Courseware   Updates & News   Calendar   Wiki   Discussion   Progress

Help

INTRODUCTION - A WORD GAME

In this problem set, you'll implement *two* versions of the 6.00 wordgame!

Don't be intimidated by the length of this problem set. There is a lot of reading, but it can be done with a reasonable amount of thinking and coding. It'll be helpful if you start this problem set a few days before it is due!

Let's begin by describing the 6.00 wordgame: This game is a lot like Scrabble or Words With Friends, if you've played those. Letters are dealt to players, who then construct one or more words out of their letters. Each **valid** word receives a score, based on the length of the word and the letters in that word.

The rules of the game are as follows:

Dealing

- A player is dealt a hand of *n* letters chosen at random (assume *n=7* for now).

- The player arranges the hand into as many words as they want out of the letters, using each letter at most once.

- Some letters may remain unused (these won't be scored).

Scoring

- The score for the hand is the sum of the scores for each word formed.

- The score for a word is the sum of the points for letters in the word, multiplied by the length of the word, plus 50 points if all n letters are used on the first word created.

- Letters are scored as in Scrabble; A is worth 1, B is worth 3, C is worth 3, D is worth 2, E is worth 1, and so on. We have defined the dictionary `SCRABBLE_LETTER_VALUES` that maps each lowercase letter to its Scrabble letter value.

- For example, 'weed' would be worth 32 points ((4+1+1+2) for the four letters, then multiply by `len('weed')` to get (4+1+1+2)*4 = 32). Be sure to check that the hand actually has 1 'w', 2 'e's, and 1 'd' before scoring the word!

- As another example, if n=7 and you make the word 'waybill' on the first try, it would be worth 155 points (the base score for 'waybill' is (4+1+4+3+1+1+1)*7=105, plus an additional 50 point bonus for using all n letters).

Sample Output

Here is how the game output will look!

```
Loading word list from file...
   83667 words loaded.
Enter n to deal a new hand, r to replay the last hand, or e to end game: n
Current Hand: p z u t t o
Enter word, or a "." to indicate that you are finished: tot
"tot" earned 9 points. Total: 9 points
Current Hand: p z u t
Enter word, or a "." to indicate that you are finished: .
Total score: 9 points.

Enter n to deal a new hand, r to replay the last hand, or e to end game: r
Current Hand: p z u t t o
```

```
Enter word, or a "." to indicate that you are finished: top
"top" earned 15 points. Total: 15 points
Current Hand: z u t t
Enter word, or a "." to indicate that you are finished: tu
That is not a valid word. Please choose another word
Current Hand: z u t t
Enter word, or a "." to indicate that you are finished: .
Total score: 15 points.

Enter n to deal a new hand, r to replay the last hand, or e to end game: n
Current Hand: a q w f f i p
Enter word, or a "." to indicate that you are finished: paw
"paw" earned 24 points. Total: 24 points
Current Hand: q f f i
Enter word, or a "." to indicate that you are finished: qi
"qi" earned 22 points. Total: 46 points
Current Hand: f f
Enter word, or a "." to indicate that you are finished: .
Total score: 46 points.

Enter n to deal a new hand, r to replay the last hand, or e to end game: n
Current Hand: a r e t i i n
Enter word, or a "." to indicate that you are finished: inertia
"inertia" earned 99 points. Total: 99 points
Run out of letters. Total score: 99 points.

Enter n to deal a new hand, r to replay the last hand, or e to end game: e
```

Show Discussion

New Post

edX

EdX offers interactive online classes and MOOCs from the world's best universities. Online courses from MITx, HarvardX, BerkeleyX, UTx and many other universities. Topics include biology, business, chemistry, computer science, economics, finance, electronics, engineering, food and nutrition, history, humanities, law, literature, math, medicine, music, philosophy, physics, science, statistics and more. EdX is a non-profit online initiative created by founding partners Harvard and MIT.

About edX

About

News

Contact

FAQ

edX Blog

Donate to edX

Jobs at edX

Follow Us

Twitter

Facebook

Meetup

LinkedIn

Google+