

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 والالكترونيات

السنة الخامسة: وظيفة ١ برمجة شبكات

Name: زينب حسن البري, Number: 2422, Submitted To GitHub: ZeinabAlbri

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.

hom1A.py - C:/Users/ASUS/Desktop/python homework/hom1A.py (3.9.7)

File Edit Format Run Options Window Help

```
list=['zeinab','abeer','hala','amaar','reem','sameer','hasan']
name=input('enter the student name to show if he is agraduate or not:')
if name in list:
    print ('this user is graduated')
else:
    print('this user is not graduated')
```

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 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

>>>

===== RESTART: C:/Users/ASUS/Desktop/python homework/hom1A.py =====

enter the student name to show if he is agraduate or not:zeinab

this user is graduated

>>>

===== RESTART: C:/Users/ASUS/Desktop/python homework/hom1A.py =====

enter the student name to show if he is agraduate or not:rana

this user is not graduated

>>>

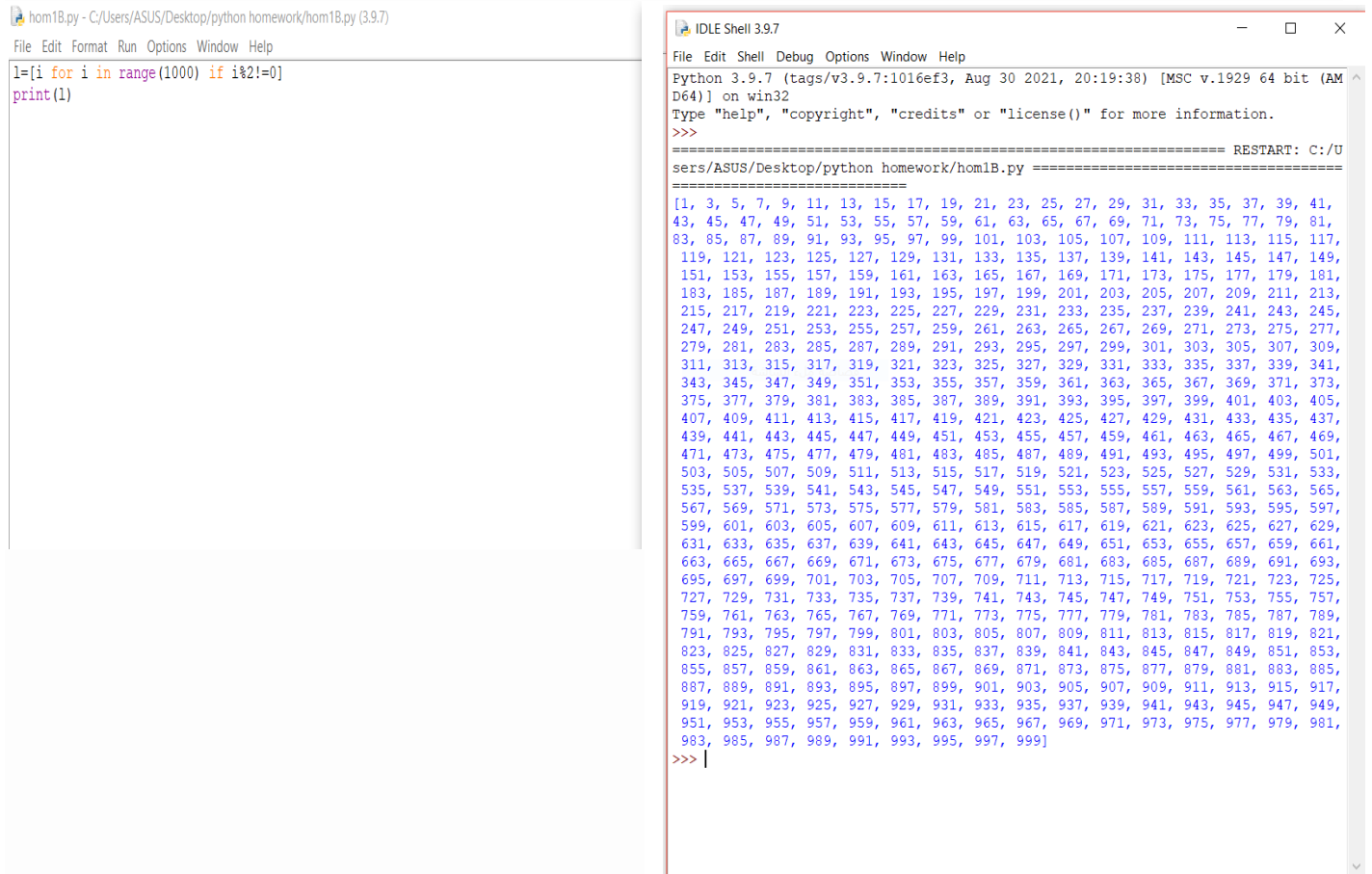
إنشاء قائمة تحوي أسماء الطلاب المتخرجين وليكن 7 طلاب ،البرنامج يقبل اسم الطالب وذلك عن طريق التابع

Input يستطيع قراءة اسم المستخدم من شاشة الإدخال ويعيد نمط String نضعه في متغير

ثم عن طريق التعليمة الشرطية نختبر الشرط اذا كان اسم الطالب ضمن القائمة يتحقق الشرط وينفذ التعليمة ويطبع أن

المستخدم متخرج،وإذا كان اسم الطالب غير موجود ضمن القائمة لايتحقق الشرط وتنفذ التعليمة الثانية ويطبع أن
المستخدم غير متخرج.

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



The image shows a screenshot of a Python IDE (IDLE Shell 3.9.7) displaying the output of a Python script. The script, named 'hom1B.py', is located at 'C:/Users/ASUS/Desktop/python homework/hom1B.py (3.9.7)'. The code in the script is:

```
l=[i for i in range(1000) if i%2!=0]
print(l)
```

The output of the script is a long list of odd numbers from 1 to 999, displayed in a single line. The list starts with 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].

إنشاء قائمة تحوي قيم i حيث يمر على كامل المجال من ١ وحتى ١٠٠٠ ولكن يأخذ فقط القيم التي تحقق الشرط باقي

قسمته على ٢ لاتساوي الصفر أي عدد فردي وتوضع ضمن القائمة ثم طباعتها

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.

hom1C.py - C:/Users/ASUS/Desktop/python homework/hom1C.py (3.9.7)

File Edit Format Run Options Window Help

```
l=['Network','Math','Programming','Physics','Music']
flag=False
print("items that starts with 'P' letter :")
for i in range(len(l)):
    if l[i].startswith('P'):
        print(l[i],end=' , ')
        flag=True
if not flag:
    print('not found')
```

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 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/ASUS/Desktop/python homework/hom1C.py =====
items that starts with 'P' letter :
Programming , Physics ,
>>> |
```

قصاصه مله الشاشة

إنشاء حلقة للمرور على عناصر القائمة حيث i تأخذ القيم ٠,١,٢,٣,٤

ثم يختبر الشرط اذا كان اول محرف من كل عنصر هو المحرف المطلوب يتحقق الشرط وتنفذ تعليمة طباعة هذا العنصر وتصبح قيمه المتغير true =flag بدلا من false

وإذا لم يكن العنصر يبدأ بالمحرف لا يتحقق الشرط ولا تنفذ تعليمات التابعة ل if

بفرض أن القائمة لا تحوي أي عنصر يبدأ بالمحرف المطلوب بالتالي تعليمات الشرطية لا تنفذ ولا مرة وتبقى

Flag=false والتابع not يعطي معكوس False بالتالي يتحقق الشرط وتنفذ تعليمة طباعة

لا يوجد عناصر تبدأ بالمحرف المطلوب.

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}

hom1D.py - C:/Users/ASUS/Desktop/python homework/hom1D.py (3.9.7)

File Edit Format Run Options Window Help

```
d={num:num*num for num in range(1,11)}  
print(d)
```

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 bit (AMD64)] on win32

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

>>>

===== RESTART: C:/Users/ASUS/Desktop/python homework/hom1D.py =====

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

>>> |

إنشاء قاموس المفتاح تبعه هو المتغير num

حيث يأخذ القيم من ١ وحتى ١٠ باستخدام الحلقة

Value تبعه هي مربع القيمة num

ثم طباعة القاموس

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

hom2.py - C:/Users/ASUS/Desktop/python homework/hom2.py (3.9.7)

File Edit Format Run Options Window Help

```
dnum=int(input('enter the decimal number:'))
i=0
bnum=[]
while dnum!=0:
    rem=dnum%2
    bnum.append(rem)
    i=i+1
    dnum=dnum//2
i=i-1
print('\nEquivalent Binary Value is :',end=' ')
while i>=0:
    print(end=str(bnum[i]))
    i=i-1
print()
```

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 bit (AMD64)] on win32

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

>>>

===== RESTART: C:/Users/ASUS/Desktop/python homework/hom2.py =====
enter the decimal number:20

Equivalent Binary Value is : 10100

>>>

===== RESTART: C:/Users/ASUS/Desktop/python homework/hom2.py =====
enter the decimal number:70

Equivalent Binary Value is : 1000110

>>>

===== RESTART: C:/Users/ASUS/Desktop/python homework/hom2.py =====
enter the decimal number:225

Equivalent Binary Value is : 11100001

>>> |

يدخل المستخدم عدد عشري عن طريق التابع input ويأخذ فقط الجزء الحقيقي ويحذف العشري عن طريق التابع

Int() ثم إنشاء قائمة فارغة لنضع فيها القيم ٠, ١ ثم ننشئ حلقة ونفرض متغير rem هو باقي قسمة

العدد على ٢

ثم إضافة الباقي ٠ أو ١ الى القائمة ثم زيادة العداد بمقدار واحد

ثم نأخذ الجزء الحقيقي من ناتج القسمة على ٢ ونعيد تكرار الخطوات حتى يختل الشرط وتصبح قيمة ناتج القسمة صفر
إنشاء حلقة لعكس عناصر القائمة ابتداءً من آخر قيمة للعداد - ١ نزولاً الى الصفر وعند كل قيمة نطبع العنصر الموافق

للدليل i

حيث أن التابع str يحول القائمة الممررة له الى سلاسل نصية

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.

```
homq3.py - C:/Users/ASUS/Desktop/python homework/homq3.py (3.9.7)
File Edit Format Run Options Window Help
import json
Q1="""The modulation technique used by EDGE are?
A.GMSK and 16QAM
B.GMSK and 8PSK
C.BPSK and 64QAM"""
Q2="""In HSDPA,multiple user share radio resources dynamically using?
A.code multiplexing
B.time multiplexing
C.time and code multiplexing"""
Q3="""Interleaving is used to obtain?
A.time diversity
B.frequency diversity
C.antenna diversity"""
Q4="""The number of possible modulation and coding scheme in EDGE?
A.4
B.9
C.10"""
Q5="""The guard interval is provided in OFDM?
A.to eliminate PAPR
B.to eliminate ISI
C.both A and B"""
Q6="""Diversity employs the decision making at?
A.transmitter
B.receiver
C.both A and B"""
Q7="""In frequency selective fading the?
A.coherence bandwidth of the channel is less than bandwidth of transmitted channel
B.coherence bandwidth of the channel is more than bandwidth of transmitted channel
C.coherence bandwidth of the channel is equal to bandwidth of transmitted channel"""
Q8="""Types of small scale fading,based on doppler spread are?
A.fast fading
B.flat fading
C. frequency selective fading"""
Q9="""RAKE receiver is?
A.fingers
B.several sub receivers
C.both A and B"""
Q10="""The power delay profile helps in determining?
A.excess delay
B.excess delay spread
C.both A and B"""
Q11="""Flat or frequency nonselective fading is a type of?
A.multipath delay spread small scale fading
B.doppler spread small scale fading
C.both A and B"""
Q12="""Impulse response of a multipath channel is determined by the fact that?
A.mobile radio channel may be modeled as linear filter
B.impulse response is time varying
C.both A and B"""
Q13="""QAM symbols are distinguished by?
A.phase
B.amplitude
C.both A and B"""
Q14="""The peak data rate supported by WCDMA for a stationary user?
A.2.048 Mbps
B.1 Gbps
C.100 Mbps"""
Q15="""CDMA rejects?
A.narrow band interference
B.wide band interference
C.both A and B"""
Q16="""The average uploading speed of 4G LTE network is?
A.5 Gbps
B.500 Mbps
C.300 Mbps"""
Q17="""The radio channel bandwidth of WCDMA is?
A.same as that of GSM
B.5 times that of GSM
C.25 times that of GSM"""
Q18="""In LTE which UE categories support 4x4 MIMO?
A.categories 4 and 5
B.categories 3,4 and 5
C.only category 5"""
Q19="""LTE Rel-10 legacy users access system via?
A.one resource block
B.multiple resource block
C.one component carrier"""
Q20="""The requirement for realtime performance of the UMTS conversational class is?
A.very high
B.high
C.no requirement"""
d={Q1:"B",Q2:"C",Q3:"A",Q4:"B",Q5:"B",Q6:"B",Q7:"A",Q8:"A",Q9:"C",Q10:"C",Q11:"A",Q12:"C",Q13:"C",Q14:"A",Q15:"A",Q16:"B",Q17:"C",Q18:"C",Q19:"C",Q20:"A"}
z=json.dumps(d)
with open("z.json","w") as f:
    f.write(z)
```

تم تعريف متغيرات (أسئلة واجوبة) من النمط string

تعريف قاموس المفتاح تبعه هو الأسئلة والقيمة هي الأجوبة الصحيحة ومن ثم تعريفه كـ json

ثم فتحه للكتابة

homwq3.py - C:/Users/ASUS/Desktop/python homework/homwq3.py (3.9.7)

File Edit Format Run Options Window Help

```
import json
from pprint import pprint
counter=0
dict= {}
list= []
name= input("enter your name:")
with open("z.json","r") as f:
    z=json.loads(f.read())
    for i in z :
        print(i)
        r = input("enter your answer :")
        list.append(r)
        if r ==z[i]:
            print("True")
            counter+=1
        else:
            print("False")

dict =(name:list)
print(dict)
print(" Your Final Result From 20 Degree is :",counter)
```

صفحة من الثلاثة

تم تعريف عداد لمعرفة النتيجة النهائية وتم إنشاء dictionary و list فارغة لوضع فيها اسم الطالب وأجوبته

يدخل المستخدم اسمه ثم استدعاء ملف الـ json وفتحته للقراءة

تم تعريف حلقة مجالها هو ملف json يتم طباعة مفاتيح القاموس (الأسئلة) ويدخل المستخدم اجابته وتتم اضافته

الى القائمة ثم مقارنته مع قيمة المفتاح اذا كانت النتيجة متساوية يتم زيادة العداد بمقدار واحد ووضع اسم المستخدم واجوبته في قاموس ثم يطبع النتيجة.

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 bit (AMD64)] on win32

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

>>>

===== RESTART: C:/Users/ASUS/Desktop/python homework/homwq3.py =====

enter your name: Zeinab Albari

The modulation technique used by EDGE are?

A. GMSK and 16QAM

B. GMSK and 8PSK

C. BPSK and 64QAM

enter your answer : B

True

In HSDPA, multiple user share radio resources dynamically using?

A. code multiplexing

B. time multiplexing

C. time and code multiplexing

enter your answer : C

True

Interleaving is used to obtain?

A. time diversity

B. frequency diversity

C. antenna diversity

enter your answer : A

True

The number of possible modulation and coding scheme in EDGE?

A. 4

B. 9

C. 10

enter your answer : B

True

The guard interval is provided in OFDM?

A. to eliminate PAPR

B. to eliminate ISI

C. both A and B

enter your answer : A

False

Diversity employs the decision making at?

A. transmitter

B. receiver

C. both A and B

enter your answer : B

True

In frequency selective fading the?

A. coherence bandwidth of the channel is less than bandwidth of transmitted channel

B. coherence bandwidth of the channel is more than bandwidth of transmitted channel

C. coherence bandwidth of the channel is equal to bandwidth of transmitted channel

enter your answer : A

True

Types of small scale fading,based on doppler spread are?

- A.fast fading
- B.flat fading
- C. frequency selective fading

enter your answer :A

True

RAKE receiver is?

- A.fingers
- B.several sub receivers
- C.both A and B

enter your answer :C

True

The power delay profile helps in determining?

- A.excess delay
- B.excess delay spread
- C.both A and B

enter your answer :A

False

Flat or frequency nonselective fading is a type of?

- A.multipath delay spread small scale fading
- B.doppler spread small scale fading
- C.both A and B

enter your answer :A

True

Impulse response of a multipath channel is determined by the fact that?

- A.mobile radio channel may be modeled as linear filter
- B.impulse response is time varying
- C.both A and B

enter your answer :C

True

QAM symbols are distinguished by?

- A.phase
- B.amplitude
- C.both A and B

enter your answer :C

True

The peak data rate supported by WCDMA for a stationary user?

- A.2.048 Mbps
- B.1 Gbps
- C.100 Mbps

enter your answer :A

—

```

CDMA rejects?
A.narrow band interference
B.wide band interference
C.both A and B
enter your answer :C
False
The average uploading speed of 4G LTE network is?
A.5 Gbps
B.500 Mbps
C.300 Mbps
enter your answer :B
True
The radio channel bandwidth of WCDMA is?
A.same as that of GSM
B.5 times that of GSM
C.25 times that of GSM
enter your answer :C
True
In LTE which UE categories support 4x4 MIMO?
A.categories 4 and 5
B.categories 3,4 and 5
C.only category 5
enter your answer :C
True
LTE Rel-10 legacy users access system via?
A.one resource block
B.multiple resource block
C.one component carrier
enter your answer :C
True
The requirement for realtime performance of the UMTS conversational class is?
A.very high
B.high
C.no requirement
enter your answer :A
True
{'Zeinab Albari': ['B', 'C', 'A', 'B', 'A', 'B', 'A', 'A', 'C', 'A', 'A', 'C', 'C', 'A', 'C', 'B', 'C', 'C', 'C', 'A']}
Your Final Result From 20 Degree is : 17
>>> |

```
