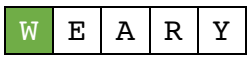
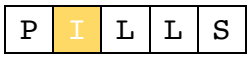
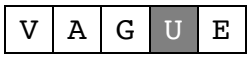
CELL0014 Individual Coding Task

Note that this task is assessed and the code should be entirely your own work, and you should not share code with other students or make use of ready-made code solutions.

The deadline for this assignment is 5pm Friday 11th February

TASK: Recreate the game WORDLE using Python.

You can see how to play WORDLE at https://www.powerlanguage.co.uk/wordle/ where you have to guess the WORDLE (an unknown hidden 5-letter word). The rules as taken from the website are:

> Guess the **WORDLE** in 6 tries.
>
> Each guess must be a valid 5 letter word. Hit the enter button to submit.
>
> After each guess, the color of the tiles will change to show how close your guess was to the word.
>
> **Examples**
>
> 
>
>
> The letter **W** is in the word and in the correct spot.
>
> 
>
>
> The letter **I** is in the word but in the wrong spot.
>
> 
>
>
> The letter **U** is not in the word in any spot.
>
> **A new WORDLE will be available each day!**

Your goal is to write a Python program that will enable someone to play Wordle.

You should write a function called `play_wordle()` that starts a game and asks in turn for the user's 6 guesses, returning whether the guess was correct and if not give information on the correct/incorrect letters in the guess.

You may submit your code either as a `.py` python file or a `.pynb` Jupyter notebook.

A file containing all the words in the UK Scrabble dictionary is included as a resource to see valid 5-letter words.

If you need help to work on the task you might first work on code that can complete the following components:

- ~~code to load in a text file containing all the valid words in the English language and that returns all the 5-letter words into a list~~

- ~~code to check a guess is valid (i.e. matches to a real 5-letter word)~~

- ~~code to check a guess against an answer and to return an appropriate message. The example below gives one possible way to display the output, where hidden word is `TELLS` and the user guesses `TITLE`~~

```
WELCOME TO WORDLE!

Please enter guess 1:
> TITLE

Guess: TITLE
Results:

T - in word and in correct spot
I - not in word
T - not in word
L - in word in correct spot
E - in word in wrong spot

You have 5 guesses left
```

Notes:

- You can come up with your own format for the interface for welcoming the user and displaying results.
- In the above example the mystery word `TELLS` contains only one `T` so the second, and incorrect `T` gets marked as `not in word`.

MARK SCHEME

Third class grade (4.5/10) c
code that runs a Wordle-type game but has several issues or bugs

2:2 grade (5.5/10)
Code that runs a Wordle game but that includes 1-2 minor issues or bugs.

2:1 grade (6.5/10)
You must submit a `play_wordle()` function that works to allow the user to play wordle, and that is well structured with sufficient commenting.

First class grade (7.5/10)
Your `play_wordle()` function should additionally take additional optional arguments `wordlength` and `n_guesses` to allow the difficulty to be adjusted by setting the word length and number of allowed guesses.

Strong First class grade (8+/10)
You should work to include additional functionality so that the function acts in a similar way to the website e.g.

- one wordle per calendar day is generated
- the code keeps track of the users streak (number of daily wordles successfully completed)
- the code stores and gives a breakdown of the number of guesses taken for all completed games.

OPTIONAL BONUS TASK
Students can also submit an attempt at a Wordle guessing function that can solve Wordles efficiently by generating intelligent guesses for the hidden word.

So we can run a competition of solvers, please submit your solver in the form of a function `guess_word()` that takes an argument `hidden_word` and then returns a list containing the set of guesses generated.

Students entering code that is able to successfully guess hidden words will gain +1/10 marks and the best performing guesser (tested over 1000 random five letter words) will gain an additional +1/10 mark.