

Syrian Arab Republic

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5th , Network Programming : Homework

No1



اللاذقية - جامعة تشرين
كلية الهندسة الكهربائية والميكانيكية
قسم هندسة الاتصالات والإلكترونيات
السنة الخامسة: وظيفة إبرمجة شبكات

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First Network Programming Homework

Question 1: Python Basics?

A-If you have two lists,

L1=['HTTP','HTTPS','FTP','DNS']

dictionary

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

L2=[80,443,20,53], convert it to
generate this

```
In [1]: #first question A
L1=["HTTP","HTTPS","FTP","DNS"]
L2=[80,443,20,5]
#defined an empty dictionary fo joining the 2 List inside
dic={}
for i in range(len(L1)):
    #each element from L1 and L2 at the same please I used it as a key and value for the new dictionary
    dic[L1[i]]=L2[i]

print(dic)

{'HTTP': 80, 'HTTPS': 443, 'FTP': 20, 'DNS': 5}
```

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

Tips: “List Comprehension”

```

In [2]: #first question B
"""first I used for loop for generat numbers from 0 to 1000,and then another for loop from 2 to x because
I have to divid each number by all numbers that snaller then this number and testing the condition if this number x can't
be divided of any number from 2 range"""

list=[x for x in range (1000) if all(x%y!=0 for y in range(2,x))]
print (list)

[0, 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, 25
1, 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, 56
3, 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, 88
1, 883, 887, 907, 911, 919, 929, 937, 941, 947, 953, 967, 971, 977, 983, 991, 997]

```

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, 'len ()' , startswith() methods.

```

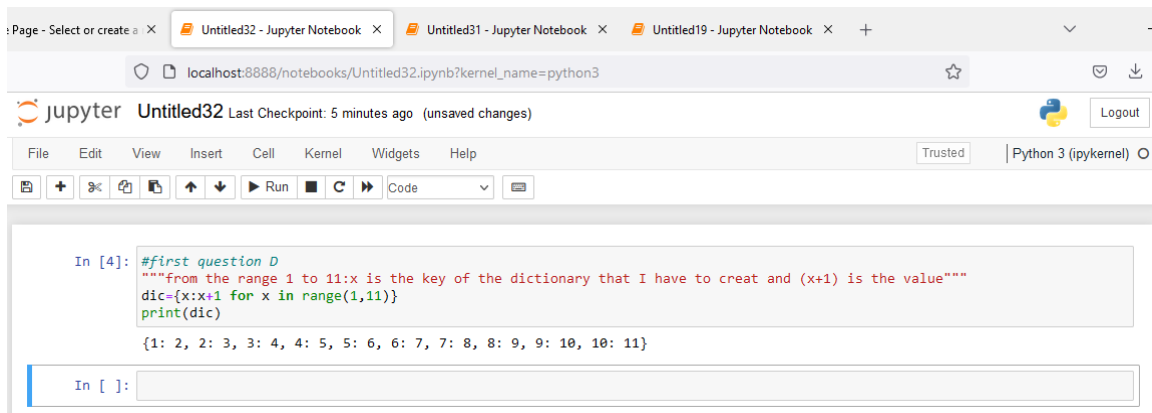
In [3]: #first question C
list=["network","math","programming","physicse","music"]
for i in range (len(list)):
    """ each element from list I tested if it starts with "ph",startswith can dell with just string"""
    if list[i].startswith("ph"):
        print(list[i],end="")

physicse

```

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 }



The screenshot shows a Jupyter Notebook window with the title 'Untitled32'. The browser address bar indicates the URL is 'localhost:8888/notebooks/Untitled32.ipynb?kernel_name=python3'. The notebook interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Widgets, Help) and a toolbar with icons for file operations, running, and saving. The code cell contains the following Python code:

```
In [4]: #first question D
        """from the range 1 to 11:x is the key of the dictionary that I have to creat and (x+1) is the value"""
        dic={x:x+1 for x in range(1,11)}
        print(dic)
```

The output of the code cell is displayed below the code:

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

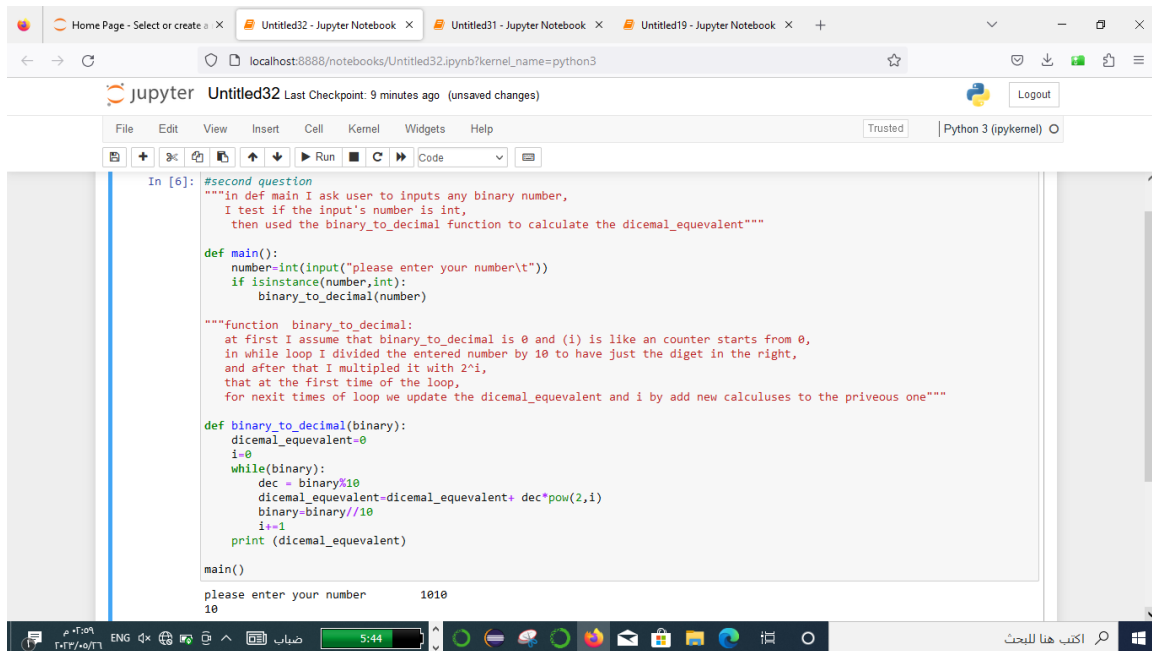
Below the output, there is an input prompt 'In []:' followed by an empty text box.

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



The screenshot shows a Jupyter Notebook window titled 'Untitled32' with a last checkpoint 9 minutes ago. The notebook contains a Python 3 kernel. The code in the cell is as follows:

```
In [6]: #second question
        """in def main I ask user to inputs any binary number,
        I test if the input's number is int,
        then used the binary_to_decimal function to calculate the dicemal_equevalent"""

        def main():
            number=int(input("please enter your number\t"))
            if isinstance(number,int):
                binary_to_decimal(number)

        """function binary_to_decimal:
        at first I assume that binary_to_decimal is 0 and (i) is like an counter starts from 0,
        in while loop I divided the entered number by 10 to have just the diget in the right,
        and after that I multiplied it with 2^i,
        that at the first time of the loop,
        for nexit times of loop we update the dicemal_equevalent and i by add new calculuses to the priveous one"""

        def binary_to_decimal(binary):
            dicemal_equevalent=0
            i=0
            while(binary):
                dec = binary%10
                dicemal_equevalent=dicemal_equevalent+ dec*pow(2,i)
                binary=binary//10
                i+=1
            print (dicemal_equevalent)

        main()

        please enter your number      1010
        10
```

The output of the program shows the input '1010' and the resulting decimal value '10'.

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

```
15
In [1]: #therd question
import json
def main():
    dic={} #an empty dictionary for storing the student's answers
    grade=0 #to stor the grade
    #student's information
    student_name=input("please enter your name\t")
    student_id=int(input("please enter your ID\t"))
    #opening the json file where I stor the questions and it's answers,and Loading it's contents
    readingfile=open("D:\\homework1.json","r")
    dicfile=json.load(readingfile)
    for key in dicfile.keys():
        #ask each question and stor the answer in a variable
        answer=input(key)
        #I add every question as a key for the dictionary (dic) and it's answer as a value
        dic[key]=answer
        #if the answer that the student write is Like the ine that stors in the file: increase the grade by 1
        if dicfile[key]==answer:
            grade=grade+1
    #printing student name, his university number and his grade
    print("student name :",student_name,"\n","his number :",student_id,"\n","his grade :",grade)
    #function write in file to stor the cotents of the dic to a new json file
    def write_in_file(dict,writ_file):
        writ_file=open("D:\\answers.json","w")
        writ_file.writelines(dict)
        print(dict)
    main()
```

```
main()

please enter your name mohammad
please enter your ID 2544
longest river in the world AL_NEL
the heighest mount in the world Everest
the biggest planite Jupiter
how many continent 7
the circumference of the Earth? 40000
the mase of the Earth? 2509
the sixth planet Sturn
which marine animal is the wittiest Delphinuse
smallest continent Aystralia
longest building in the world Burj Khalifa
light speed 3*10^8
first woman she won Nobel prize Mari Curie
unit of magnetic field Tesla
the red planet Mars
which Dwarf_planet Ploto
longest fall in the world Angel Fall
biggest statehood in the world Russia
when voice moves from air to water which parameter is still constant frequency
smallest statehood Vatican
who discovered the Penicillin Alexander Flamming
student name : mohammad
his number : 2544
his grade : 11

In [ ]:
```