Practical List Python

Proposed practicals

Practical No. 1	Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old.
Solution:	from datetime import datetime name = input('Enter your name? \n') age = int(input('How old are you? \n')) hundred = int((100-age) + datetime.now().year) print ('Hello %s. You are %s years old. You will be 100 years old in %s.' % (name, age, hundred))

Practical No. 2	Enter the number from the user and depending on whether the number is even or odd, print out an appropriate message to the user.

Solution:	num = int(input("Enter a number: "))
	mod = num % 2
	if mod > 0:
	  print("This is an odd number.")
	else:
	  print("This is an even number.")

Practical No. 3	Write a program to generate the Fibonacci series.

Solution:	# Program to display the Fibonacci sequence up to n-th term where n is provided by the user
	
	# change this value for a different result
	nterms = 10
	
	# uncomment to take input from the user
	#nterms = int(input("How many terms? "))
	
	# first two terms
	n1 = 0
	n2 = 1
	count = 0
	
	# check if the number of terms is valid
	if nterms <= 0:
	  print("Please enter a positive integer")
	elif nterms == 1:
	  print("Fibonacci sequence upto",nterms,":")
	  print(n1)
	else:
	  print("Fibonacci sequence upto",nterms,":")
	  while count < nterms:
	  print(n1,end=' , ')
	  nth = n1 + n2
	  # update values
	  n1 = n2
	  n2 = nth
	  count += 1

Practical No. 4	Write a function that reverses the user defined value.

Solution:	# Python Program to Reverse a Number using While loop
	
	Number = int(input("Please Enter any Number: "))
	Reverse = 0
	while(Number > 0):
	  Reminder = Number %10
	  Reverse = (Reverse *10) + Reminder
	  Number = Number //10
	
	print("\n Reverse of entered number is = %d" %Reverse)

Practical No. 5	Write a function to check the input value is Armstrong and also write the function for Palindrome.

Solution 1	def myarmstrong():
	  num = int(input("Enter a number: "))
	  # initialize sum
	  sum = 0
	  # find the sum of the cube of each digit
	  temp = num
	  while temp > 0:
	  digit = temp % 10
	  sum += digit ** 3
	  temp //= 10
	  # display the result
	  if num == sum:
	  print(num,"is an Armstrong number")
	  else:
	  print(num,"is not an Armstrong number")
	def mypalindrome():
	  n=int(input("Enter number:"))
	  temp=n
	  rev=0
	  while(n>0):
	  dig=n%10
	  rev=rev*10+dig
	  n=n//10
	  if(temp==rev):
	  print("The number is a palindrome!")
	  else:
	  print("The number isn't a palindrome!")

Solution 2	def isArmstrong(n):
	  #armstrong number is a number whose sum of cube of digits is the same number
	  # 1^3 + 5^3 + 3^3 = 153
	
	  copy = n
	
	  #sum initially 0
	  s = 0
	
	  while n!=0:
	  last_digit = n % 10
	  # ** operator is use to find power
	  s = s + (last_digit ** 3)
	  n = n // 10

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        if s==copy:
                return True
        else:
                return False

def isPalindrome(s):
        rev = s[::-1]
        if rev==s:
                return True
        else:
                return False

def main():
        #input number to check armstrong number
        n = int(input("Enter number to check armstrong : "))

        if isArmstrong(n):
                print("%d is Armstrong number" % n)
        else:
                print("%d is not Armstrong number" % n)

        #input string to check palindrome
        s = input("Enter string to check palindrome : ")

        if isPalindrome(s):
                print("%s is Palindrome" % s)
        else:
                print("%s is not Palindrome" % s)

main()
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Practical No. 6	Write a recursive function to print the factorial for a given number

Solution:	def recur_factorial(n):
	  """Function to return the factorial
	  of a number using recursion"""
	  if n == 1:
	  return n
	  else:
	  return n*recur_factorial(n-1)
	
	# Change this value for a different result
	num = 7
	
	# uncomment to take input from the user
	#num = int(input("Enter a number: "))
	
	# check is the number is negative
	if num < 0:
	  print("Sorry, factorial does not exist for negative numbers")
	elif num == 0:
	  print("The factorial of 0 is 1")
	else:
	  print("The factorial of",num,"is",recur_factorial(num))

Practical No. 7	Write a function that takes a character (i.e. a string of length 1) and returns True if it is a vowel, False otherwise.

Solution:	def is_vowel(char):
	  vowels = ('a', 'e', 'i', 'o', 'u')
	  if char not in vowels:
	  return False
	  return True

Practical No. 8	Define a function that computes the length of a given list or string

Solution: 1	def mystrlen():
	  str = input("Enter a string: ")
	  # counter variable to count the character in a string
	  counter = 0
	  for s in str:
	  counter = counter+1
	  print("Length of the input string is:", counter)
	mystrlen()

Solution: 2	def mystrlen():
	    str = input("Enter a string: ")
	    # using len() function to find length of str
	    print("Length of the input string is:", len(str))
	mystrlen()

Practical No. 9	Write a program that takes two lists and returns True if they have at least one common member.

Solution:	def common_data(list1, list2):
	  result = False
	  for x in list1:
	  for y in list2:
	  if x == y:
	  result = True
	  return result
	print(common_data([1,2,3,4,5], [5,6,7,8,9]))
	print(common_data([1,2,3,4,5], [6,7,8,9]))

Practical No. 10	Write a Python program to print a specified list after removing the 0th, 2nd, 4th and 5th elements.
Solution:	lists= ['Apple','Banana','Kivi','Greps','Blackberries','Cherries','JACKFRUIT'] lists= [x for (i,x) in enumerate(lists) if i not in (0,2,4,5)] print (lists)

Practical No. 11	Write a Python program to clone or copy a list
Solution:	original_list = [10, 22, 44, 23, 4] new_list = list(original_list) print(original_list) print(new_list)

Practical No. 12	Write a Python script to sort (ascending and descending) a dictionary by value
Solution:	import operator d = {1: 2, 3: 4, 4: 3, 2: 1, 0: 0} print('Original dictionary : ',d) sorted_d = sorted(d.items(), key=operator.itemgetter(0)) print('Dictionary in ascending order by value : ',sorted_d) sorted_d = dict(sorted(d.items(), key=operator.itemgetter(0),reverse=True)) print('Dictionary in descending order by value : ',sorted_d)

Practical No. 13	Write a Python script to concatenate following dictionaries to create a new one. dic1={1:10, 2:20} dic2={3:30, 4:40} dic3={5:50,6:60}
Solution:	dic1={1:10, 2:20} dic2={3:30, 4:40} dic3={5:50,6:60} dic4 = {} for d in (dic1, dic2, dic3): dic4.update(d) print(dic4)

Practical No. 14	Write a Python program to sum all the items in a dictionary
Solution:	d={'A':100,'B':540,'C':239} print("Total sum of values in the dictionary:") print(sum(d.values()))