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"""
SET 1:
1 ADD DETAILS (CARNO,PRICE,COMPANY)
2 INPUT COMPANY AND DISPLAY ITS CARS
3 SORT BASED ON THE PRICE
4 EXIT
"""
carList = []
while True:
    print("1 Add details \n 2 Search car \n 3 sort \n 4 exit")
    choosOption = int(input("Choose any option :"))

    if choosOption == 1:
        carNo = input("Enter a car number :")
        carPrice = int(input("Enter a price(in lakh):"))
        carCompany = input("Enter a company name :")
        dic1 = {"no":carNo,"price":carPrice,"company":carCompany}
        carList.append(dic1)
        print("Total car:"+str(len(carList)))

    elif choosOption == 2:
        serchComapny = input("Entre a company name :")
        for car in range(len(carList)):
            if(carList[car]["company"]==serchComapny):
                print(carList[car]["no"])

    elif choosOption ==3 :
        for i in range(len(carList)):
            for j in range(len(carList)-i-1):
                if(carList[j]["price"]>=carList[j+1]["price"]):
                    carList[j],carList[j+1] = carList[j+1],carList[j]
        print(carList)

    elif choosOption ==4 :
        break

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"""
Set 2 :
1 : sum of number which multiple of 3 or 5
2 : armstrong number between the number
3 : exit
"""
def getArmsdtrong(number):
    sum = 0
    temp = number
    while temp>0:
        remainder = temp%10
        sum += remainder**3
        temp//=10
    if(number == sum):
        return True

while True :

    print("1. sum of multiple of 3 or 5 \n 2. armstrong number between two number \n 3 exit ")

    choosOption = int(input("Enter a option :"))

    if choosOption ==1:
        sum = 0
        for i in range(1,1000):
            if(i%3 == 0 or i%5 == 0 ):
                sum = sum+i
        print(sum)

    elif choosOption == 2:
        start = int(input("Enter a starting range:"))
        End = int(input("Enter a ending range:"))
        while start<=End:
            if(getArmsdtrong(start)):
                print(start)
            start+=1

    else:
        break

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"""
SET 3 :
1 ADD PLAYER DETAILS(NO,NAME,AGE,RUNS,WICKETS)
2 DISPLAY GRETER THAN WICKETS DATA OF INPUT NO
3 SORT BASE ON AGE
4 EXIT
"""
playerList = []
while True:
    print("\n 1 add data \n 2 display \n 3 sort \n 4 exit")

    chooOption = int(input("Enter option :"))

    if chooOption == 1:
        no = int(input("Enter a no of player :"))
        name = input("Enter a name of player :")
        age = int(input("Enter a age :"))
        runs = int(input("Enter a total runs :"))
        wickets = int(input("Enter a total wicket :"))
        dic1 = {"no":no,"name":name,"age":age,"run":runs,"wicket":wickets}
        playerList.append(dic1)
        print("total record "+str(len(playerList)))

    elif chooOption == 2:
        wickets = int(input("Enter a wicket :"))
        for i in range(len(playerList)):
            if playerList[i]["wicket"]>= wickets:
                print(playerList[i]["name"])

    elif chooOption == 3:
        for i in range(len(playerList)):
            for j in range(len(playerList)-i-1):
                if playerList[j]["age"]>playerList[j+1]["age"]:
                    playerList[j],playerList[j+1] = playerList[j+1],playerList[j]

        print(playerList)
    else:
        break

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"""
set : 4
1 LARGEST PRIME FACTORS OF 6000
2 ARMSTRONG NUMBER BETWEEN RANGE
3 EXIT
"""
def getFactors(number):
    maxnumber = 0
    factor = 0
    for i in range(1,number+1):

        if number%i == 0:
            flag = 0
            for j in range(2,i):
                if i%j == 0 :
                    flag = 1
                    break
            if flag == 0:
                maxnumber = i
    return maxnumber

def getArmsdtrong(number):
    sum = 0
    temp = number
    while temp>0:
        remainder = temp%10
        sum += remainder**3
        temp//=10
    if(number == sum):
        return True

while True:

    print("1. prime factors \n 2 armstrong number \n 3 exit ")
    chooseOption = int(input("Choose Option :"))

    if chooseOption == 1:
        print("Biggest Prime Number is :"+ str(getFactors(6000)))

    elif chooseOption == 2:
        start = int(input("Enter a starting range:"))
        End = int(input("Enter a ending range:"))
        while start<=End:
            if(getArmsdtrong(start)):
                print(start)
            start+=1

    elif chooseOption == 3:
        exit()

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"""
set 5 :
1 : add details(name,area,price,capacity)
2 : display data(area=navrangpura and capacity more than 5000)
3 : order in price
4 : exit
"""
listOfParticipant = []

while True :

    print("1. Add details \n 2. Display data \n 3. sort by price \n 4. exit ")

    chooseOption = int(input("Enter a abouve option :"))

    if(chooseOption ==1):
        nameParticipant = input("Enter a name of participant :")
        area = input("Enter area :")
        price = int(input("Enter price :"))
        capacity = int(input("Enter capacity :"))
        dict = {"name":nameParticipant,"area":area,"price":price,"capacity":capacity}
        listOfParticipant.append(dict)

    elif chooseOption == 2 :
        for list in range(len(listOfParticipant)):
            #print(listOfParticipant)
            if(listOfParticipant[list]["area"]=="navrangpura" and listOfParticipant[list]["capacity"]>=5000):
                print(list)
            print(listOfParticipant)

    elif chooseOption == 3:
        for i in range(len(listOfParticipant)):
            for j in range(len(listOfParticipant)-i-1):
                if(listOfParticipant[j]["price"] > listOfParticipant[j+1]["price"]):
                    listOfParticipant[j],listOfParticipant[j+1] = listOfParticipant[j+1],listOfParticipant[j]
            print(listOfParticipant)

    elif chooseOption == 4:
        break

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"""
set : 6
1 SUM OF NUMBER SQUERE AND SUM OF SUQUER OF THE NUMBER
FIND THE DIFFERENCE BETWEEN THEM
2 FIND THE PRIME NUMBER BETWEEN THE FIRST 100 NUMBER
3 EXIT
"""
def getSumNumber():
    sum = 0
    for i in range(1,101):
        sum = sum+i
    return sum**2

def getSquireNumber():
    sum = 0
    for i in range(1,101):
        sum = sum+i**2
    return sum

def getfactors(number):
    fac = 0
    for i in range(1,number+1):
        if(number%i==0):
            fac+=1
    return fac

def primeNumber(number):
    factors = getfactors(number)
    if factors ==2:
        return True

while True :
    print("\n 1 Difference \n 2 prime number \n 3 exit ")
    option= int(input("Enter option :"))
    if option ==1:
        sumNumber = getSumNumber()
        squireNumber = getSquireNumber()
        print(sumNumber)
        print(squireNumber)
        diffrence = sumNumber - squireNumber
        print("diffrence is "+str(diffrence))

    elif option == 2:
        start = int(input("Enter start :"))
        end = int(input("Enter end :"))
        while start<= end:
            if(primeNumber(start)):
                print(start)
                start+=1
            else :
                start+=1

    elif option == 3:
        exit()

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"""
SET 7 :
1 ADD DETAILS (NAME , CUISINE , RATING , LOCATION )
2 Dispaly resto Chinese cuisine and rating more than 3.5.
3 SORT BASE ON RATING
4 EXIT
"""

restoList = []
while True:
    print("1 add Details \n 2 display data \n 3 sort data \n 4 exit")

    chooOption = int(input("Enter option :"))

    if chooOption == 1:
        name = input("Enter a name of resto :")
        cusine = input("Enter cusine name :")
        rating = float(input("Enter a rating ( 1 to 5 ) :"))
        location = input("Eter a location :")
        dic1 = {"name":name,"cusine":cusine,"rating":rating,"address":location}
        restoList.append(dic1)
        print("total record "+str(len(restoList)))

    elif chooOption == 2:
        for i in range(len(restoList)):
            if(restoList[i]["cusine"]=="chinese" and restoList[i]["rating"]>=3.5):
                print(restoList[i]["name"])

    elif chooOption == 3:
        for i in range(len(restoList)):
            for j in range(len(restoList)-i-1):
                if(restoList[j]["rating"]<restoList[j+1]["rating"]):
                    restoList[j],restoList[j+1] = restoList[j+1],restoList[j]

        print(restoList)
    else:
        break

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"""
set 8 :
1 find 101th prime number
2 armstrong number between range
3 exit
"""
def getFactors(number):
    factors = 0
    for i in range(1,number+1):
        if number%i == 0:
            factors +=1
    return factors

def primeNumber(number):
    totFactor = getFactors(number)
    if totFactor == 2:
        return True

def getArmsdtrong(number):
    sum = 0
    temp = number
    while temp>0:
        remainder = temp%10
        sum += remainder**3
        temp//=10
    if (number == sum):
        return True

while True :
    print("1. find number \n 2 armstrong number \n 3 exit")
    chooseOption= int(input("Enter a choice :"))
    if chooseOption == 1:
        count = 1
        number = 1
        while count <= 101:
            if(primeNumber(number)):
                if (count==101):
                    print("101th prime number is :"+str(number))
                    number+=1
                    count+=1
                else :
                    number+=1
            elif chooseOption == 2:
                start = int(input("Enter a starting range:"))
                End = int(input("Enter a ending range:"))
                while start<=End:
                    if(getArmsdtrong(start)):
                        print(start)
                        start+=1
            elif chooseOption == 3:
                break

```