SUBJECT: PYTHON PROGRAMMING LABORATORY

SUBJECT CODE: 21CSL46

Full PDF is Available on : http://searchcreators.org/pythonlab/

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Dept. CSE

Dedicated To..

My Dear All Friends and Supported YouTube Friends

Subject Code:21CS46

Subject :Python Programming Laboratory

Program-01

Aim: Introduce the Python fundamentals, data types, operators, flow control and exception handling in Python

A) Write A Python Program To Find The Best Of Two Test Average Marks Out Of Three Test's Marks Accepted From The User.

PROGRAM

```
marks1=int(input("Enter Test 1 Marks:"))
marks2=int(input("Enter Test 2 Marks:"))
marks3=int(input("Enter Test 3 Marks:"))
minimum=min(marks1,marks2,marks3)
sumofbest2=marks1+marks2+marks3-minimum
avgofbest2=sumofbest2/2
print("Avarage of best Two :",avgofbest2)
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Program01\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Program01\program01.py
Enter Test 1 Marks:25
Enter Test 2 Marks:15
Enter Test 3 Marks:38
Avarage of best Two : 31.5

Process finished with exit code 0
```

b) Develop a Python program to check whether a given number is palindrome or not and also count the number of occurrences of each digit in the input number.

PROGRAM

```
"""
Created on Tuesday 13-06-2023
@author: Hanumanthu
"""
val = int(input("Enter a value : "))
str_val = str(val)
if str_val == str_val[::-1]:
   print("Entered Value is Palindrome")
else:
   print("Entered Value is Not a Palindrome")
for i in range(10):
   if str_val.count(str(i)) > 0:
      print(str(i), "appears", str_val.count(str(i)), "times")
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Program01\ve
Enter a value : 32123
Entered Value is Palindrome
1 appears 1 times
2 appears 2 times
3 appears 2 times

Process finished with exit code 0
```

```
C:\Users\aryah\PycharmProjects\Program01\venv
Enter a value : 1234567
Entered Value is Not a Palindrome
1 appears 1 times
2 appears 1 times
3 appears 1 times
4 appears 1 times
5 appears 1 times
6 appears 1 times
7 appears 1 times

Process finished with exit code 0
```

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Program-02

Aim: Demonstrating creation of functions, passing parameters and return values

a) Defined as a function F as Fn = Fn-1 + Fn-2. Write a Python program which accepts a value for N (where N >0) as input and pass this value to the function. Display suitable error message if the condition for input value is not followed.

PROGRAM

```
#define the Function
def fn(n):
    #if Entered Number is Equal To 1 Returns the 0
    if n == 1:
        return 0
    #else If the Entered Number is Equal to 2 Returns the 1
    elif n == 2:
        return 1
```

```
    else:
        #else return function number
        return fn(n - 1) + fn(n - 2)

#enter the Integer Value
num = int(input("Enter a Number:"))
#If Entered Value is Greater the 0
if num > 0:
    #Display the enterd number and fibenacci number
    print("fn(", num, ") = ", fn(num), sep="")
else:
    #display the If entered number is less than 0
    print("Error  in input")
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Project2\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Project2\program
Enter a Number:12
fn(12) = 89

Process finished with exit code 0
```

b) Develop a python program to convert binary to decimal, octal to hexadecimal using functions.

PROGRAM

```
#Initialize the Variables.

decimal = int(input("Enter a Number Here:"))

#print the Entered Variable

print("The Conversion of Decimal Number",decimal,"is:")

#decimal number is converted into Binary

print(bin(decimal),"in Binary")

#decimal number is converted into  Octal

print(oct(decimal),"in Octal")

#decimal number is converted into Hexa Decimal

print(hex(decimal),"in Hexa Decimal")
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Project2\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Project2\program
Enter a Number Here:12
The Conversion of Decimal Number 12 is:
0b1100 in Binary
0o14 in Octal
0xc in Hexa Decimal

Process finished with exit code 0
```

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Program-03

Aim: Demonstration of manipulation of strings using string methods

a) Write a Python program that accepts a sentence and find the number of words, digits, uppercase letters and lowercase letters.

PROGRAM

```
#Create a Variable and Assign One Sentence
s = input("Enter a sentence: ")
#word,digits,uppercase,lowercase all are Firstly 0
w, d, u, l = 0, 0, 0, 0
#lenth word
l_w = s.split()
#create lenth word to assign w as variable
w =  len(l_w)
#for character is String
for c in s:
   #character is digits
   if c.isdigit():
      d = d + 1
      #upper CASE
```

```
    elif c.isupper():
        u = u + 1
        #lowerCase
    elif c.islower():
        l = l + 1
#Display the Number WOrd
print ("No of Words: ", w)
#Display the Number of Digits
print ("No of Digits: ", d)
#Display the Number of Upper Case
print ("No of Uppercase letters: ", u)
#Display the Number of Lower Case
print ("No of Lowercase letters: ", l)
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Project2\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Project2\program
Enter a sentence: PyThon 007
No of Words:  2
No of Digits:  3
No of Uppercase letters:  2
No of Lowercase letters:  4

Process finished with exit code 0
```

b) Write a Python program to find the string similarity between two given strings

PROGRAM

```
#Enter Strings Using Str Variables
str1 = input("Enter First String:\n")
str2 = input("Enter Second String\n")
#if string 2 is less than to string 1 assign values short
if len(str2) < len(str1):
    short = len(str2)
    long = len(str1)
else:
    short = len(str1)
    long = len(str2)
matchCnt = 0
for i in range(short):
    if str1[i] == str2[i]:
        matchCnt += 1
```

#Display the Similarity Two Strings

print("Similarity between two said String:")

print(matchCnt/ long)

OUTPUT

```
C:\Users\aryah\PycharmProjects\Project2\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Project2\progran
Enter First String:
computer science
Enter Second String
cse
Similarity between two  said String:
0.0625

Process finished with exit code 0
```

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Program-04

Aim: Discuss different collections like list, tuple and dictionary

a) Write a python program to implement insertion sort and merge sort using lists

PROGRAM

```
#Function  Definition
def insertion_sort(alist):
   #Start Range from 1 Upto Entered Elements are Ascending Order
   for i in range(1, len(alist)):
      temp = alist[i]
      j = i - 1
      while (j >= 0 and temp < alist[j]):
         alist[j + 1] = alist[j]
         j = j - 1
      alist[j + 1] = temp


#Enter the List Of Items
alist = input('Enter The List of Numbers:').split()
```

```
alist = [int(x) for x in alist]
#function call
insertion_sort(alist)
print('Sorted List: ', end='')
#diplay the Sorted Lists
print(alist)
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Project2\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Project2\program
Enter The List of Numbers:7 10 2 3 0
Sorted List: [0, 2, 3, 7, 10]

Process finished with exit code 0
```

Merge Sort Program

```
def mergesort(list1):
    if len(list1) > 1:
        mid = len(list1) // 2
        left = list1[:mid]
        right = list1[mid:]
```

```
mergesort(left)
mergesort(right)
i = 0
j = 0
k = 0
while i < len(left) and j < len(right):
    if left[i] < right[j]:
        list1[k] = left[i]
        i = i + 1
        k = k + 1
    else:
        list1[k] = right[j]
        j = j + 1
        k = k + 1
while i < len(left): # if there is element left out in the left list
    list1[k] = left[i]
    i = i + 1
    k = k + 1
```

```
        while j < len(right): # if there is element left out in the right list
            list1[k] = right[j]
            j = j + 1
            k = k + 1
list1 = input('enter the list of values to be sorted: ').split()
list1 = [int(x) for x in list1] # for every element in list1 we will call merge sort
mergesort(list1)
print(list1)
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Project2\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Project2\prg4.0.
enter the list of values to be sorted: 8 1 0 5 11 67
[0, 1, 5, 8, 11, 67]

Process finished with exit code 0
```

b) Write a program to convert roman numbers in to integer values using dictionaries.

PROGRAM

```
class sol_Roman:
#Function Definition
    def roman_to_integerNo(self, s):
        roman_no = {'I': 1, 'V': 5, 'X': 10, 'L': 50, 'C': 100, 'D': 500, 'M': 1000}
        integer_no = 0
        for i in range(len(s)):
            if i > 0 and roman_no[s[i]] > roman_no[s[i - 1]]:
                integer_no += roman_no[s[i]] - 2 * roman_no[s[i - 1]]
        else:
            integer_no += roman_no[s[i]]
        return integer_no
#this is the A single One Line No Break Points here Mind Your Program Line
print("Roman Numerical to Integer is:",
sol_Roman().roman_to_integerNo(input("Enter the Roman Numericals:")))
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Project2\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Project2\program
Enter the Roman Numericals:D
Roman Numerical to Integer is: 500

Process finished with exit code 0
```

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Program-05

Aim: Demonstration of pattern recognition with and without using regular expression

a) Write a function called isphonenumber () to recognize a pattern 415-555-4242 without using regular expression and also write the code to recognize the same pattern using regular expression.

PROGRAM

```
"""
Created on Wed May 24,  2023


@author: Hanumanthu
"""
import re
#Function Definition For Is Number is True or False
def isphonenumber(numStr):
    if len(numStr) != 12:
        return False
    for i in range(len(numStr)):
```

```
        if i==3 or i==7:
            if numStr[i] != "-":
                return False
        else:
            if numStr[i].isdigit() == False:
                return False
    return True


#function Definition For Check The Phone Number
def chkphonenumber(numStr):
    ph_no_pattern = re.compile(r'^\d{3}-\d{3}-\d{4}$')
    if ph_no_pattern.match(numStr):
        return True
    else:
        return False


ph_num = input("Enter a phone number : ")
#without Using Regular Expressions
print("Without using Regular Expression")
if isphonenumber(ph_num):
    print("Valid phone number")
else:
    print("Invalid phone number")
```

```
#using Regular Expressions
print("Using Regular Expression")
if chkphonenumber(ph_num):
    print("Valid phone number")
else:
    print("Invalid phone number")
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Program_05\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Program_05\Pro
Enter a phone number : 125-598-5678
Without using Regular Expression
Valid phone number
Using Regular Expression
Valid phone number

Process finished with exit code 0
```

b) Develop a python program that could search the text in a file for phone numbers (+919900889977) and email addresses (sample@gmail.com)

PROGRAM

```
"""
Created on Wed May 24,  2023


@author: Hanumanthu
"""
import re
# Define the regular expression for phone numbers
phone_regex = re.compile(r'\+\d{12}')
email_regex = re.compile(r'[A-Za-z0-9._]+@[A-Za-z0-9]+\.[A-Z|a-z]{2,}')
# Open the file for reading
with open('example.txt', 'r') as f:
    # Loop through each line in the file
    for line in f:
        # Search for phone numbers in the line
        matches = phone_regex.findall(line)
        # Print any matches found
```

```
    for match in matches:
        print(match)
    matches = email_regex.findall(line)
    # Print any matches found
    for match in matches:
        print(match)
```

example.txt(Text File)

+917348878215

+919812569090

+916567976156

+917543679809

aryahanumanthu@gmail.com

Steps to Create This File

- **This File Create In The Project File.**
- **Next Copy The Text On Above example.txt to which Created By in Your Project File.**
- **i.e You Are Created example.txt in Your Project**
- **Finally To Give The in Like This with open('example.txt', 'r') as f:**
- **Mind Your File Path is Should In Your Project File (if is Not Present In The Project File It's Occurred Error Like File Not Found Error)**

OUTPUT

```
C:\Users\aryah\PycharmProjects\Program_05\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Program_05\pro
+917348878215
+919812569090
+916567976156
+917543679809
aryahanumanthu@gmail.com

Process finished with exit code 0
```

Subject Code:21CSL46

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Program-06

Aim: Demonstration of reading, writing and organizing files.

a) Write a python program to accept a file name from the user and perform the following operations
1. Display the first N line of the file
2. Find the frequency of occurrence of the word accepted from the user in the file

```
"""

Created on Wed May 24,  2023

@author: Hanumanthu

"""

import os.path

import sys

fname = input("Enter the filename : ")

if not os.path.isfile(fname):

    print("File", fname, "doesn't exists")

    sys.exit(0)

infile = open(fname, "r")
```

```
lineList = infile.readlines()

for i in range(20):

    print(i + 1, ":", lineList[i])



word = input("Enter a word : ")

cnt = 0

for line in lineList:

    cnt += line.count(word)

print("The word", word, "appears", cnt, "times in the file")
```

Sample.txt(Text File)

this is phone number +917348878215

no phone number here

we have one +917348878215

we have an email aryahanumanthu@gmail.in and a number +917348878215

nothing of that sort here

Better hope the life-inspector doesn't come around while you have your life in such a mess.

You can create your own opportunities this week. Blackmail a senior executive.

Be different: conform.

Be cheerful while you are alive.

-- Phathotep, 24th Century B.C.

Q: How many journalists does it take to screw in a light bulb?

A: Three. One to report it as an inspired government program to bring light to the people, one to report it as a diabolical government plot to deprive the poor of darkness, and one to win a Pulitzer prize for reporting that Electric Company hired a light bulb-assassin to break the bulb in the first place.

Q: Why did the astrophysicist order three hamburgers?

A: Because he was hungry.

Q: Why haven't you graduated yet?

Steps to Create This File

- **This File Create In The Project File.**
- **Next Copy The Text On Above Sample.txt to which is Created By in Your Project File.**
- **i.e. You Are Created example.txt in Your Project**
- **Finally To Give The in Like This with open('example.txt', 'r') as f:**
- **Mind Your File Path is Should In Your Project File (if is Not Present In The Project File It's Occurred Error Like File Not Found Error)**

OUTPUT

```
C:\Users\aryah\PycharmProjects\Programm06\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Programm06\program06A.py
Enter the filename : Sample.txt
1 : this is phone number +917348878215

2 : no phone number here

3 : we have one +917348878215

4 : we have an email aryahanumanthu@gmail.in and a number +917348878215

5 : nothing of that sort here

6 : Better hope the life-inspector doesn't come around while you have your

7 : life in such a mess.

8 : You can create your own opportunities this week.  Blackmail a senior executive.

9 : Be different: conform.

10 : Be cheerful while you are alive.

11 : -- Phathotep, 24th Century B.C.

12 : Q: How many journalists does it take to screw in a light bulb?

13 : A: Three.  One to report it as an inspired government program to bring

14 : light to the people, one to report it as a diabolical government plot

15 : to deprive the poor of darkness, and one to win a Pulitzer prize for
```

```
16 : reporting that Electric Company hired a light bulb-assassin to break

17 : the bulb in the first place.

18 :  Q:    Why did the astrophysicist order three hamburgers?

19 :  A:    Because he was hungry.

20 :  Q:    Why haven't you graduated yet?
Enter a word : place
The word place appears 1 times in the file

Process finished with exit code 0
```

b) Write a python program to create a ZIP file of a particular folder which containsseveral files inside it.

Program

```
"""
Created on Wed May 24,  2023

@author: Hanumanthu
"""
import os
import sys
import pathlib
import zipfile

dirName = input("Enter Directory name that you want to backup : ")

if not os.path.isdir(dirName):
    print("Directory", dirName, "doesn't exists")
    sys.exit(0)
```

```
curDirectory = pathlib.Path(dirName)


with zipfile.ZipFile("myZip.zip", mode="w") as archive:
    for file_path in curDirectory.rglob("*"):
        archive.write(file_path,
arcname=file_path.relative_to(curDirectory))


if os.path.isfile("myZip.zip"):
    print("Archive", "myZip.zip", "created successfully")
else:
    print("Error in creating zip archive")
```


Steps To Create Directory

- **First in Project File Create Program File with Extension .py**
- **Next To Type or Copy and Paste the Above Program In Program06B**
- **Next In the Project Folder Right click → Select New →Create Directory and Give Name As you Desired…**

Output

```
C:\Users\aryah\PycharmProjects\Prograam06\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Prograam06\program06B.py
Enter Directory name that you want to backup : Example
Archive myZip.zip created successfully


Process finished with exit code 0
```

Subject Code:21CSL46

Subject :Python Programming Laboratory

Program-07

Aim: Demonstration of the concepts of classes, methods, objects and inheritance

a) By using the concept of inheritance write a python program to find the area of triangle, circle and rectangle.

PROGRAM

```
"""
Created on Wed May 24,  2023

@author: Hanumanthu
"""
import math
class Shape:
    def __init__(self):
        self.area = 0
        self.name = ""
    def showArea(self):
```

```
        print("The area of the", self.name, "is", self.area, "units")
class Circle(Shape):
    def__init__(self, radius):
        self.area = 0
        self.name = "Circle"
        self.radius = radius
    def calcArea(self):
        self.area = math.pi * self.radius * self.radius
class Rectangle(Shape):
    def__init__(self, length, breadth):
        self.area = 0
        self.name = "Rectangle"
        self.length = length
        self.breadth = breadth
    def calcArea(self):
        self.area = self.length * self.breadth
class Triangle(Shape):
    def__init__(self, base, height):
        self.area = 0
```

```
        self.name = "Triangle"
        self.base = base
        self.height = height
    def calcArea(self):
        self.area = self.base * self.height / 2
c1 = Circle(5)
c1.calcArea()
c1.showArea()
r1 = Rectangle(5, 4)
r1.calcArea()
r1.showArea()
t1 = Triangle(3, 4)
t1.calcArea()
t1.showArea()
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Project07\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Project07\Program07A.py
The area of the Circle is 78.53981633974483 units
The area of the Rectangle is 20 units
The area of the Triangle is 6.0 units

Process finished with exit code 0
```

b) Write a python program by creating a class called Employee to store the details of Name, Employee_ID, Department and Salary, and implement a method to update salary of employees belonging to a given department.

Program

```
"""
Created on Wed May 24,  2023

@author: Hanumanthu
"""
class Employee:
    def __init__(self):
        self.name = ""
        self.empId = ""
        self.dept = ""
        self.salary = 0
    def getEmpDetails(self):
        self.name = input("Enter Employee name : ")
```

```
        self.empId = input("Enter Employee ID : ")
        self.dept = input("Enter Employee Dept : ")
        self.salary = int(input("Enter Employee Salary : "))

    def showEmpDetails(self):
        print("Employee Details")
        print("Name : ", self.name)
        print("ID : ", self.empId)
        print("Dept : ", self.dept)
        print("Salary : ", self.salary)
    def updtSalary(self):
        self.salary = int(input("Enter new Salary : "))
        print("Updated Salary", self.salary)
e1 = Employee()
e1.getEmpDetails()
e1.showEmpDetails()
e1.updtSalary()
```

Output

```
C:\Users\aryah\PycharmProjects\Project07\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Project07\Program07B.py
Enter Employee name : Hanumanthu
Enter Employee ID : 007
Enter Employee Dept : CSE
Enter Employee Salary : 1
Employee Details
Name :  Hanumanthu
ID :  007
Dept :  CSE
Salary :  1
Enter new Salary : 3
Updated Salary 3

Process finished with exit code 0
```

Subject Code:21CSL46

Subject :Python Programming Laboratory

Program-08

Aim: Demonstration of classes and methods with polymorphism and overriding

a) Write a python program to find the whether the given input is palindrome or not (for both string and integer) using the concept of polymorphism and inheritance.

PROGRAM

```
"""
Created on Wed May 24,  2023
@author: Hanumanthu
"""
class PaliStr:
    def__init__(self):
        self.isPali = False

    def chkPalindrome(self, myStr):
        if myStr == myStr[::-1]:
```

```
            self.isPali = True
        else:
            self.isPali = False
        return self.isPali
class PaliInt(PaliStr):
    def__init__(self):
        self.isPali = False
    def chkPalindrome(self, val):
        temp = val
        rev = 0
        while temp != 0:
            dig = temp % 10
            rev = (rev * 10) + dig
            temp = temp // 10
        if val == rev:
            self.isPali = True
        else:
            self.isPali = False
        return self.isPali
```

```
st = input("Enter a string : ")
stObj = PaliStr()
if stObj.chkPalindrome(st):
    print("Given string is a Palindrome")
else:
    print("Given string is not a Palindrome")
val = int(input("Enter a integer : "))
intObj = PaliInt()
if intObj.chkPalindrome(val):
    print("Given integer is a Palindrome")
else:
    print("Given integer is not a Palindrome")
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Program08\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Program08\Program08A.py
Enter a string : mam
Given string is a Palindrome
Enter a integer : 121
Given integer is a Palindrome

Process finished with exit code 0
```

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Program-09

Aim: Demonstration of working with excel spreadsheets and web scraping

a) Write a python program to download the all XKCD comics

PROGRAM

```
"""
Created on Wed May 24,  2023
@author: Hanumanthu
"""
import requests
import os
from bs4 import BeautifulSoup
# Set the URL of the first XKCD comic
url = 'https://xkcd.com/1/'
# Create a folder to store the comics
if not os.path.exists('xkcd_comics'):
```

```
    os.makedirs('xkcd_comics')
# Loop through all the comics
while True:
    # Download the page content
    res = requests.get(url)
    res.raise_for_status()
    # Parse the page content using BeautifulSoup
    soup = BeautifulSoup(res.text, 'html.parser')
    # Find the URL of the comic image
    comic_elem = soup.select('#comic img')
    if comic_elem == []:
        print('Could not find comic image.')
    else:
        comic_url = 'https:' + comic_elem[0].get('src')
        # Download the comic image
        print(f'Downloading {comic_url}...')
        res = requests.get(comic_url)
        res.raise_for_status()
```

```
        # Save the comic image to the xkcd_comics folder
        image_file = open(os.path.join('xkcd_comics',
os.path.basename(comic_url)), 'wb')
        for chunk in res.iter_content(100000):
            image_file.write(chunk)
        image_file.close()
    # Get the URL of the previous comic
    prev_link = soup.select('a[rel="prev"]')[0]
    if not prev_link:
        break
    url = 'https://xkcd.com' + prev_link.get('href')
print('All comics downloaded.')
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Program09\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Program09\Program09A.py
Downloading https://imgs.xkcd.com/comics/barrel_cropped_(1).jpg...
Downloading https://imgs.xkcd.com/comics/physical_quantities.png...
Downloading https://imgs.xkcd.com/comics/exoplanet_high_5.png...
Downloading https://imgs.xkcd.com/comics/cuisine.png...
Downloading https://imgs.xkcd.com/comics/noise_filter.png...
Downloading https://imgs.xkcd.com/comics/crystal_ball.png...
Downloading https://imgs.xkcd.com/comics/siphon.png...
Downloading https://imgs.xkcd.com/comics/taxiing.png...
Downloading https://imgs.xkcd.com/comics/planetary_scientist.png...
Downloading https://imgs.xkcd.com/comics/commemorative_plaque.png...
```

b) Demonstrate python program to read the data from the spreadsheet and write the data in to the spreadsheet

Program

```
"""
Created on Wed May 24,  2023

@author: Hanumanthu
"""

from openpyxl import Workbook
from openpyxl.styles import Font

wb = Workbook()
sheet = wb.active
sheet.title = "Language"
wb.create_sheet(title="Capital")

lang = ["Kannada", "Telugu", "Tamil"]
state = ["Karnataka", "Telangana", "Tamil Nadu"]
capital = ["Bengaluru", "Hyderabad", "Chennai"]
code = ['KA', 'TS', 'TN']

sheet.cell(row=1, column=1).value = "State"
sheet.cell(row=1, column=2).value = "Language"
sheet.cell(row=1, column=3).value = "Code"

ft = Font(bold=True)
for row in sheet["A1:C1"]:
   for cell in row:
      cell.font = ft

for i in range(2, 5):
   sheet.cell(row=i, column=1).value = state[i - 2]
   sheet.cell(row=i, column=2).value = lang[i - 2]
```

```
    sheet.cell(row=i, column=3).value = code[i - 2]

wb.save("demo.xlsx")

sheet = wb["Capital"]

sheet.cell(row=1, column=1).value = "State"
sheet.cell(row=1, column=2).value = "Capital"
sheet.cell(row=1, column=3).value = "Code"

ft = Font(bold=True)
for row in sheet["A1:C1"]:
    for cell in row:
        cell.font = ft

for i in range(2, 5):
    sheet.cell(row=i, column=1).value = state[i - 2]
    sheet.cell(row=i, column=2).value = capital[i - 2]
    sheet.cell(row=i, column=3).value = code[i - 2]

wb.save("demo.xlsx")

srchCode = input("Enter state code for finding capital ")
for i in range(2, 5):
    data = sheet.cell(row=i, column=3).value
    if data == srchCode:
        print("Corresponding capital for code", srchCode, "is",
sheet.cell(row=i, column=2).value)

sheet = wb["Language"]

srchCode = input("Enter state code for finding language ")
for i in range(2, 5):
    data = sheet.cell(row=i, column=3).value
    if data == srchCode:
```

```
print("Corresponding language for code", srchCode, "is",
sheet.cell(row=i, column=2).value)

wb.close()
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Program09\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Program09\Program09B.py
Enter state code for finding capital KA
Corresponding capital for code KA is Bengaluru
Enter state code for finding language TS
Corresponding language for code TS is Telugu


Process finished with exit code 0
```

Subject Code:21CSL46

Subject :Python Programming Laboratory

Program-10

Aim: Demonstration of working with PDF, word and JSON files

a) Write a python program to combine select pages from many PDFs

PROGRAM

```
"""
Created on Wed May 24,  2023


@author: Hanumanthu
"""
from PyPDF2 import PdfWriter, PdfReader
num = int(input("Enter page number you want combine from multiple documents "))
pdf1 = open('birds.pdf', 'rb')
pdf2 = open('sample.pdf', 'rb')
pdf_writer = PdfWriter()
pdf1_reader = PdfReader(pdf1)
page = pdf1_reader.pages[num - 1]
```

```
pdf_writer.add_page(page)

pdf2_reader = PdfReader(pdf2)

page = pdf2_reader.pages[num - 1]

pdf_writer.add_page(page)

with open('output.pdf', 'wb') as output:

    pdf_writer.write(output)
```

OUTPUT

```
C:\Users\aryah\PycharmProjects\Program10\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Program10\Program10A.py
Enter page number you want combine from multiple documents 3


Process finished with exit code 0
```

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b) Develop a Python program to check whether a given number is palindrome or not and also count the number of occurrences of each digit in the input number.

PROGRAM

```
number = int(input("Enter the Number:"))
temp = number
reverse = 0
while(number > 0):
   dig = number % 10
   reverse = reverse * 10 + dig
   number = number // 10
print("The Reverse Number is : ",reverse)
if temp == reverse:
   print("The reverse Number is a pelindrome")
else:
   print("The number is not a Pelindrome")
```


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b) Develop a python program to convert binary to decimal, octal to hexadecimal using functions.

PROGRAM

```
#Initialize the Variables.
decimal = int(input("Enter a Number Here:"))
#print the Entered Variable
print("The Conversion of Decimal Number",decimal,"is:")
#decimal number is converted into  Binary
print(bin(decimal),"in Binary")
#decimal number is converted into  Octal
print(oct(decimal),"in Octal")
#decimal number is converted into  Hexa Decimal
print(hex(decimal),"in Hexa Decimal")
```

b) Write a python program to fetch current weather data from the JSON file

Program

```
"""
Created on Wed May 24,  2023

@author: Hanumanthu
"""

import json

# Load the JSON data from file
with open('example.json') as f:
    data = json.load(f)

# Extract the required weather data
current_temp = data['main']['temp']
humidity = data['main']['humidity']
weather_desc = data['weather'][0]['description']

# Display the weather data
print(f"Current temperature: {current_temp}°C")
print(f"Humidity: {humidity}%")
print(f"Weather description: {weather_desc}")
```

Example.json (This File Created On Your Project File Give name as Example.json)


```
{
 "coord": {
  "lon": -73.99,
  "lat": 40.73
 },
 "weather": [
  {
   "id": 800,
   "main": "Clear",
   "description": "clear sky",
   "icon": "01d"
  }
 ],
 "base": "stations",
 "main": {
  "temp": 10.45,
  "feels_like": 12.74,
  "temp_min": 14.44,
  "temp_max": 16.11,
  "pressure": 1017,
  "humidity": 64
 },
 "visibility": 10000,
 "wind": {
  "speed": 8.63,
  "deg": 180
 },
 "clouds": {
  "all": 1
 },
 "dt": 1617979985,
 "sys": {
```

```
    "type": 1,
    "id": 5141,
    "country": "INDI",
    "sunrise": 1617951158,
    "sunset": 1618000213
  },
  "timezone": -14400,
  "id": 5128581,
  "name": "New York",
  "cod": 200
}
```


OUTPUT

```
C:\Users\aryah\PycharmProjects\Program10\venv\Scripts\python.exe C:\Users\aryah\PycharmProjects\Program10\Program10B.py
Current temperature: 10.45°C
Humidity: 64%
Weather description: clear sky

Process finished with exit code 0
```

THANKING YOU

Visit our Official Website: http://searchcreators.org/