

G6046 Software Engineering

Seminar session: Testing (solution for system level testing question)

Example application

The example program allows you to create, lookup and rate some words in a Dictionary. Here is a selection of key functional requirements that describe what the application is supposed to do:

| | |
|----|--|
| F1 | The application shall allow words to be added to the list of all words in the dictionary. The default rating for any word is 0. |
| F2 | All word operations shall be case insensitive. |
| F3 | The application shall allow the user to search for a specified word. If the word is present, it shall be displayed on the screen with the current word rating. |
| F4 | A user shall be able to upvote any specified word. An error shall be produced if the user attempts to upvote a word that is not present in the dictionary. |
| F5 | A user shall be able to downvote any specified word. An error shall be produced if the user attempts to downvote a word that is not present in the dictionary. |
| F6 | A word rating shall be an integer value in the range 0 to 10 inclusive. |

Note the proper use of “shall” for mandatory requirements and “should” for desirable requirements.

System testing document

| System testing: Performed by Kingsley Sage on 6 March 2021 using V1 of the Dictionary app. | | | | | | | |
|---|-----|---|--|-------------------------|-------------------------|------------|-----------------------------------|
| Ref | Req | Description | Input(s) | Expected output(s) | Actual output(s) | Pass /Fail | Action ? |
| 1 | F1 | Start app and check all words have 0 rating | Select option 1 | All words have 0 rating | All words have 0 rating | Pass | - |
| 2 | F1 | Add extra words and check all words have 0 rating | Add extra word in dictionary and then select option1 | All words have 0 rating | --- | FAIL | No way to add extra words from UI |

| | | | | | | | |
|----|----------|--|---|------------------------------|------------------------------|------|---|
| 3 | F2 | Search for "Cake" | Select option 2 and input "Cake" | Word confirmed | Word confirmed | PASS | - |
| 4 | F2 | Search for "cake" | Select option 2 and input "cake" | Word confirmed | Word confirmed | PASS | - |
| 5 | F3 | Start app, check "duck" has rating 0 and search for it | Select option 2 | Word confirmed with rating 0 | Word confirmed with rating 0 | PASS | - |
| 6 | F4 | Start app, upvote "duck" and search for it | Select option 3, input "duck" and upvote once | Word confirmed with rating 1 | Word confirmed with rating 1 | PASS | - |
| 7 | F4 | Start app and upvote non-existent word | Select option 3, and input "clock" | Error message | Error message | PASS | - |
| 8 | F4 F5 | Start app, uprate "crocodile" twice, and downvote once and search for it | Use option 3 twice and option 4 once | Word confirmed with rating 1 | Word confirmed with rating 1 | PASS | - |
| 9 | F5 | Start app and downvote non-existent word | Select option 4, and input "bong" | Error message | Error message | PASS | - |
| 10 | F6 | Try to upvote a valid word 12 times | Select option 3 twelve times for "duck" | Max rating of 10 | Max rating of 10 | PASS | - |
| 11 | F6 | Try to downvote a valid word with rating 0 | Start app, select option 4 twice for "duck" | Min rating of 0 | Min rating of 0 | PASS | - |

This is just one example – remember it is our job to determine whether the testing is sufficient to demonstrate the application is “fit for purpose”.

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