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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 is graduated or not.

```python
graduated = ["ALI", "BADR", "CEDRA", "DOAA", "EMAN"]

user_in = input("enter the name of the student: ")
user_in = user_in.upper()
if user_in in graduated:
    print("student "+user_in+" graduated")
else:
    print("student "+user_in +" not graduated")
```

يختبر الكود وجود اسم يدخله المستخدم ضمن مصفوفة معرفة مسبقا باستخدام تعليمة ال if

```
enter the name of the student: ahmad    enter the name of the student: ali
student AHMAD not graduated                 student ALI graduated
```

B- Generate and print a list of odd numbers from 1 to 1000. Tips:
  "List Comprehension"

```python
X = [i for i in range(1,1001) if (i%2==1)]
print(X)
```

لطباعة الاعداد الفردية باستخدام List Comprehension

```
[1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45
```
.
.
.
```
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 previous list and identifies the items that starts with 'P' letter, then print it on screen.   Tips: using loop, list 'len ()' method

```python
L=["Network","Math","Programming","Physics","Music"]
X=[]
for i in L:
    if i[0] == 'P':
        X.append(i)
x=len(X)
print(str(x)+" word start with p")
print(X)
```

استخدام حلقة for لقر ارءة عناصر المصفوفة والشرط if للتحقق من بداية الكلمة إذا كانت تبدأ ب p ام لا

```
2 word start with p
['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}

```python
import math
E_D={}
for i in range(1,11):
    E_D[i]=int(math.pow(i,2))
print(E_D)
```

تم استخدام مكتبة ال math لحساب مربع العدد وتم وضع الأرقام ضمن dictionary باستخدام حلقة for

```
{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.

```python
dec=int(input("enter a decimal number: "))
pout=dec
bin=[]
while dec!=0:
    y=dec%2
    bin.append(y)
    dec=dec//2
bin.reverse()
print("the binary number of the "+str(pout)+" is: "+"".join([str(i) for i in bin]))
```

يقوم البرنامج بتحويل العدد العشري المدخل الى عدد ثنائي

```
enter a decimal number: 10
the binary number of the 10 is: 1010
```

```
enter a decimal number: 123587
the binary number of the 123587 is: 11110001011000011
```

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.
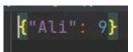
```python
import json
count=0
store={}
with open("Question.json","r") as Question:
    o_fQ = json.load(Question)
student_answer=[]
for key,value in o_fQ.items():
    print(key)
    print(value)
    x=input("enter answer")
    x=x.upper()
    student_answer.append(x)

with open("Answers.json","r") as Answers:
    o_fA = json.load(Answers)

for i in range(0,20):
    if student_answer[i]==o_fA[i]:
        count+=1
student_name=input("pleas enter your name: ")
student_name=student_name.capitalize()
store[student_name]=count
print(student_name+" has the reselt "+ str(count))
with open("mark.json","w") as mark:
    o_fm = json.dumps(store)
    mark.write(o_fm)
```

تم تخزين الأسئلة و الاجابات الصحيحة كل منها في ملف json منفصل

حيث يتم تخزين إجابات الطالب و مقارنتها في النهاية مع الإجابة الصحيحة باستخدام حلقة for و عداد لاعطاء العلامة المناسب ة و في النهاية يتم تخزين إجابة الطالب في ملف json منفصل بجانب اسم ه

```
Questions12                          Questions1
['A.a', 'B.b', 'C.c']                ['A.a', 'B.b', 'C.c']
enter answera                        enter answera
Questions13                          Questions2
['A.a', 'B.b', 'C.c']                ['A.a', 'B.b', 'C.c']
enter answerb                        enter answerc
Questions14                          Questions3
['A.a', 'B.b', 'C.c']                ['A.a', 'B.b', 'C.c']
enter answera                        enter answerb
Questions15                          Questions4
['A.a', 'B.b', 'C.c']                ['A.a', 'B.b', 'C.c']
enter answerc                        enter answera
Questions16                          Questions5
['A.a', 'B.b', 'C.c']                ['A.a', 'B.b', 'C.c']
enter answera                        enter answerb
Questions17                          Questions6
['A.a', 'B.b', 'C.c']                ['A.a', 'B.b', 'C.c']
enter answerb                        enter answera
Questions18                          Questions7
['A.a', 'B.b', 'C.c']                ['A.a', 'B.b', 'C.c']
enter answera                        enter answerc
Questions19                          Questions8
['A.a', 'B.b', 'C.c']                ['A.a', 'B.b', 'C.c']
enter answera                        enter answera
Questions20                          Questions9
['A.a', 'B.b', 'C.c']                ['A.a', 'B.b', 'C.c']
enter answera                        enter answerb
pleas enter your name: ali           Questions10
Ali has the reselt 9                 ['A.a', 'B.b', 'C.c']
```

تم حفظ الاسم و علامته ضمن ملف json

```
{"Ali": 9}
```

لملف الذي يحوي الأسئلة

```
{"Questions1": ["A.a","B.b","C.c"], "Questions2": ["A.a","B.b","C.c"],"Questions3": ["A.a","B.b","C.c"],"Questions4": ["A.a","B.b","C.c"],
 "Questions5": ["A.a","B.b","C.c"], "Questions6": ["A.a","B.b","C.c"],"Questions7": ["A.a","B.b","C.c"],"Questions8": ["A.a","B.b","C.c"],
 "Questions9": ["A.a","B.b","C.c"],
 "Questions10": ["A.a","B.b","C.c"],"Questions11": ["A.a","B.b","C.c"], "Questions12": ["A.a","B.b","C.c"],
 "Questions13": ["A.a","B.b","C.c"],"Questions14": ["A.a","B.b","C.c"], "Questions15": ["A.a","B.b","C.c"],"Questions16": ["A.a","B.b","C.c"],
 "Questions17": ["A.a","B.b","C.c"], "Questions18": ["A.a","B.b","C.c"],"Questions19": ["A.a","B.b","C.c"],"Questions20": ["A.a","B.b","C.c"]}
```