Computer Architecture (CS F342)

Lab Test-1 (Sem-1 2021-22) Section: P1

Date: 07-October-2021 (Thursday) Total time: 60 minutes

Weightage: 10% Mode: Open book

Question: A given alphanumeric string of length n is said to be (k)-way palindrome for k>1, if it can be divided into two parts of length k and n-k, s.t. each of the sub-strings is palindrome in itself. Also, a string is said to be (k)-way complete, iff, it is a (k)-way palindrome and the entire string is a palindrome as well. Write a MIPS assembly code to find whether a given alpha-numeric string is a (k)-way palindrome and (k)-way complete palindrome or not? Your program should include a proper and useful prompt for input, and print the results in a meaningful manner.

 # Sample test case:
#Input: 2a24bb4
#Output: It is a 3-way palindrome. It is not (3)-way complete palindrome.

#Explanation: The string is of length 7. 2a2 is a palindrome has length 3. The rest of the string 4bb4 is also a palindrome. Hence, it is a (3)-way palindrome. However, the entire string is not a palindrome. Hence, it is not (3)-way complete palindrome.

Instructions:

1. The lab exam is of 60 minutes, including the upload time is of 10 minutes.
2. Please ensure that your computers/laptops/desktops etc. are in working condition.
3. Your system should have QtSpim installed and make sure it is working, before the exam begins.
4. Please ensure that you have proper internet connection for the entire 2 hours of lab. You should arrange for contingency plans in case of failure for any of the above.
5. Please write your program in a word or text file only. Save it as **ID_section_test1.a/.s/.asm** file. For e.g. 2019A7PS0236H_P1_test1.asm. **Do not zip your file.** Please write your name, ID, Contact no. on your program file as comments. A sample is shown below.

```
#ID
#Name
#Contact No.
# Email

Your program starts here….
```

6. If you face any difficulty in uploading the program, please contact the instructors immediately with proper justification.
7. Students must refrain from academic dishonesty. Similarity in programs will lead to penalization.

----------***----------