

Read_Me.pdf

Sunday, February 4, 2018 5:31 PM

<https://github.com/ps-vivek/Datastructures-WebService.git>

Tools/Env needed to run on local:

JDK 8
MAVEN
Any IDE that supports Java & Maven (Eclipse/IntelliJ etc..)
Postman(Optional), Project has in built swagger support to test the API
MongoDb

Ensure that MongoDB server is started on local before running this code.

Swagger URL: <http://localhost:2800/swagger-ui.html#!/>

API 1

API NAME: <http://localhost:2800/ds/SLL/insert/appendToTail>

POST REQUEST

INPUT REQUEST -> JSON FORMAT

OUTPUT RESPONSE -> XML FORMAT

PROBLEM STATEMENT:

Create a Single linked list structure by adding elements to the end of the list without the usage of in-built list.

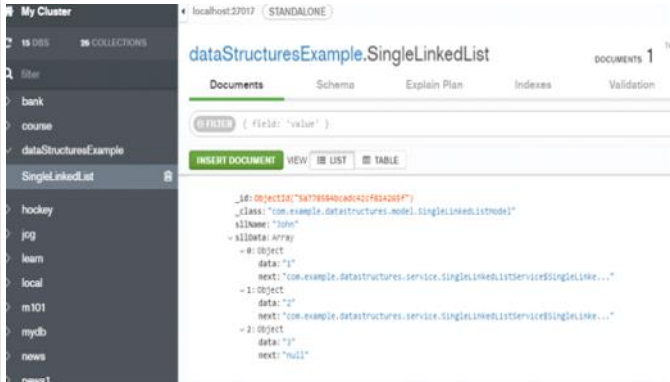
For the purpose of demonstrating this as a **spring boot webservice**, below exclusions are provided for implementing the requirement:

- 1) All the elements that needs to be appended to the linked list will be provided at one shot and a corresponding entry will be inserted for that given list in database.
Once the list is created with a given set of elements, it won't be retrieved back to add further elements. All the elements will be associated to a name that is always unique. So the request object will be as follows:

Request Object:

```
{
  "listElements": [
    ],
  "listName": ""
}
```

Both "listElements" and "listName" accept string as inputs. Both need to contain value for processing the request successfully.

Request	Response	COMMENTS
<pre>{ "listElements": ["1","2","3"], "listName": "" }</pre>	<pre><singleLinkedListResponse> <status>FAILURE</status> <description>Invalid empty request received as input</description> </singleLinkedListResponse></pre>	Empty list name provided
<pre>{ "listElements": ["1","2","3"], "listName": "John" }</pre>	<pre><singleLinkedListResponse> <status>SUCCESS</status> <description>SUCCESSFULLY APPENDED ELEMENT TO LINKED LIST</description> </singleLinkedListResponse></pre>	List got created and one entry is created 
<pre>"listElements": ["1","2","3"], "listName": "John" }</pre>	<pre><singleLinkedListResponse> <status>FAILURE</status> <description>GIVEN LIST NAME ALREADY EXISTS IN DB. PROVIDE UNIQUE LIST NAME</description> </singleLinkedListResponse></pre>	Same input as above is inserted
<pre>{ "listElements": ["1","2","3"], "listName": "John" }</pre>	<pre><singleLinkedListResponse> <status>FAILURE</status> <description>DUPLICATE LIST NAME ALREADY EXISTS IN DB. LIST NAME SHOULD ALWAYS BE UNIQUE.</description> </singleLinkedListResponse></pre>	Assume that by accident duplicate entry is present in db. Error handling will be performed.

API 2

API NAME: <http://localhost:2800/ds/stack/isbalanced>

GET REQUEST

INPUT REQUEST -> STRING

OUTPUT RESPONSE -> XML FORMAT

PROBLEM STATEMENT

(Source: <https://www.hackerrank.com/challenges/balanced-brackets/problem> or <https://github.com/ps-vivek/Datastructures-WebService/blob/master/src/main/resources/StackReadMe.txt>)

The above problem will be implemented with the addition of below criterion:

If the given pattern is already present in **isBalancedStack** collection of the mongo db, just the result of it will be directly returned.

If the given pattern is already not present in **isBalancedStack** collection of the mongo db, logic will kick in for checking whether the given pattern is balanced or not. The results will then be stored onto **the isBalancedStack** collection for future usage.

Request	Response	COMMENTS
[[{()}}]	<?xml version="1.0" encoding="UTF-8" standalone="yes"?> <stackResponse> <status>SUCCESS</status> <description>Given pattern is balanced</description> </stackResponse>	
[[{()}}]	<?xml version="1.0" encoding="UTF-8" standalone="yes"?> <stackResponse> <status>SUCCESS</status> <description>Given pattern is not balanced</description> </stackResponse>	