# CS-1180 Project 3: Word Game

**PURPOSE:** Demonstrate file input and output operations. Demonstrate appropriate usage of methods

**PROBLEM:** Build a word game loosely based on "Spelling Bee" from the New York Times.

To play, the user will be presented with 7 unique characters which have been scrambled but can spell a word that is composed of the 7 unique letters. The player uses the characters presented to make as many 4 or more letter words as they can from the list of letters.

**REQUIREMENTS:** Choose a word from `words.txt` that has exactly 7 **unique** letters. The same word should not be used each game round. Scramble the unique letters from the word and display them to the user. Display the user's score (score is 0 at start of game).

The user can enter one of four things that will perform the action(s) described. The current score should be displayed after each action.

- `mix`
    - displays the letters in a new order
- `ls` (short for list)
    - displays all valid words the user has entered
- `bye`
    - ends the game
- *a word*
    - checks if word was valid (see Scoring)
    - assigns points to valid word (see Scoring)
    - updates the score per the points earned

The game should continue performing the action based on the user's input and display the score after performing the action until the user enters `bye`.

**SCORING:**
Words guessed by the user:

- must be made of characters presented to the user
- must be at least 4 letters long
- may use the same letter more than once
- must be a valid word in `words.txt`

Assigning points for user guesses:

- four letter words are worth 1 point each
    - `test` = 1 point
- words longer than four letters are worth 1 point for each character
    - `testing` = 7 points
- words less than 4 letters **OR** words not in `words.txt` **OR** words that have already been guessed get 0 points

**EXAMPLES:** The game word chosen from words in `words.txt` in this example was: `pluming`

```
i        g        m        u        n        l        p
plum
Score: 1
mug
Score: 1
mix
p        m        u        g        i        l        n
Score: 1
limping
Score: 8
pluming
Score: 15
ls
plum
limping
pluming
Score: 15
bye
```

**RUBRIC:** Projects that don't compile will receive a 0. Use block comments for any non-compiling code. Projects that only have a main method will receive a 0.

**(80 pts) Base Functionality**

[15] Chooses a word with seven unique letters from `words.txt`

[5] Displays the seven unique letters to the user

[15] When the user types `mix`, program scrambles and redisplays the letters

[10] When the user types `ls`, program lists the valid words guessed

[5] When the user types `bye`, program exits

[10] Validates that user guessed words are valid words using words in `words.txt`

[10] Scores user guess words based on rules & updates score

[15] Logical use of methods to implement solution

**(15 pts) Style**

[10] Program is well-commented, following javadoc standards (method descriptions & block tags)

[5] Standard coding conventions are followed, including variable names and indentation