SE 3XA3

REST Assured

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MIS

Team 31

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Contents

List of Tables

List of Figures

1 Revision History

Date	Version	Notes
10-Nov-2017	0.0	Revision 0

Table 1: **Revision History**

2 RestStub Module

Template Module

RestStubT

Uses

Constants

Syntax

Exported Types

RestStubT = ?

Exported Access Programs

Routine name	In	Out	Exceptions
RestStub	JSON		
toJSON		JSON	
setRequestType	String		
getRequestType			
~~runTest~~	Function		

Semantics

State Variables

label: String - User readable label of the test stub.
identifier: String - Unique string used to identify test stubs.
requestType: String - Type of request for the test: [GET, PUT, POST, DELETE]
requestData: JSON - Data for the request.
responseData: JSON - Response data for the request.
expectedData: JSON - Expected response data.

resource: String - Resource location (HTTP)

State Invariant

Assumptions

Access Routine Semantics

RestStub(data):

- input: JSON equivalent copy of an existing RestStub, or null.

- transition: The module constructor. Loads information from data if possible.

- output: Assign fields to the data fields, if data is null the fields are set to defaults.

- exception: none

toJSON():

- input: none

- transition: none

- output: JSON equivalent of the object.

- exception: none

setRequestType(rtype):

- input: rtype

- transition: Sets the value of requestType field to rtype

- output: none

- exception: none

getRequestType():

- input: none

- transition: none

- output: Value of requestType

- exception: none

~~runTest(callback):~~

- ~~input: none~~

- ~~transition: Runs the test and executes the callback operation based on the test success.~~

- ~~output: none~~

- ~~exception: none~~

Local Functions

3 RestChain Module

Template Module

RestChainT

Uses

Constants

Syntax

Exported Types

RestChain = ?

Exported Access Programs

Routine name	In	Out	Exceptions
RestChain	JSON		
addTest	String		
removeTest	String		MissingTestException
moveTest		String, int	MissingTestException, IndexOutOfBounds
~~runTests~~	~~Function~~		

Semantics

State Variables

label: String - User readable label of the RestChain.
identifier: String - Unique string used to identify RestChain.
reststublist: List<String> - List of RestChain identifiers to be run by the RestChain.

State Invariant

Assumptions

Access Routine Semantics

RestChain(data):

- input: JSON equivalent copy of an existing RestChain, or null.

- transition: The module constructor.

- output: Assign fields to the data fields, if data is null the fields are set to defaults.

- exception: none

toJSON():

- input: none

- transition: none

- output: JSON equivalent of the object.

- exception: none

addTest(testid):

- input: String of the identifier for the RestStub to add to the RestChain.

- transition: Appends the identifier, to the reststublist.

- output: Json equivalent of the object.

- exception: none

removeTest(identifier):

- input: Identifier of test to remove from the RestChain.

- transition: Test identifier is removed from reststublist.

- output: none

- exception: MissingTestException: Thrown if the RestStub is not in reststublist.

moveTest(identifier, newIndex):

- input: Identifier of the RestStub, and new index in the list.

- transition: Moves the position of the corresponding RestStub in reststublist.

- output: none

- exception: MissingTestException: Thrown if the RestStub is not in reststublist. IndexOutOfBounds: newIndex is not a valid index for reststublist.

~~runTests(callback):~~

- ~~input: none~~

- ~~transition: Runs the tests in the RestChain and executes callback function with success boolean.~~

- ~~output: none~~

- ~~exception: none~~

Local Functions

4 JsonComparer Module

Module

JsonComparer

Uses

Constants

Syntax

Exported Types

Exported Access Programs

Routine name	In	Out	Exceptions
compare	JSON, JSON		
compareExact	JSON, JSON	JSON	
compareWithTolerance	JSON, JSON, int		

Semantics

State Variables

State Invariant

Assumptions

Access Routine Semantics

compare(expected, received):

- input: Two json objects to compare for similarities.

- transition: none

- output: True if received is a subset of expected.

- exception: none

compareExact(expected, received):

- input: Two json objects to compare for similarities.

- transition: none

- output: Returns True if received is identical to expected. Otherwise, False is returned.

- exception: none

compareWithTolerance(expected, received, mostDifferences):

- input: Two json objects to compare for similarities, and an int for the maximum number of differences between the json objects.

- transition: none

- output: none

- exception: none

Local Functions

5 JsonParser Module

Module

JsonParser

Uses

Constants

Syntax

Exported Types

Exported Access Programs

Routine name	In	Out	Exceptions
prettify	JSON	String	
JSONtoParam	JSON	String	

Semantics

State Variables

State Invariant

Assumptions

Access Routine Semantics

prettify(data):

- input: json object to prettify (turn into user-readable Srting)

- transition: none

- output: Returns prettified version of data.

- exception: none

JSONtoParam(data):

- input: json object to paramaterize.

- transition: none

- output: Returns a paramaterized version of data that can be used in HTTP requests.

- exception: none

Local Functions

6 RestConsole Module

Module

RestConsole

Uses

Syntax

Exported Types

Exported Access Programs

Routine name	In	Out	Exceptions
restLog	String		
reRenderConsole			

Semantics

State Variables

State Invariant

Assumptions

Access Routine Semantics

restLog(message):

- input: String message to add to the console.

- transition: Adds the message to the console list. Calls reRenderConsole to display the data to the user.

- output: none

- exception: none

reRenderConsole():

- input: none

- transition: Displays the diagnostic console information to the user.

- output: none

- exception: none

Local Functions

7 RestStubEvaluator Module

Module

RestStubEvaluator

Uses

jsonComparer

Syntax

Exported Types

Exported Access Programs

Routine name	In	Out	Exceptions
runTest	RestStub, Function, Function		

Semantics

State Variables

State Invariant

Assumptions

Access Routine Semantics

runTest(restStub, successCallback, failureCallback):

- input: RestStub to test. Two functions that will be called if the test succeeds or fails.

- transition: Runs a comparison test on the restStub. Runs the successCallback function if the RestStub passes its specified test. Runs the failureCallback function if the RestStub fails its specified test.

- output: none

- exception: none

Local Functions

8 RestSuite Module

Module

RestSuite

Uses

Constants, ProfileStore, IO, JsonParser, RestConsole

Syntax

Exported Types

Exported Access Programs

Routine name	In	Out	Exceptions
display			
saveAllToDisk			
loadAllFromDisk			
saveSpecifiedToDisk	String		

Semantics

State Variables

currentRestChain: RestChain - Highlighted RestChain
currentRestStub: RestStub - Highlighted RestStub
currentProfileStore: ProfileStore - Highlighted ProfielStore

State Invariant

Assumptions

Access Routine Semantics

display():

- input: none

- transition: none

- output: Visual information for the Window to display to the user.

- exception: none

saveAllToDisk:

- input: none

- transition: none

- output: Downloads the application's state to the user's machine.

- exception: none

loadAllFromDisk():

- input: none

- transition: none

- output: Updates the application's state with information from a selected file.

- exception: none

saveSpecifiedToDisk(data):

- input: none

- transition: none

- output: Saves specified information to a file.

- exception: none

reRenderTestSelect():

- input: none

- transition: Renders the RestStub information to the UI.

- output: none

- exception: none

uiDeleteRestStub(identifier):

- input: identifier for the RestStub to delete.

- transition: Deletes the corresponding RestStub by performing deleteRestStub(identifier) on currentProfileStore.

- output: none

- exception: none

uiCopyRestStub(identifier):

- input: identifier for the RestStub to copy.

- transition: Copies the corresponding RestStub by performing copyRestStub(identifier) on currentProfileStore. Adds the new RestStub to currentRestChain by performing addTest with the new RestStub's identifier.

- output: none

- exception: none

uiCreateRestStub():

- input: none

- transition: Creates a new RestStub by performing createRestStub() on currentProfile-Store. Adds the new RestStub to currentRestChain by performing addTest with the new RestStub's identifier.

- output: none

- exception: none

updateCurrentRestStub():

- input: none

- transition: Takes form data from the master detail form, and stores it into currentRestStub by using setters. Finally calls reRenderTestSelect().

- output: none

- exception: none

changeCurrentRestStub(identifier):

- input: identifier for the RestStub to switch focus to.

- transition: currentRestStub will point to the RestStub with the corresponding identifier after performing getRestStubFromID(identifier) on currentProfileStore.

- output: none

- exception: none

moveDownCurrentRestStub(identifier):

- input: identifier for the RestStub to move down currentRestChain.

- transition: The corresponding RestStub will be moved one position lower on the RestChain after performing moveRestStub (with appropriate parameters) on currentRestChain.

- output: none

- exception: none

displayCurrentRestStub():

- input: none

- transition: Takes information from currentRestStub, and displays it unto the master detail form.

- output: none

- exception: none

runAllTests():

- input: none

- transition: Performs all tests on RestStubs inside of currentRestChain. Sequentially calls runNextTest until all tests are run or until one test fails. If any RestStub fails a test, the UI notifies the user by calling failTests(). If all RestStubs pass their tests, the UI notifies the user by calling succeedTests().

- output: none

- exception: none

runNextTest():

- input: none

- transition: Perform the next test on RestStubs inside of currentRestChain.

- output: none

- exception: none

failTests():

- input: none

- transition: Notifies the user that tests fails by displaying a message on the screen.

- output: none

- exception: none

succeedTests():

- input: none

- transition: Notifies the user that tests succeeded by displaying a message on the screen.

- output: none

- exception: none

Local Functions

9 Constants Module

Module

Constants

Uses

Constants

Syntax

Exported Constants

REQUEST_TYPES: List<String> - String of valid requests ID_LENGTH: int - Length of valid identifiers ID_CHARACTERPOOL: String - String of valid characters for identifiers

Exported Access Programs

Semantics

State Variables

State Invariant

10 ProfileStore Module

Module

ProfileStore

Uses

Constants

Syntax

Exported Types

Exported Access Programs

Routine name	In	Out	Exceptions
init			
getRestStubFromID	String	RestStub	missingRestStub
getRestChainFromID	String	RestChain	missingRestChain
newRestStub		String	
newRestChain		String	
copyRestStub	String	String	missingRestStub
copyRestChain	String	String	missingRestChain
generateIdentifier		String	
newProfile		String	
deleteRestStub	String		missingRestStub
deleteRestChain	String		missingRestChain
textcolorredrandomHash	String		

Semantics

State Variables

textcolorredallRestStubs: List<RestStub> - List of all identifiers for RestStubs in memory.
textcolorredallRestChains: List<RestChain> - List of all identifiers for RestChains in memory.
textcolorredallIdentifiers: List<String> - List of all identifiers in memory.
textcolorredallProfiles: List<Profile> - List of all profiles in memory.

State Invariant

Assumptions

Access Routine Semantics

getRestStubFromID(identifier):

- input: Ientifier of the RestChain to retrieve.

- transition: none

- output: RestChain with the identifier.

- exception: none

getRestChainFromID(identifier):

- input: none

- transition: none

- output: none

- exception: none

newRestStub():

- input: none

- transition: Creates a new RestStub, and appends it to allRestStubs.

- output: Identifier of the new RestStub.

- exception: none

copyRestStub(identifier):

- input: Identifier of the RestStub to copy.

- transition: Creates a deep copy of an existing RestStub, and appends it to allRestStubs.

- output: Identifier of the new RestStub.

- exception: none

copyRestChain(identifier):

- input: Identifier of the RestChain to copy.

- transition: Creates a deep copy of an existing RestChain, and appends it to allRestChains.

- output: New identifier.

- exception: none

newProfile():

- input: none

- transition: Creates a new Profile, and appends it to allProfiles.

- output: Identifier of the new Profile.

- exception: none

deleteRestStub(identifier):

- input: none

- transition: Removes a RestStub from allRestStubs, and performs removeRestStub(identifier) on all Profile objects in allProfiles.

- output: none

- exception: none

deleteRestChain(identifier):

- input: none

- transition: Removes a RestChain from allRestStubs, and performs removeRestChain(identifier) on all Profile objects in allRestChains.

- output: none

- exception: none

Local Functions

11 Profile Module

Module

ProfileT

Uses

RestStub, RestChain

Syntax

Exported Types

Exported Access Programs

Routine name	In	Out	Exceptions
init			
getRestStubs		List<String>	
getRestChains	List<String>		
addRestStub	String		
addRestChain	String		
removeRestStub	String	String	
removeRestChain	String	String	

Semantics

State Variables

loca_RestStubs: List<String> - List of identifiers for RestStubs in this Profile.
local_RestChains: List<String> - List of identifiers for RestChains in this Profile.
local_identifiers: List<String> - List of identifiers in this Profile.

State Invariant

Assumptions

Access Routine Semantics

getRestStubs():

- input: none

- transition: none

- output: copy of local_RestStubs

- exception: none

getRestChains():

- input: none

- transition: none

- output: Copy of local_RestChains.

- exception: none

addRestStub():

- input: Identifier of RestStub to add to Profile.

- transition: Adds corresponding RestStub, and appends it to local_RestStubs.

- output: dentifier of the new RestStub.

- exception: none

addRestChain():

- input: Identifier of RestChain to add to Profile.

- transition: Creates a new RestChain, and appends it to local_RestChains.

- output: Identifier of the new RestChain.

- exception: none

removeRestStub(identifier):

- input: Identifier of RestChain to remove from Profile.

- transition: Removes the RestStub local_RestStubs, if it exists. Performs the RemoveRestStub(identifier) on all TestChains in local_RestChains.

- output: none

- exception: none

removeRestChain(identifier):

- input: Identifier of RestChain to remove from Profile.

- transition: Removes the RestChain local_RestChains, if it exists.

- output: none

- exception: none

Local Functions

12   IO Module

Module

IO

Uses

Constants

Syntax

Exported Types

Exported Access Programs

Routine name	In	Out	Exceptions
readFile	String	String	MissingFileException, FileSizeError
saveFile	String, String	JSON	MissingFileException

Semantics

State Variables

State Invariant

Assumptions

Access Routine Semantics

readFile(location):

- input: Storage location of file to read.

- transition: none

- output: String of file contents.

- exception: none

saveFile(fileName, data):

- input: Name of file to save to the user's computer, and the data to store in the file.

- transition: none

- output: String of file contents.

- exception: none

Local Functions