"""______

Lab13.py

13. Write a python program using tuple to satisfy following business requirements:

- a) List the number of courses opted by student "John"
- b) List all the courses opted by student "John"
- c) Student "John" is also interested in elective course mentioned above. Print the updated tuple including electives.
- d) Check whether student "john" is allowed to change his course from SE to Computer network. Consider the list of courses opted by a student "john" and available electives as a part of student Management System.

```
Courses: ("Python Programming", "RDBMS", "Web Technology",
  "Software Engineering")
  Electives:("Business Intelligence", Big Data Analytics")
Regno: 2117108
04/04/2022
courses = ("python", "RDBMS", "web technology", "software engineering")
electives = ("business Inteligence", "big data analytics")
print("1.LIST NUMBER OF COURSE OPTED BY STUDENT JOHN")
print("2.LIST ALL THE COURSES OPTED BY STUDENT JOHN")
print("3.STUDENT JOHN IS ALSO INTRESTED IN ELECTIVE COURSE MENTIONED
ABOVE.UPDATE TUPLE INCLUDING ELECTIVES")
print("4.CHECK WHETHER STUDENT JOHN IS ALLOWED TO CHANGE IN COURSE
FROM SE to COMPUTER NETWORK")
print("5.EXIT")
while True:
  ch = int(input("Enter your choice\n"))
  if ch == 1:
    print("NUMBER OF COURSES OPTED BY JOHN:", len(courses))
  elif ch == 2:
    print("COURSES OPTED BY STUDENT JOHN")
    i = 0
    for course in courses:
      i += 1
      print(f"{i}){course}")
  elif ch == 3:
    listcourse = list(courses)
    listele = list(electives)
    for ele in listele:
      listcourse.append(ele)
    course = tuple(listcourse)
    print("John courses after adding electives:\n")
    print(course)
  elif ch == 4:
    listcourse = list(course)
    for i in range(0, len(listcourse)):
      if listcourse[i] == 'software engineering':
        listcourse[i] = 'COMPUTER NETWORKS'
```

```
courses = tuple(listcourse)
    print("John courses after chaging:\n")
    print(courses)
 elif ch == 5:
    break
 else:
    print("INVALID CHOICE!!!")
1.LIST NUMBER OF COURSE OPTED BY STUDENT JOHN
2.LIST ALL THE COURSES OPTED BY STUDENT JOHN
3.STUDENT JOHN IS ALSO INTRESTED IN ELECTIVE COURSE MENTIONED ABOVE.UPDATE TUPLE INCLUDING ELECTIVES
4.CHECK WHETHER STUDENT JOHN IS ALLOWED TO CHANGE IN COURSE FROM SE to COMPUTER NETWORK
5.EXIT
Enter your choice
NUMBER OF COURSES OPTED BY JOHN: 4
Enter your choice
COURSES OPTED BY STUDENT JOHN
1)python
2)RDBMS
3)web technology
4)software engineering
Enter your choice
John courses after adding electives:
('python', 'RDBMS', 'web technology', 'software engineering', 'business Inteligence', 'big data analytics')
Enter your choice
```

```
Lab14.py
14. Write a Python program to input 'n' names and phone numbers to store it a dictionary
and print the phone number of a particular name
Regno: 2117108
04/04/2022
n = int(input("ENTER THE NO OF PEOPLE:"))
dict = \{\}
for i in range(n):
  keys = input("ENTER THE NAME:")
  def check():
    values = input("ENTER PHONE NUMBER:")
    if(len(values)!=10):
       print("NOT 10 DIGITS,\nEnter again")
       check()
    else:
       values=int(values)
       dict[keys]= values
  check()
for i in dict:
  print(dict)
  break
flag = 0
name = input("ENTER THE NAME TO FIND PHONE NUMBER:")
for key in dict:
  if name in key:
    print(f"PHONE NUMBER OF {name} = {dict[key]}")
    flag = 1
if flag == 0:
```

print("NAME IS NOT FOUND")

ENTER THE NO OF PEOPLE:2

ENTER THE NAME:Lailesh

ENTER PHONE NUMBER:998635

NOT 10 DIGITS,

Enter again

ENTER PHONE NUMBER:9961003680

ENTER THE NAME: Preetham

ENTER PHONE NUMBER:8673426632

{'Lailesh': 9961003680, 'Preetham': 8673426632}

ENTER THE NAME TO FIND PHONE NUMBER: Lailesh

PHONE NUMBER OF Lailesh = 9961003680

"""______

lab15.py

15. Write a function called string_dict that will take as parameter a string. The string can have alphabets, spaces, question marks, periods and apostrophes only. The function returns a dictionary. The keys of the dictionary should be the words from the original string, and the values should be the frequency of that word.

```
values should be the frequency of that word.
Regno:2117108
05/04/2022
def StringToList(Str1):
  list1 = Str1.split(' ')
  return list1
def ResultDictionary(li):
  f = \{ \}
  for val in li:
     flag = True
     if not val.isalnum() and '?' not in val and '.' not in val:
       flag = False
    if flag:
       if val in f.keys():
          f[val] = f[val] + 1
       else:
         f[val] = 1
     else:
       print(val,"Not added To list")
  return f
Main_string = input("Enter the Sentance ")
list1 = []
list1 = StringToList(Main_string)
print(list1)
final_Result = {}
final_Result = ResultDictionary(list1)
print(final_Result)
 Enter the Sentance aa bb cc aa bb cc dd ee ff cc bb kk ff
  ['aa', 'bb', 'cc', 'aa', 'bb', 'cc', 'dd', 'ee', 'ff', 'cc', 'bb', 'kk', 'ff']
```

{'aa': 2, 'bb': 3, 'cc': 3, 'dd': 1, 'ee': 1, 'ff': 2, 'kk': 1}

```
Lab16.py
16. Write a python script
1) To generate and print a dictionary that contains a number(between 1 and n) in the form
2) To Map two list into dictionary.
Regno:2117108
06/04/2022
final_dict = {}
n = int(input("Enter the limit number: "))
for i in range(n + 1):
  final\_dict[i] = i * i
print(final_dict)
list1 = [item for item in input("Enter the keys: ").split()]
list2 = [item for item in input("Enter the values: ").split()]
final_dict_2 = dict(zip(list1, list2))
print(final_dict_2)
  Enter the limit number: 4
  {0: 0, 1: 1, 2: 4, 3: 9, 4: 16}
  Enter the keys: 1 2 3 4
  Enter the values: one two three four
  {'1': 'one', '2': 'two', '3': 'three', '4': 'four'}
  Process finished with exit code 0
```

```
Lab17.py
17. Write a Python program to sort the elements in the array using bubble sort technique and
display the elements in descending order
Regno: 2117108
6/04/2022
------
import module sort
from array import array
n =int(input("Enter the size of an array"))
element = array('i')
for i in range(0,n):
  ele = int(input("ENTER THE ELEMENT"))
  element.append(ele)
module_sort.bubble_sort(element)
for i in range(len(element)):
  print(element[i],end="\t")
module_sort.py
def bubble_sort(b):
  for i in range (0,len(b)):
    for j in range(0,len(b)-i-1):
      if b[j] > b[j+1]:
         temp = b[i]
         b[j] = b[j+1]
         b[j+1] = temp
  return b
```

Enter the size of an array4

ENTER THE ELEMENT23

ENTER THE ELEMENT12

ENTER THE ELEMENT66

ENTER THE ELEMENT34

12 23 34 66

```
Lab18.py
Write a python program to check whether the given is subset of a set or a super set of a set
Regno: 2117108
06/04/2022
set1 = set()
set2 = set()
num_char = int(input("ENTER THE NUMBER OF CHARACTER IN SET 1 :"))
for i in range(num_char):
    ele = input(f"ENTER CHARACTER {i+1}:")
    set1.add(ele)
num_char = int(input("ENTER THE NUMBER OF CHARACTER IN SET 2 :"))
for i in range(num_char):
    ele = input(f"ENTER CHARACTER {i+1}:")
    set2.add(ele)
print(f"SET 1 = {set1}")
print(f"SET 2 = {set2}")
if set1.issubset(set2):
  print("SET1 IS SUBSET OF SET2")
else:
  print("SET1 IS NOT SUBSET OF SET2")
if set1.issuperset(set2):
  print("SET1 IS SUPERSET OF SET2")
else:
  print("SET1 IS NOT SUPERSET SET2")
```

```
ENTER THE NUMBER OF CHARACTER IN SET 1 :3
ENTER CHARACTER 1:AA
ENTER CHARACTER 2:BB
ENTER CHARACTER 3:CC
ENTER THE NUMBER OF CHARACTER IN SET 2 :5
ENTER CHARACTER 1:AA
ENTER CHARACTER 2:BB
ENTER CHARACTER 3:CC
ENTER CHARACTER 4:DD
ENTER CHARACTER 5:EE
SET 1 = {'BB', 'AA', 'CC'}
SET 2 = {'DD', 'BB', 'CC', 'AA', 'EE'}
SET1 IS SUBSET OF SET2
SET1 IS NOT SUPERSET SET2

Process finished with exit code 0
```

""_____Lab19.py

19. Write a python program to perform

line2_list = line2.split(' ')

- i) Reverse in descending order, union in ascending order, intersection in ascending order using the input present in the file.
- ii) Print the output as well as save the file in the new file with file name as 'output program <<pre><<pre>cregisternumber>> <<pre>c<month>> <<date>>.txt'
- iii) Output of reverse, union, intersection should be printed in newline.
- iv) Copy the program file from existing file destination to location where your input and out file is present.

```
Regno:2117108
07/04/2022
        .......
from datetime import datetime as dd
today = dd.now()
programnumber = 19
regisetr\_no = 2117108
date today = dd.strftime(today,"%d-%B-%Y")
result_file = f"output program_{programnumber}_{regisetr_no}_{date_today}"
open(f"{result_file}.txt",'w').close()
def write_file(content,message=None):
  res = open(f"{result_file}.txt",'a')
  if message is not None:
     print(f'' \setminus n\{message\} \setminus n'')
     res.write(f'' \setminus n\{message\} \setminus n \setminus n'')
  for ele in content:
     res.write(f"{ele} \t ")
     print(f"{ele}",end=" ")
  res.write("\n")
  print()
file = open('input.txt','r')
line1 = file.readline()
line2 = file.readline()
file.close()
line1 list = line1.strip('\n').split(' ')
```

```
line2_list_reversed = line2_list[::-1]
line1_list_reversed = line1_list[::-1]
write_file(line1_list_reversed, "Reverse: ")
write_file(line2_list_reversed)
union_set = set(line1_list).union(set(line2_list))
write_file(union_set, "Union: ")
intersection_set = set(line1_list).intersection(set(line2_list))
write_file(intersection_set, "Intersection: ")
```

```
Reverse:

EE DD CC BB AA
HH GG FF CC BB

Union:

FF GG DD HH EE CC AA BB

Intersection:

CC BB

Process finished with exit code 0
```

"""

Lab20.py

20. There is a file with several text messages. Each message is in its own line. Write a Python program to count the number of lines in the file and the total number of words contained in those messages. Assume the messages contain only alphabets, and numbers.

```
Regno: 2117108 07/04/2022
```

```
file = open('text.txt','r')
```

```
content = file.readlines()
number_of_lines = len(content)
word_length = 0
```

for line in content:

```
word_length +=len(line.split(' '))
print(f"The number of lines are : {number_of_lines}")
print(f"The number of words in the file are : {word_length}")
```

```
The number of lines are : 5
The number of words in the file are : 30
Process finished with exit code 0
```

```
text.txt × inheritance.py × inheritance.
```

```
Lab21.py
21. Program to illustrate multilevel inheritance Box (length, breadth, height) as the super class.
Boxweight (weight) and Boxshipment (cost) as the subclasses. Illustate the use of super
keywords, constructor assign the value not zero
Regno: 2117108
07/04/2022
class Box:
  def __init__(self, length, breadth, height):
     self.length = length
     self.breadth = breadth
     self.height = height
  def dislplay(self):
     print(f"The length is {self.length}")
     print(f"The breadth is {self.breadth}")
     print(f"The height is {self.height}")
class BoxWeight(Box):
  def __init__(self, length, breadth, height, weight):
     super(BoxWeight, self).__init__(length, breadth, height)
     self.weight = weight
  def dislplay(self):
     super(BoxWeight, self).dislplay()
     print(f"The weight is {self.weight}")
class BoxShipment(BoxWeight):
  def __init__(self, length, breadth, height, weight, shipment):
     super(BoxShipment, self).__init__(length, breadth, height, weight)
     self.shipment = shipment
  def dislplay(self):
     super(BoxShipment, self).dislplay()
     print(f"The shipment is {self.shipment}")
bs = BoxShipment(10, 15, 16, 134, 1000)
bs.dislplay()
```

The length is 10
The breadth is 15
The height is 16
The weight is 134
The shipment is 1000

```
Lab22.py
22. Write a class Distance with instance variables feet and inches. Include necessary
methods. Test the class
Regno: 2117108
08/04/2022
class Distance:
  def __init__(self, feet=None, inches=None):
    self.feet: float = feet
    self.inches: float = inches
  def input_data(self):
    self.feet = float(input("Enter the feet: "))
    self.inches = float(input("Enter the inches: "))
  def add_distance(self, distance):
    newfeet = (distance.feet + self.feet) + int((distance.inches + self.inches) / 12)
    newinches = (distance.inches + self.inches) % 12
    return Distance(feet=newfeet, inches=newinches)
  def display(self):
    print(f"The feet : {self.feet}")
    print(f"The inches : {self.inches}")
obj1 = Distance()
obj1.input_data()
obj1.display()
obj2 = Distance()
obj2.input data()
obj2.display()
print("adding two objects")
newobj = obj1.add_distance(obj2)
newobj.display()
```

Enter the feet: 14

Enter the inches: 30

The feet: 14.0
The inches: 30.0
Enter the feet: 15
Enter the inches: 16

The feet : 15.0 The inches : 16.0 adding two objects

The feet : 32.0 The inches : 10.0

```
Lab23.py
23.class Relation with abstract method to implement t basic relational operators (-.,-) on two
integers. Define class number with two data fields (N), N2) which extends class Relation and
illustrate the main class. (hint: use user module all the three program in different fil like
sample car example.)
Regno:2117108
08/04/2022
from module import relation_number as rs
num1 = int(input("ENTER THE NUMBER 1:"))
num2 = int(input("ENYTER NUMBER 2:"))
m1 = rs.Number(num1,num2)
print(f"EQUALS TO IS {m1.equals_to()}")
print(f"GREATER THAN IS {m1.greater_than()}")
print(f"LESSER THAN IS {m1.lesser_than()}")
print(f"GREATER THAN OR EQUAL TO {m1.greater_than_equals()}")
print(f"LESSER THAN OR EQUAL TO {m1.lesser_than_equals()}")
module/abstract_methods_relation.py
from abc import ABC, abstractmethod
class example(ABC):
  def init (self):
    pass
  @abstractmethod
  def equals_to(self):
    pass
  @abstractmethod
  def greater_than(self):
    pass
  @abstractmethod
  def lesser_than(self):
    pass
  @abstractmethod
  def greater_than_equals(self):
    pass
  @abstractmethod
  def lesser_than_equals(self):
```

module/relation_number.py

```
from module import abstract_methods_relation
```

```
class Number(abstract_methods_relation.example):
    def __init__(self, num1, num2):
        super().__init__()
        self.N1 = num1
        self.N2 = num2

def equals_to(self):
        return self.N1 == self.N2

def greater_than(self):
        return self.N1 > self.N2

def lesser_than(self):
        return self.N1 > self.N2

def greater_than_equals(self):
        return self.N1 >= self.N2

def lesser_than_equals(self):
        return self.N1 <= self.N2</pre>
```

ENTER THE NUMBER 1:10
ENYTER NUMBER 2:23
EQUALS TO IS False
GREATER THAN IS False
LESSER THAN IS False
GREATER THAN OR EQUAL TO False
LESSER THAN OR EQUAL TO True

```
Lab 24.py
Write a python program to add few customer details into the database and retrieve the information
and print in systematic manner.
Regno: 2117108
Date: 08/04/2022
import sqlite3 as db
conn = db.Connection('customer.db')
cursor = conn.cursor()
cursor.execute("create table if not exists customer(id integer primary key,name text,salary
integer,address text)")
class Customer:
  def __init__(self):
  def insert data(self, cust id, cust name, cust sal, cust address):
     if cursor.execute(f"insert into customer
values({cust_id},'{cust_name}',{cust_sal},'{cust_address}')"):
      print("data inserted")
     else:
      print("data insertion failed")
  def print_data(self, cust_id=None):
     if cust_id is not None:
      query = f"select * from customer where id={cust_id}"
     else:
      query = "select * from customer"
      data = cursor.execute(query)
      data = data.fetchall()
      print("id\tname\tsalary\taddress")
      for row in data:
       print(f''\{row[0]\}\t\{row[1]\}\t\{row[2]\}\t\{row[3]\}'')
  def update_data(self):
     cust_id = int(input("Enter the customer Id whose data you wish to update: "))
     if cursor.execute(f"select * from customer where id={cust_id}"):
       name = input("Enter the Name: ")
       salary = int(input("Enter the salary: "))
       address = input("Enter the Address: ")
       if cursor.execute(f"update customer set
name='{name}',salary={salary},address='{address}' where id={cust id}"):
         print("Data successfully updated")
       else:
         print("Data updation failed")
     else:
       print(f"no data found for custoner id {cust_id}")
  def delete_data(self):
   cust id = int(input("Enter the custid you wish to delete: "))
   if cursor.execute(f"delete from customer where id={cust_id}"):
```

```
print("Data successfully deleted")
   else:
     print("Data deletion failed")
while True:
  c = Customer()
  choice = int(input("Enter the choice\n1. Insert\t2. Display\t3.Display
specific\t4.update\t5.Delete\t6.Exit\nEnter your choice: "))
  if choice == 1:
    c_id = int(input("Enter the customer id: "))
    name = input("Enter the name: ")
    salary = int(input("Enter the salary: "))
    address = input("Enter the address: ")
    c.insert_data(cust_id=c_id, cust_name=name, cust_sal=salary,cust_address=address)
     # insert_data(cust_id=101,
cust_name='namita',cust_sal=20000,cust_address='mangalore')
  elif choice == 2:
       c.print_data()
  elif choice == 3:
       cust_id = int(input("Enter the customer number: "))
       c.print_data(cust_id)
  elif choice == 4:
       c.update_data()
  elif choice == 5:
       c.delete data()
  elif choice == 6:
       conn.close()
       break
  else:
     print("Invalid choice.")
```

D:\python\venv\Scripts\python.exe D:/python/lab24.py

Enter the choice

1. Insert 2. Display 3.Display specific 4.update 5.Delete 6.Exit

Enter your choice: 1

Enter the customer id: 101

Enter the name: nena Enter the salary: 300000 Enter the address: karwar

data inserted Enter the choice

1. Insert 2. Display 3.Display specific 4.update 5.Delete 6.Exit

Enter your choice: 1

Enter the customer id: 201

Enter the name: maya Enter the salary: 567000 Enter the address: kumta

data inserted Enter the choice

1. Insert 2. Display 3.Display specific 4.update 5.Delete 6.Exit

Enter your choice: 2

id name salary address 101 nena 300000 karwar 201 maya 567000 kumta Enter your choice: 5

Enter the custid you wish to delete: 201

Data successfully deleted

Enter the choice

1. Insert 2. Display 3.Display specific 4.update 5.Delete 6.Exit

Enter your choice: 2

id name salary address 101 nena 300000 karwar

Enter the choice

1. Insert 2. Display 3.Display specific 4.update 5.Delete 6.Exit

Enter your choice: 3

Enter the customer number: 101

Enter the choice

1. Insert 2. Display 3.Display specific 4.update 5.Delete 6.Exit

Enter your choice: 4

Enter the customer Id whose data you wish to update: 101

Enter the Name: rahul
Enter the salary: 450000
Enter the Address: bhatkal
Data successfully updated

Enter the choice

1. Insert 2. Display 3.Display specific 4.update 5.Delete 6.Exit

Enter your choice: 6

'''_____

LAB25.py

Write a python application to generate student report card enter all the details of the student required. Calculate the marks, average, and resuls, then update the information accordingly. Write a python application to generate student report card enter all the details of the student required. Calculate the marks, average, and resuls, then update the information accordingly.

```
RegNo: 2117108
08-04-2022
_____!!!
import sqlite3 as s
conn = s.connect('Student.db')
cursor = conn.cursor()
cursor.execute("DROP TABLE IF EXISTS Student")
cursor.execute("create table Student(id integer primary key,name text,mark1 integer,mark2
integer,"
         "mark3 integer,total integer ,average real,result text)")
print("Table Created")
class Student:
  def Insert(self):
    self.regNo = int(input("Enter the Register number"))
    self.name = input("Enter the name \t :")
    print("enter the marks for 3 subject")
    self.mark1 = int(input())
    self.mark2 = int(input())
    self.mark3 = int(input())
    self.total = self.mark1 + self.mark2 + self.mark3
    self.avg = self.total / 3
    if self.mark1 < 35 or self.mark2 < 35 or self.mark2 < 35:
       self.result = "failed"
    elif self.avg \geq 90:
       result = "Distinction"
    elif self.avg \geq 70:
       self.result = "First"
    elif self.avg \geq 50:
       self.result = "Second"
    elif self.avg \geq 35:
```

self.result = "Passed"

```
if cursor.execute("insert into Student values(?,?,?,?,?,?,?)",
               (self.regNo, self.name, self.mark1, self.mark2, self.mark3, self.total, self.avg,
                self.result)):
       print("DATA INSERTED")
    else:
       print("NOT INSERTED DATA")
  def Display(srlf):
    id = int(input("ENTER THE STUDENT ID TO DISPLAY RECORDS"))
    cursor.execute(f"select * from Student where id = {id}")
    data = cursor.fetchone()
    if (data is not None):
       print(f"{data[1]} Report Card")
       print("Register Number: \t", data[0])
       print("Name: \t ", data[1])
       print("Mark 1: \t ", data[2])
       print("Mark 2: \t", data[3])
       print("Mark 3: \t", data[4])
       print("Total: \t", data[5])
       print("Average: \t", data[6])
       print("Result: \t", data[7])
    else:
       print("STUDENT DATA IS NOT FOUND ")
S = Student()
y = "y"
while y == 'y':
  print("1)INSERT DATA\t 2) DISPLAY DATA 3)COMMIT DATA 4) EXIT")
  c = int(input("ENTER YOUR CHOICE:"))
  if c == 1:
    S.Insert()
  elif c == 2:
    S.Display()
  elif c == 3:
    conn.commit()
    print("data Committed")
  elif c == 4:
    exit()
  else:
    print("WRONG CHOICE")
  y = input("Want to perform again : (y/n)")
```

```
Table Created
   1) INSERT DATA 2) DISPLAY DATA 3) COMMIT DATA 4) EXIT
   ENTER YOUR CHOICE:1
   Enter the Register number: 2117824
Enter the name :hrithik
   enter the marks for 3 subject:
   DATA INSERTED
   Want to perform again : (y/n)y
   1) INSERT DATA 2) DISPLAY DATA 5) COMMIT DATA 4) EXIT
   ENTER YOUR CHOICE:1
   Enter the Register number: 2117018
   Enter the name :Antony
   enter the marks for 3 subject:
   44
   45
   46
   DATA INSERTED
Want to perform again : (y/n)y
1)INSERT DATA 2) DISPLAY DATA 3)COMMIT DATA 4) EXIT
   ENTER YOUR CHOICE:3
   Commit completed
   Want to perform again : (y/n)y
1)INSERT DATA 2) DISPLAY DATA 3)COMMIT DATA 4) EXIT
ENTER YOUR CHOICE:2
ENTER THE STUDENT ID TO DISPLAY RECORDS2117010
   Antony Report Card
   Register Number:
                        2117618
   Name: Antony
   Mark 1:
   Mark 2:
               45
    Mark 3:
               46
    Total: 135
   Average: 45.0
   Result:
               Passed
   Want to perform again : (y/n)n
```