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COMPUTER SCIENCE

Testing Report
Team CodeX

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1 Functional Requirements

1.1 Core Functionality

Our tests for non-functional requirements can be found in Table 1.

1.1.1 Fuzzy Search:

This program must be able to locate and return products that are related to the searched term. It should be able to return the same product if various ways of writing the name is used. The test cases used for searching the database should return a list of products to the application. The tests ensured that a fitting result is returned by the search function and that the system doesn't not crash even when invalid input is given.

Test Cases:

- Null Value SOAP Search: 10
- SOAP Serach: 10
- Null value SOAP Serach by ID: 10
- SOAP Serach by ID: 10

1.1.2 Handling of special characters:

The system should be abe to ignore certain user mistakes or certain language rules that are used when the input is entered into the system. The test cases ensure that the exact same list is returned from the database when the special charaters are included in the input as when they are excluded from the input
Test Cases:

- Name and colon search: 10
- Name and hyphen search: 0
- Name and comma search: 0
- Name and fullstop search: 10
- Name and slash search: 10
- Name and semi-colon search: 0
- Name and star search: 0
- Name and hash search: 0
- Name and exclamation search: 0

1.1.3 Handling of special characters:

The system should be able to appropriate handle numbers given to it as input. These tests ensure that the application will return products that contain the numerical values given to it by the user.

- Measurment search: 10
- Name and number search: 10

1.1.4 Delimiter:

The system should be abe to ignore certain user mistakes or certain language rules that are used when the input is entered into the system. For delimiter testing we want to check for the maximum number of characters the system will ignore before it returns a list diffrent from expected correct list.
Test Cases:

- delimiter search: 10
  - Name and exclamation search: 10
  - Max number of characters: 5

1.1.5 Dictionary:

The system should be abe to store terms that are linked to each other and can be used interchangable. It should also return the same list when either one of the terms linked is used in a search.
Test Cases:

- Add word to Dictionary: 10
- Dictionary word search: 10

1.2 Innovations

1.2.1 Fast Run-time:

Because there are very large amounts of data to be searched, it is vital for the program to be very efficient. Even though this could be a non-functional requirement, it is vital for this program to be as fast and efficient as possible. THis is checked by comparing it to the previous system used by reroute and camparing the two using the follwing test

Test Case:

- Response time per search: 1

1.3 Benchmark Testing:

1.3.1 Handling Concurrent Users:

This program will be used by many people, in many different

elds simultaneously. It is therefore very important for it to be able to handle multiple users at the same time. This will be achieved by the Cloud based architecture. Test Case:

- TBD

1.3.2 Scalability:

Since it is essential for this system to be efficient with large datasets as well as small datasets, scalability will be an essential functional requirement. The systems ability to stay efficient with very large sets of data is an essential part to the system. The system should use less storage space and memory than the previous system. The tests should show that the new system iis objectively better than the current systemn when running on the ame hardware. Test Case:

- Rate of compression: 1

2 Non-Functional Requirements

2.1 Predictive Typing:

Predictive typing is when the program suggests a possible solution as the user is typing. This is often based on previous searches and most common searches. This will help improve the user experience.

Score: 0

2.2 Roubstness:

The system will not be easily breakable as it will be error proof to a feasible extent, to avoid unnecessary fault and not wholly be affected by the hardware failures. The system should be able to recover quickly from such failures, or at least be able to hold up or return to a valid stage/state.

Score: 0

2.3 Storing and using search history:

Being able to store the search history will increase the user experience, help with predictive typing and improve the program's ability to learn and adapt.

Score: 0

Table 1: Test Details

Test Fuzzy Search:

Test	Input	Expected Result	Actual Result	Comment	Score	Weight
SOAP Search	Product Name: Panado	27	27		10	5
Null SOAP Search	Product Name: NULL	0	0		8	5
Null SOAP Search by ID	Product ID: 1	1	1		10	5
SOAP Search by ID	Product ID: NULL	0	0		10	5
Name and colon Search	Product Name: Pa:nado	27	27		10	1
Name and hyphen Search	Product Name: Pa-nado	27	0		0	1
Name and comma Search	Product Name: Pa,nado	27	0		0	1
Name and fullstop Search	Product Name: Pana.do	27	27		10	1
Name and slash Search	Product Name: P/anado	27	27		10	1
Name and semi-colon Search	Product Name: Panado;	27	0		0	1
Name and star Search	Product Name: Pana*do	27	0		0	1
Name and hash Search	Product Name: #Panado	27	0		0	1
Name and Exclamation Search	Product Name: Pana!do	27	0		0	1
Add words to dictionary	Words: Tab, Tabs	(TAB, TABS)	(TAB, TABS)		10	10
Dictionary word search:	Product Names: -Panado tab -Panado tabs	9	9		10	5
Measurement search:	Product Names: 200mg	56	56		10	1
Name and number search:	Product Names: Panado 2	2	2		10	1
Delimiter search:	Product Names: .Pa.n-ad.o.	2	2		5	1

Table 2: Benchmark Testing

Test Performance (per 10000 Threads)

Test	Input	Current System	Our System	Comment	Score	Weight
Max Response:	Product Name: Panado	tba	12943ms		1	10
Average Response Time (in milliseconds):	Product Name: Panado	tba	3604ms		1	10
Throughput (number of requests/minutes):	Product Name: Panado	tba	8,913.848/minute		1	10
Kilobytes Received (KB/sec):	Product Name: Panado	tba	121.37/sec		1	10
Kilobytes Sent(KB/sec):	Product Name: Panado	tba	83.40		1	10
Error percentage:	Product Name: Panado	tba	23.46		1	10