

Syrian Arab Republic

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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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First Network Programming Homework

Question 1: Python Basics?

A-if you have two lists, L1=['HTTP','HTTPS','FTP','DNS'] L2=[80,443,20,53],convert it to generate this dictionary d={'HTTP':80,'HTTPS':443,'FTP':20,'DNS':53}

```
1 L1=['HTTP','HTTPS','FTP','DNS']
2 L2=[80,443,20,53]
3 dictionary={L1[i]:L2[i] for i in range(len(L1))}
4 print(dictionary)
5
6
```

```
{'HTTP': 80, 'HTTPS': 443, 'FTP': 20, 'DNS': 53}
```

1-1 : لدينا قائمتين L1 و L2 نعرف قاموس يدعى dictionary يخزن بخانة المفتاح قيم L1 وبخانة القيم L2 عن طريق تعريف حلقة for مجالها هو طول القائمة L1 وقيم المفاتيح هي قيم L1 والقيمة المفاتيح هي L2 بعد ذلك يتم طباعة قيم dictionary

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

Tips: "List Comprehension"

```
1 primes=[num for num in range(1,1000) if all(num%i!=0 for i in range(2,num//2))]
2
3 print(primes)
4
```

```
[1, 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101, 103, 107, 109, 113, 127, 131, 137, 139, 149, 151, 157, 163, 167, 173, 179, 181, 191, 193, 197, 199, 211, 223, 227, 229, 233, 239, 241, 251, 257, 263, 269, 271, 277, 281, 283, 293, 307, 311, 313, 317, 331, 337, 347, 349, 353, 359, 367, 373, 379, 383, 389, 397, 401, 409, 419, 421, 431, 433, 439, 443, 449, 457, 461, 463, 467, 479, 487, 491, 499, 503, 509, 521, 523, 541, 547, 557, 563, 569, 571, 577, 587, 593, 599, 601, 607, 613, 617, 619, 631, 641, 643, 647, 653, 659, 661, 673, 677, 683, 691, 701, 709, 719, 727, 733, 739, 743, 751, 757, 761, 769, 773, 787, 797, 809, 811, 821, 823, 827, 829, 839, 853, 857, 859, 863, 877, 881, 883, 887, 907, 911, 919, 929, 937, 941, 947, 953, 967, 971, 977, 983, 991, 997]
```

2-1 : الهدف من الكود السابق طباعة الاعداد الأولية من 1 حتى 1000 بطريقة List Comprehension

عرفنا قائمة primes تحوي حلقة for مجالها من 1 حتى 1000 بمتغير num سوف نختبر في كل تكرار للحلقة العدد (num) اذا كان اولي ام لا حيث اذا كان باقي قسمة العدد (num) على الاعداد من 2 حتى num/2 سيكون العدد اولي واذا كان باقي القسمة مغاير للصفر (وهو المطلوب) سيكون العدد غير اولي وسيتم تخزين هذا الاعداد في القائمة primes لنقوم بطباعتها.

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 'Ph' letter**, then print it on screen.

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

```
1 L=['Network' , 'Math' , 'Programming' , 'Physics' , 'Music']
2
3 ph_items=[item for item in L if item.startswith('Ph')]
4
5 for item in ph_items:
6     print(item)
7
```

Physics

3-1 : لدينا قائمة L تحوي أسماء مقررات الهدف من الكود طباعة المقرر الذي يبدأ بالحرفين ph

عرفنا قائمة ph_items بداخلها حلقة for مجالها قيم القائمة L بمتغير item في كل تكرار للحلقة نختبر اسم المقرر اذا كان يبدأ ب ph لنقوم بعد ذلك بطباعة.

D: Using Dictionary comprehension, Generate this dictionary

d={1:2,2:3,3:4,4:5,5:6,6:7,7:8,8:9,9:10,10:11}

```
1 d={i:i+1 for i in range(1,11)}
2
3 print(d)
4
```

{1: 2, 2: 3, 3: 4, 4: 5, 5: 6, 6: 7, 7: 8, 8: 9, 9: 10, 10: 11}

4-1 : الهدف من الكود طباعة القاموس التالي d={1:2,2:3,3:4,4:5,5:6,6:7,7:8,8:9,9:10,10:11}

نلاحظ ان قيمة المفتاح اكبر من المفتاح ب 1

عرفنا قاموس d بداخله حلقة for مجالها من 1 ل 11 بمفتاح i وقيمة i+1 لنقوم بعد ذلك بطباعة القاموس

Question 2: Convert from binary to decimal

Write a Python program that converts a Binary number into its equivalent Decimal number. The program should start reading the binary number from the user. Then the decimal equivalent number must be calculated. Finally, the program must display the equivalent decimal number on the screen.

Tips: solve input errors.

```
1 binary = input("Enter a binary number: ")
2 decimal = 0
3 for i in range(len(binary)):
4     digit = int(binary[i])
5     decimal += digit * (2 ** (len(binary) - i - 1))
6
7 print("Decimal equivalent:", decimal)
8
```

```
Enter a binary number: 1010
Decimal equivalent: 10
```

2 : الهدف من الكود تحول العدد الثنائي المدخل لعدد عشري

بالبداية يطلب من المستخدم ادخال عدد ثنائي ونعرف متغير decimal بقيمة صفرية نعرف حلقة for مجالها هو طول العدد الثنائي المدخل و digit هو قيم العدد الثنائي (اول تكرار للحلقة او قيمة ثاني تكرار ثاني قيمة..)
ليحسب بعد ذلك decimal وهو decimal القديم + digit مضروب ب(2 لاس طول العدد الثنائي المدخل - i - 1)
(1) ليتم بعد ذلك طباعته

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 csv or json file.

```
1 {"What is the currency of the United States?:\na.Dollar\nb.Euro": "a", "What is the currency of Japan?:\na.Dollar\nb.Yen": "b", "What is the currency of Germany?:\na.Pound\nb.Euro": "b", "What is the currency of Australia?:\na.Dollar\nb.Yen": "a", "What is the currency of Brazil?:\na.Dollar\nb.Real": "b", "What is the currency of India?:\na.Rupee\nb.Euro": "a", "What is the currency of Canada?:\na.Dollar\nb.Euro": "a", "What is the currency of France?:\na.Dollar\nb.Euro": "b", "What is the currency of China?:\na.Ruble\nb.Yuan": "b", "What is the currency of Russia?:\na.Ruble\nb.Euro": "a", "What is the currency of South Africa?:\na.Rand\nb.Euro": "a", "What is the currency of Saudi Arabia?:\na.Riyal\nb.Dollar": "a", "What is the currency of Mexico?:\na.Dollar\nb.Peso": "b", "What is the currency of Italy?:\na.Euro\nb.Dollar": "a", "What is the currency of Egypt?:\na.Pound\nb.Dollar": "a", "What is the currency of Argentina?:\na.Euro\nb.Peso": "b", "What is the currency of United Kingdom?:\na.Pound\nb.Dollar": "a", "What is the currency of Spain?:\na.Euro\nb.Dollar": "a", "What is the currency of South Korea?:\na.Won\nb.Dollar": "a", "What is the currency of Nigeria?:\na.Naira\nb.Dollar": "a"}
```

```
1 import json
2 Score=0
3 List1=[]
4 print('choose the correct answer')
5 name1=input("Enter your name first:")
6 with open("Questions.json", "r") as Q:
7     ...q=json.loads(Q.read())
8     ...for i in q:
9         ...print(i)
10        ...ans=input("choose the correct answer a/b:")
11        ...List1.append(ans)
12        ...if ans==q[i]:
13            ...print("correct answer, you got 1 point")
14            ...Score=Score+1
15        ...else:
16            ...print("wrong answer")
17            ...Score=Score-1
18        ...inf_ans={name1:List1}
19        ...print(inf_ans)
20        ...print("Score:", Score)
21        inf2=json.dumps(inf_ans)
22    with open("inf.json", "w") as Q:
23        ...Q.write(inf2)
24
```

```

choose the correct answer
Enter your name first :Dima
What is the currency of the United States? :
a.Dollar
b.Euro
choose the correct answer a/b :a
correct answer,you got 1 point
What is the currency of Japan? :
a.Dollar
b.Yen
choose the correct answer a/b :a
wrong answer
What is the currency of Germany? :
a.Pound
b.Euro
choose the correct answer a/b :a
wrong answer
What is the currency of Australia? :
a.Dollar
b.Yen
choose the correct answer a/b :a
correct answer,you got 1 point
What is the currency of Brazil? :
a.Dollar
b.Real
choose the correct answer a/b :a
wrong answer
What is the currency of India? :
a.Rupee
b.Euro
choose the correct answer a/b :a
correct answer,you got 1 point
What is the currency of Canada? :
a.Dollar
b.Euro

```

```

What is the currency of France? :
a.Dollar
b.Euro
choose the correct answer a/b :a
wrong answer
What is the currency of China? :
a.Ruble
b.Yuan
choose the correct answer a/b :a
wrong answer
What is the currency of Russia? :
a.Ruble
b.Euro
choose the correct answer a/b :a
correct answer,you got 1 point
What is the currency of South Africa? :
a.Rand
b.Euro
choose the correct answer a/b :a
correct answer,you got 1 point
What is the currency of Saudi Arabia? :
a.Riyal
b.Dollar
choose the correct answer a/b :a
correct answer,you got 1 point
What is the currency of Mexico? :
a.Dollar
b.Peso
choose the correct answer a/b :a
wrong answer
What is the currency of Italy? :
a.Euro
b.Dollar
choose the correct answer a/b :a
correct answer,you got 1 point
What is the currency of Egypt? :
a.Pound
b.Dollar

```

