



COMSATS University, Islamabad
Terminal Examination, Fall 2019

Department of Computer Science

Class: BS (CS) & (SE)
Course Code – Title: CSC101 – Introduction to ICT
Marks: 35 Marks

Dated: 4th Jan, 2020
Time Allowed: 2 hours
Reg #: SP19-BSE-CG1

Note: This is the Subjective Part that should be solved on the Answer sheet. Solve Part IV before the Part III.

PART-III (CLO-2): [25 Marks]

Question 1-5 carry equal marks [5 * 5 = 25 Marks]

Q.1. Twin primes are a pair of prime numbers that differ by 2. For example, 3 and 5, 5 and 7, and 11 and 13 are twin primes. Write a program to find all twin primes less than 100.

Sample Output:

(3, 5)
(5, 7)
...

Q.2. Write a function that checks whether two words are anagrams. Two words are anagrams if they contain the same letters. For example, 'silent' and 'listen' are anagrams. The header of the function is:

def isAnagram(s1, s2):

Note: The length of the word is not defined

Write a test program that prompts the user to enter two strings and, if they are anagrams, displays "is an anagram"; otherwise, it displays "is not an anagram".

Q.3. Write the following function that merges two sorted lists into a new sorted list:

def merge(list1, list2):

Note: Don't use default functions

Write a test program that prompts the user to enter two sorted lists and displays the merged list. Here is a sample run:

Enter list1: 1 5 16 61 111
Enter list2: 2 4 5 6
The merged list is 1 2 4 5 5 6 16 61 111

Q.4. Suppose the weekly hours for all employees are stored in a table. Each row records an employee's seven-day work hours with seven columns. For example, the following table stores the work hours for eight employees. Write a function that displays employees and their total hours in decreasing order of the total hours. The header of the function is:

def displayEmployee(record):

Note: The number of employees is not defined

Write a test program that prompts the user to enter the employee record and displays it in decreasing order of the total hours.

Sample Employee record:

	Su	M	T	W	Th	F	Sa
Employee 0:	2	4	3	4	5	8	8
Employee 1:	7	3	4	3	3	4	4
Employee 2:	3	3	4	3	3	2	2
Employee 3:	9	3	4	7	3	4	1
Employee 4:	3	5	4	3	6	3	8
Employee 5:	3	4	4	6	3	4	4
Employee 6:	3	7	4	8	3	8	4
Employee 7:	6	3	5	9	2	7	9

Q.5. Cricket is a game having 11 players. Write a program that prompts the user to enter "Name" and "Position" of the players. Name should contain alphabets only and position should be 1-11. Once the position is assigned, it should not be assigned again to any other player. Now, display the output w.r.t. ascending position order.

Input:	Output:
Player Position: 3	Player Position 1
Name: Aslam	Name: Waqar
Player Position: 1	Player Position 2
Name: Waqar	Name: Saleem
Player Position: 2	Player Position 3
Name: Saleem	Name: Aslam
...	...

PART-IV (CLO-3): [10 Marks]

Question 6 and 7 carry equal marks [5 * 2 = 10 Marks]

Q.6. Prepare a flow chart for the problem illustrated in Question No. 1.

Q.7. Draw a flow chart that displays whether the input number is Lynch-Bell number or not.
Hint: Number "n" in a Lynch-Bell number such that all of its digits are different (and do not include zero) and n is divisible by each of its individual digits. For example: 135 is evenly divisible by 1, 3 and 5.

.....Good Luck.....