="""What does this function do?index():
a)Index of the value withen the array
b)Number of items in array"""
Q6="""What does this function do?reverse():
a)Index of the value withen the array
b)Reflects the elements of the array"""
Q7="""What does this function do?clear():
a)Completly delets the array elements
b)Adds an object to the array"""
Q8="""What does this function do?del():
a)Completly delets the array elements
b)Delete the last element of the array"""
Q9="""What does this function do?insert():
a)Adds a word to the array index
b)Adds an object to the array"""
Q10="""What does this function do?append():
a)Adds a word to the array index
b)Adds an object to the array """
Q11="""What does this function do?upper():
a)all characters are capital letters
b)all characters are lowercase"""
Q12="""What does this function do?lower():
a)all characters are capital letters
b)all characters are lowercase"""
Q13="""What does this function do?count():
a)all characters are lowercase
b)count the number of times a character is repeated"""
```
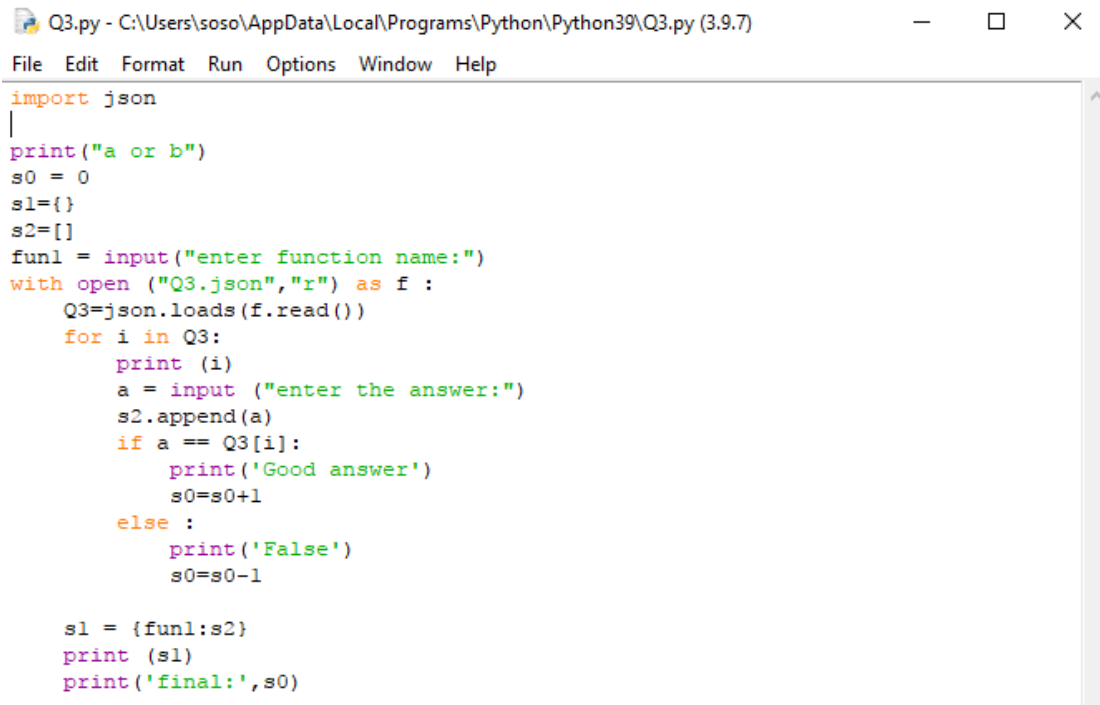
```python
a)Adds a word to the array index
b)Adds an object to the array """
Q11="""What does this function do?upper():
a)all characters are capital letters
b)all characters are lowercase"""
Q12="""What does this function do?lower():
a)all characters are capital letters
b)all characters are lowercase"""
Q13="""What does this function do?count():
a)all characters are lowercase
b)count the number of times a character is repeated"""
Q14="""What does this function do?capitlize():
a)The first letter in capital
b)all characters are capital letters"""
Q15="""What does this function do?title():
a)each character after the space is capitalized
b)all characters are capital letters"""
Q16="""What does this function do?rstrip():
a)Delete the spaces from the end of str
b)all characters are lowercase"""
Q17="""What does this function do?extend():
a)all characters are lowercase
b)adds more than object """
Q18="""What does this function do?split():
a)convert to list
b)convert to string"""
Q19="""What does this function do?join():
a)convert to list
b)convert to string"""
Q20="""What does this function do?remove():
a)Delete the first apperance
b)Delete the spaces from the end of str"""

Questions = {Q1:'a',Q2:'a',Q3:'b',Q4:'b',Q5:'a',Q6:'b',Q7:'a',Q8:'b',Q9:'a'
            ,Q10:'b',Q11:'a',Q12:'b',Q13:'b',Q14:'a',Q15:'a',Q16:'a',Q17:'b'
            ,Q18:'a',Q19:'b',Q20:'a'}
Q = json.dumps(Questions)
with open ("Q.json","w")as f:
    f.write(Q)
```

ونكتب كود ضمن ملف يعرض الأسئلة ويقوم المستخدم بالإجابة على
الأسئلة اذا كانت صحيحة يطبع ان الجواب صحيح وإلا يطبع خطأ

```
Q3.py - C:\Users\soso\AppData\Local\Programs\Python\Python39\Q3.py (3.9.7)          —   □   ×

File  Edit  Format  Run  Options  Window  Help

import json

print("a or b")
s0 = 0
s1={}
s2=[]
fun1 = input("enter function name:")
with open ("Q3.json","r") as f :
    Q3=json.loads(f.read())
    for i in Q3:
        print (i)
        a = input ("enter the answer:")
        s2.append(a)
        if a == Q3[i]:
            print('Good answer')
            s0=s0+1
        else :
            print('False')
            s0=s0-1

    s1 = {fun1:s2}
    print (s1)
    print('final:',s0)
```

تكون النتائج بالشكل :

```
a or b
enter function name:len
 What does this function do?len():
  a)Number of items in array
  b)Index of the value withen the array
enter the answer:a
Good answer
 What does this function do?max():
      a)The maximum number
      b)The minimum number
enter the answer:a
Good answer
What does this function do?min():
a)The maximum number
b)The minimum number
enter the answer:b
Good answer
What does this function do?sum():
a)Adds an object to the array
b)sum of numbers
enter the answer:b
Good answer
What does this function do?index():
a)Index of the value withen the array
b)Number of items in array
enter the answer:b
False
What does this function do?reverse():
a)Index of the value withen the array
b)Reflects the elements of the array
enter the answer:a
False
What does this function do?clear():
a)Completly delets the array elements
b)Adds an object to the array
enter the answer:a
```

```
enter the answer:a
Good answer
What does this function do?del():
a)Completly delets the array elements
b)Delete the last element of the array
enter the answer:a
False
What does this function do?insert():
a)Adds a word to the array index
b)Adds an object to the array
enter the answer:a
Good answer
What does this function do?append():
a)Adds a word to the array index
b)Adds an object to the array
enter the answer:a
False
What does this function do?upper():
a)all characters are capital letters
b)all characters are lowercase
enter the answer:b
False
What does this function do?lower():
a)all characters are capital letters
b)all characters are lowercase
enter the answer:b
Good answer
What does this function do?count():
a)all characters are lowercase
b)count the number of times a character is repeated
enter the answer:b
Good answer
What does this function do?capitlize():
a)The first letter in capital
b)all characters are capital letters
enter the answer:a
Good answer
What does this function do?title():
a)each character after the space is capitalized
b)all characters are capital letters
```

```
enter the answer:b
Good answer
What does this function do?capitlize():
a)The first letter in capital
b)all characters are capital letters
enter the answer:a
Good answer
What does this function do?title():
a)each character after the space is capitalized
b)all characters are capital letters
enter the answer:a
Good answer
What does this function do?rstrip():
a)Delete the spaces from the end of str
b)all characters are lowercase
enter the answer:b
False
What does this function do?extend():
a)all characters are lowercase
b)adds more than object
enter the answer:a
False
What does this function do?split():
a)convert to list
b)convert to string
enter the answer:a
Good answer
What does this function do?join():
a)convert to list
b)convert to string
enter the answer:a
False
What does this function do?remove():
a)Delete the first apperance
b)Delete the spaces from the end of str
enter the answer:a
Good answer
{'len': ['a', 'a', 'b', 'b', 'b', 'a', 'a', 'a', 'a', 'a', 'b', 'b', 'b', 'a', 'a', 'b', 'a', 'a', 'a', 'a']}
final: 4
```