# COE 301 / ICS 233 – Computer Organization

## MIPS Programming Assignment 1, Term 171

**Due date: Thursday 19/10/2017 at 11:59 PM**

Write and test a MIPS assembly language program to **search for <u>all</u> occurrences of a user supplied word** in a text file. The program should do the following:

a) Open a text file **"input.txt"** and read all characters into an array. Limit the length of the array to 10000 characters. The maximum number of characters to be read should be 10000 characters. If the file does not exist then the program should display an error message and terminates.

b) Display a message to ask the user to input a search word. Assume the search word is at most 10 characters long.

c) Read the user search word into another array of characters.

d) Search for <u>all</u> occurrences of the search word within the array of characters generated from the text file. Display the starting position of <u>each occurrence</u> of the search word within the array of characters. If the search word does not exist in the array, then display the message **"Not found!"**. Once completed, inform the user that the program is done by displaying a **"Done."** message, and terminate the program. A sample run is shown below:

**input.txt: "Studying at KFUPM is fun. I like KFUPM!"**

**Enter a search word (at most 10 characters): KFUPM**

**KFUPM was found at position 13**
**KFUPM was found at position 34**
**Done.**

### Submission Guidelines:

All submissions should be done through Blackboard. Submit the source code of the program. Make sure that your program is well written and documented. The program will be graded according to its correctness and documentation. It is your responsibility to make sure that the program works. A program that does not assemble or run will receive zero on correctness. **Copying programming assignment is not allowed. This is individual work. Detected copies will get zero grades. This includes the one who wrote the program and the one who copied it.**

### Grading Scheme:

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|---|---|
| Opening and reading text file: **"input.txt"** | **[1 point]** |
| Displaying an error message when the file does not exist | **[1 point]** |
| Display the starting position of **<u>each</u>** occurrence of the search word | **[5 points]** |
| Detecting that the search word does not exist in the array of characters | **[2 point]** |
| Program readability and comments | **[1 point]** |
| **Total** | **[10 points]** |