

King Fahd University of Petroleum and Minerals
College of Computer Sciences and Engineering
Department of Computer Engineering

COE 301 – Computer Organization (T161)
ICS 233 – Computer Architecture & Assembly Language (T161)

Programming Assignment # 01 (due date & time: Sunday 30/10/2016 during class period)

A **palindrome** number is a number that reads the same backward or forward. For example, **0xE7** when read in binary is a palindrome number. Write a MIPS assembly program to do the following on the **Test** array defined below:

```
.DATA
Test:    .BYTE    0xA5, 0xDD, 0x66, 0x36, 0x45, 0x18, 0x65, 0x75
Result: .SPACE 8
```

- i. Check each number in the **Test** array to see if it is a palindrome number or not. If the number is palindrome, then set the corresponding **Result** array entry to 1, otherwise set it to 0.
- ii. Show the contents of the **Result** array by looping through its entries and showing snapshots of the simulator for the contents of the **Result** array.

The solution should be well organized and flexible (i.e., works properly if the **Test** array is changed to **.HALF** or **.WORD** along with the proper allocation of the **Result** array). Also, your program should be well documented.

Submit through email a soft copy of your solution in a zip file with the subject line “COE301/ICS233-**Prog01**-yourID” to both marwan@kfupm.edu.sa and s201375910@kfupm.edu.sa. Your solution should be submitted in a **word file** that contains the following items:

- (a) Your name and ID
- (b) Assignment number
- (c) Problem statement
- (d) Your results along with the code

Copying programming assignment is not allowed. This work should be done individually. Detected copies will get zero grades. This includes the one who wrote the program and the one who copied it.