1 Introduction

This document contains two programming tasks to be finished in the next 48 hours. You can use the programming language and tools that are convenient for you. Please keep track of your progress and all your code inside a GitHub repository. After you finish, please share with me the URL of the GitHub repository. Note that these tasks are not about being the fastest to finish! You will get bonus points for creativity and the quality of your code and documentation.

2 Word Search

Description: Given a 2D board and a word, find if the word exists in the grid. The word can be constructed from letters of sequentially adjacent cell, where "adjacent" cells are those horizontally or vertically neighbouring.
Note: The same letter cell may not be used more than once.

Example: An example 2D board is shown as below:

$$\begin{bmatrix} A & B & C & E \\ S & F & C & S \\ A & D & E & E \end{bmatrix}$$

Given a word "ABCCED" $\implies$ TRUE;
Given a word "SEE" $\implies$ TRUE;
Given a word "ABCB" $\implies$ FALSE.

3 Crawl Issue Reports

Description: I plan to study all issue reports filed against Apache Camel project. However, there is no database available. Could you build a crawler to download a Jira issue report, parse it, and store it into a `.csv` file?
After you finish, please share with me the `.csv` file.

Example: You could crawl and parse the following issue report:
`https://issues.apache.org/jira/browse/CAMEL-10597`
Specifically, I want to get all properties of the issue CAMEL-10597
"Details", such as (`Type:  Bug`),
"People", such as (`Assignee:  Claus Ibsen`),
"Dates", such as (`Created=1481726528/``2016-12-14T14:42:08+0000'',`
`where 1481726528 is the epoch`),
"Description", such as (``Assume I have rest path ...''`),
"Comments", such as (`ASF GitHub Bot:1481745300:14/Dec/16 14:55:``GitHub`
`user bobpaulin opened a pull request:  ...''`).

The example output is:
`Ln1 Type,...,Assignee,...,Created,Created_Epoch,...,Description,Comments`
`Ln2 Bug,...,Claus Ibsen,...,2016-12-14T14:42:08+0000,1481726528,...,Assume`
`I have rest path ...,ASF GitHub Bot:1481745300:14/Dec/16 14:55:``GitHub`
`user bobpaulin opened a pull request:  ...`