

FINAL ASSIGNMENT
Principles of Software Development

TEST DRIVEN DEVELOPMENT

Course 2019/2020

DEGREE IN COMPUTER ENGINEERING

GROUP 88

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1. Token Revocation

In this section, the tests performed on the *revokeToken* functionality are described and commented depending on the testing technique applied.

1.1. Equivalence classes and Boundary value analysis

For this part, we are applying the equivalence classes and boundary values analysis for the *revokeToken* functionality.

1.1.1. Definition EC and BV

In this table we have three columns each one indicates what is being analysed, the id of this analysis and which parameters are affected.

ANALYSIS	ID EC-BV	DESCRIPTION
File Existence	FA-EC-V01	The file path exists
	FA-EC-NV02	The file path does not exists
Reason Length	FA-EC-V03	The length is correct
	FA-EC-NV04	The length is not correct
	FA-BV-V05	The length is 99
	FA-BV-V06	The length is 100
	FA-BV-NV07	The length is 101
	FA-BV-NV08	The length is 0
	FA-BV-V09	The length is 1
	FA-BV-V10	The length is 2
Type of revocation	FA-EC-V11	The type is Temporal Final
	FA-EC-NV12	The type is incorrect
Token Value	FA-EC-V15	The token value meets the RE
	FA-EC-NV16	The token value does not meet the RE

1.1.2. Tests

In the following table, we implement the boundary values and equivalence classes represented in the previous section with the following tests:

TEST CASE ID	INPUT PARAMETERS	ID EC-BV INVOLVED	DESCRIPTION
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FA-REVOC-SEMANT ICS-01	Path:"Invalid/path"	FA-EC-NV02	Invalid path for revocation token
FA-REVOC-SEMANT ICS-02	<pre>{ "Token Value": "QWxnPUhTMjU2XG4 gVHlwPVBEU1xuRGV 2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwM DU4YWQ4MTM4XG4 gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBc biBleHA9MjUtMDMtMj AyMCAxMDoyMjoyM GlzYWMwYjRkNjQyO TE1OGRhMTI4NzYxZ Tk4Y2U4MzE3ZmE5 MjhkNDJjNzEwYTlkM DZmNjRjOTY2N2JkZ DM3MWM=", "Type of revocation":"Temporal" , "Reason":"111111111 111111111111111111 111111111111111111 111111111111111111 111111111111111111 111111111111111119 " }</pre>	FA-EC-V03 FA-BV-V05	Reason length 99
FA-REVOC-SEMANT ICS-03	<pre>{ "Token Value": "QWxnPUhTMjU2XG4 gVHlwPVBEU1xuRGV 2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwM DU4YWQ4MTM4XG4 gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBc biBleHA9MjUtMDMtMj AyMCAxMDoyMjoyM GlzYWMwYjRkNjQyO TE1OGRhMTI4NzYxZ Tk4Y2U4MzE3ZmE5 MjhkNDJjNzEwYTlkM DZmNjRjOTY2N2JkZ DM3MWM=", "Type of revocation":"Temporal" ,</pre>	FA-EC-V03 FA-BV-V06	Reason length 100

	<pre>"Reason": "1111111111 111111111111111111 111111111111111111 111111111111111111 111111111111111111 111111111111111119 0" }</pre>		
FA-REVOC-SEMANT ICS-04	<pre>{ "Token Value": "QWxnPUhTMjU2XG4 gVHlwPVBEU1xuRGV 2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwM DU4YWQ4MTM4XG4 gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBc biBleHA9MjUtMDMtMj AyMCAxMDoyMjoyM GlzYWMwYjRkNjQyO TE1OGRhMTI4NzYxZ Tk4Y2U4MzE3ZmE5 MjhkNDJjNzEwYTlkM DZmNjRjOTY2N2JkZ DM3MWM=", "Type of revocation": "Temporal" , "Reason": "1111111111 111111111111111111 111111111111111111 111111111111111111 111111111111111111 111111111111111111 111111111111111119 01" }</pre>	FA-EC-NV04 FA-BV-NV07	Reason length 101
FA-REVOC-SEMANT ICS-05	<pre>{ "Token Value": "QWxnPUhTMjU2XG4 gVHlwPVBEU1xuRGV 2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwM DU4YWQ4MTM4XG4 gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBc biBleHA9MjUtMDMtMj AyMCAxMDoyMjoyM GlzYWMwYjRkNjQyO TE1OGRhMTI4NzYxZ Tk4Y2U4MzE3ZmE5</pre>	FA-EC-NV04 FA-BV-NV08	Reason length 0

	<pre> MjkhNDJjNzEwYTIkM DZmNjRjOTY2N2JkZ DM3MWM=", "Type of revocation": "Temporal" , "Reason": "" } </pre>		
FA-REVOC-SEMANT ICS-06	<pre> { "Token Value": "QWxnPUhTMjU2XG4 gVHlwPVBEU1xuRGV 2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwM DU4YWQ4MTM4XG4 gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBc biBleHA9MjUtMDMtMj AyMCAxMDoyMjoyM GlzYWMwYjRkNjQyO TE1OGRhMTI4NzYxZ Tk4Y2U4MzE3ZmE5 MjkhNDJjNzEwYTIkM DZmNjRjOTY2N2JkZ DM3MWM=", "Type of revocation": "Temporal" , "Reason": "1" } </pre>	FA-EC-V03 FA-BV-V09	Reason length 1
FA-REVOC-SEMANT ICS-07	<pre> { "Token Value": "QWxnPUhTMjU2XG4 gVHlwPVBEU1xuRGV 2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwM DU4YWQ4MTM4XG4 gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBc biBleHA9MjUtMDMtMj AyMCAxMDoyMjoyM GlzYWMwYjRkNjQyO TE1OGRhMTI4NzYxZ Tk4Y2U4MzE3ZmE5 MjkhNDJjNzEwYTIkM DZmNjRjOTY2N2JkZ DM3MWM=", "Type of revocation": "Temporal" , </pre>	FA-EC-V03 FA-BV-V10	Reason length 2

	"Reason": "12" }		
FA-REVOC-SEMANT ICS-08	{ "Token Value": "QWxnPUhTMjU2XG4 gVHlwPVBEU1xuRGV 2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwM DU4YWQ4MTM4XG4 gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBc biBleHA9MjUtMDMtMj AyMCAxMDoyMjoyM GlzYWMwYjRkNjQyO TE1OGRhMTI4NzYxZ Tk4Y2U4MzE3ZmE5 MjhhNDJjNzEwYTlkM DZmNjRjOTY2N2JkZ DM3MWM=", "Type of revocation": "Forever", "Reason": "Token no longer needed" }	FA-EC-NV12	Invalid type of device
FA-REVOC-SEMANT ICS-09	{ "Token Value": "}?&/M=", "Type of revocation": "Temporal" , "Reason": "Token no longer needed" }	FA-EC-NV16	base64 with invalid characters
FA-REVOC-SEMANT ICS-10	{ "Token Value": "QWxnPUhTMjU2XG4 gVHlwPVBEU1xuRGV 2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwM DU4YWQ4MTM4XG4 gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBc biBleHA9MjUtMDMtMj AyMCAxMDoyMjoyM GlzYWMwYjRkNjQyO TE1OGRhMTI4NzYxZ Tk4Y2U4MzE3ZmE5 MjhhNDJjNzEwYTlkM DZmNjRjOTY2N2JkZ DM3MWM=",	FA-EC-V01 FA-EC-V03 FA-EC-V11 FA-EC-V15	Valid token revocation

	<pre>"Type of revocation":"Temporal" , "Reason":"Token no longer needed" }</pre>		
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1.2. Syntax Analysis

In this section we use a grammar for the Json parser to check for any malfunction and throw the correspondent exceptions.

1.2.1. Grammar definition

The following grammar has been defined for *revokeToken*, in which the blue words indicate non-terminal nodes and green words indicate terminal nodes:

FILE -> INIT DATA END

INIT -> {

END -> }

DATA -> VARIABLE1 COMMA VARIABLE2 COMMA VARIABLE3

COMMA -> ,

VARIABLE1 -> TOKEN COL VALUE1

VARIABLE2 -> REVOCATION COL VALUE2

VARIABLE3 -> REASON COL VALUE3

COL -> :

TOKEN -> QUOTATIONS TOKEN_VAL QUOTATIONS

REVOCATION -> QUOTATIONS REVOC QUOTATIONS

REASON -> QUOTATIONS REAS_VAL QUOTATIONS

QUOTATIONS -> “

TOKEN_VAL -> Token Value

REVOC -> Type of revocation

REAS_VAL -> Reason

VALUE1 -> QUOTATIONS RETOKEN QUOTATIONS

VALUE2 -> QUOTATIONS REREVOC QUOTATIONS

VALUE3 -> QUOTATIONS RE_STR QUOTATIONS

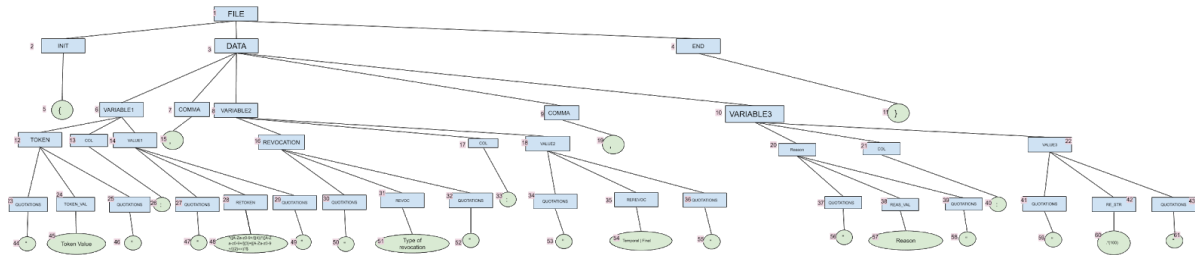
RETOKEN -> ^([A-Za-z0-9+/]{4})*([A-Za-z0-9+/]{3}=[A-Za-z0-9+/]{2}==)?\$

REREVOC -> Temporal | Final

RE_STR -> .*(100)

1.2.2. Derivation tree

In this section, we show the derivation tree implemented, because of the image size the readability is not optimal. For this reason, **we attach the image in a folder called Documents with the name Grammar revokeToken.**



1.2.3. Tests

In this section, we implement the tests for *revokeToken* based on syntax analysis:

TEST CASE ID	INPUT PARAMETERS	COVERED NODES	DESCRIPTION
FA-REVOC-01		1	Node removed
FA-REVOC-02	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZmEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	1	Node duplicated

	"Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }		
FA-REVOC-03	"Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	2	Node removed
FA-REVOC-04	{{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }}	2	Node duplicated
FA-REVOC-05	{}	3	Node removed
FA-REVOC-06	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=",	3	Node duplicated

	<pre> "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" } </pre>		
FA-REVOC-07	<pre> { "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" } </pre>	4	Node removed
FA-REVOC-08	<pre> { "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }} </pre>	4	Node duplicated

FA-REVOC-09	<p>/</p> <p>"Token Value":</p> <p>"QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=",</p> <p>"Type of revocation": "Temporal",</p> <p>"Reason": "This node is not needed anymore"</p> <p>}</p>	5	Node modified
FA-REVOC-10	<p>{</p> <p>,</p> <p>"Type of revocation": "Temporal",</p> <p>"Reason": "This node is not needed anymore"</p> <p>}</p>	6	Node removed
FA-REVOC-11	<p>{</p> <p>"Token Value":</p> <p>"QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM="</p> <p>"Token Value":</p> <p>"QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=",</p> <p>"Type of revocation": "Temporal",</p> <p>"Reason": "This node is not needed anymore"</p> <p>}</p>	6	Node duplicated

FA-REVOC-12	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=" "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	7, 9	Node removed
FA-REVOC-13	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=",, "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	7, 9	Node duplicated
FA-REVOC-14	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", , "Reason": "This node is not needed anymore" }</pre>	8	Node removed

FA-REVOC-15	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal" "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	8	Node duplicated
FA-REVOC-16	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", }	10	Node removed
FA-REVOC-17	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" "Reason": "This node is not needed anymore" }	10	Node duplicated

FA-REVOC-18	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" /	11	Node modified
FA-REVOC-19	{ : "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	12	Node removed
FA-REVOC-20	{ "Token Value""Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	12	Node duplicated

FA-REVOC-21	{ "Token Value" "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZl YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhhN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	13, 21	Node removed
FA-REVOC-22	{ "Token Value": :"QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZl YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhhN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Final", "Reason": "This node is not needed anymore" }	13, 21	Node duplicated
FA-REVOC-23	{ "Token Value": , "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	14	Node removed
FA-REVOC-24	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZl YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhhN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM="	14	Node duplicated

	<pre>"QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>		
FA-REVOC-25	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM="/ "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	15, 19	Node modified
FA-REVOC-26	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", :"Temporal", "Reason": "This node is not needed anymore" }</pre>	16	Node removed

FA-REVOC-27	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation""Type of revocation" :"Temporal", "Reason": "This node is not needed anymore" }	16	Node duplicated
FA-REVOC-28	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation":, "Reason": "This node is not needed anymore" }	18	Node removed
FA-REVOC-29	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal" "Temporal", "Reason": "This node is not needed anymore" }	18	Node duplicated

	}		
FA-REVOC-30	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZl YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	20	Node removed
FA-REVOC-31	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZl YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "Reason": "This node is not needed anymore" }</pre>	20	Node duplicated
FA-REVOC-32	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZl YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": } }</pre>	22	Node removed

FA-REVOC-33	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" "This node is not needed anymore" }</pre>	22	Node duplicated
FA-REVOC-34	<pre>{ Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	23, 30, 37	Node removed
FA-REVOC-35	<pre>{ ""Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	23, 30, 37	Node duplicated

FA-REVOC-36	<pre>{ "": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	24	Node removed
FA-REVOC-37	<pre>{ "Token ValueToken Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	24	Node duplicated
FA-REVOC-38	<pre>{ "Token Value: "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	25, 32, 39	Node removed

FA-REVOC-39	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZl YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhhN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	25, 32, 39	Node duplicated
FA-REVOC-40	<pre>{ "Token Value"/ "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZl YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhhN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	26, 33, 40	Node modified
FA-REVOC-41	<pre>{ "Token Value": QWxnPUhTMjU2XG4gVHlwPVBE U1xuRGV2PTI3OGU3ZTI3NzMyY zRINTM5NDZjZjIwMDU4YWQ4M TM4XG4gaWF0PTE4LTAzLTlwMj AgMTA6MjI6MjBcbiBleHA9MjUtM DMtMjAyMCAxMDoyMjoyMGZlY WMwYjRkNjQyOTE1OGRhMTI4N zYxZTk4Y2U4MzE3ZmE5MjhhND JjNzEWYTIkMDZmNjRjOTY2N2Jk ZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	27, 34, 41	Node removed

FA-REVOC-42	{ "Token Value": ""QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	27, 34, 41	Node duplicated
FA-REVOC-43	{ "Token Value": "", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	28	Node removed
FA-REVOC-44	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM= QWxnPUhTMjU2XG4gVHlwPVBE U1xuRGV2PTI3OGU3ZTI3NzMyY zRINTM5NDZjZjIwMDU4YWQ4M TM4XG4gaWF0PTE4LTAzLTlwMj AgMTA6MjI6MjBcbiBleHA9MjUtM DMtMjAyMCAxMDoyMjoyMGIzY WMwYjRkNjQyOTE1OGRhMTI4N zYxZTk4Y2U4MzE3ZmE5MjhkND JjNzEwYTlkMDZmNjRjOTY2N2Jk ZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	28	Node duplicated

FA-REVOC-45	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	29, 36, 43	Node removed
FA-REVOC-46	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM="", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	29, 36, 43	Node duplicated
FA-REVOC-47	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "": "Temporal", "Reason": "This node is not needed anymore" }	31	Node removed

FA-REVOC-48	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocationType of revocation ":"Temporal", "Reason":"This node is not needed anymore" }</pre>	31	Node duplicated
FA-REVOC-49	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "", "Reason":"This node is not needed anymore" }</pre>	35	Node removed
FA-REVOC-50	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "TemporalTemporal", "Reason":"This node is not needed anymore" }</pre>	35	Node duplicated

	}		
FA-REVOC-51	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "": "This node is not needed anymore" }</pre>	38	Node removed
FA-REVOC-52	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "ReasonReason": "This node is not needed anymore" }</pre>	38	Node duplicated
FA-REVOC-53	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "" }</pre>	42	Node removed

FA-REVOC-54	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore This node is not needed anymore" }</pre>	42	Node duplicated
FA-REVOC-55	<pre>{ /Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	44, 50, 56	Node modified
FA-REVOC-56	<pre>{ "Token NotValue": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }</pre>	45	Node modified

FA-REVOC-57	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZl YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhhN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	46, 52, 58	Node modified
FA-REVOC-58	{ "Token Value": /QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZl YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhhN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	47, 53, 59	Node modified
FA-REVOC-59	{ "Token Value": "uNtoKenValue", "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" }	48	Node modified
FA-REVOC-60	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZl YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhhN DJjNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=/ }	49, 55, 61	Node modified

	<pre> "Type of revocation": "Temporal", "Reason": "This node is not needed anymore" } </pre>		
FA-REVOC-61	<pre> { "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", "Revoc": "Temporal", "Reason": "This node is not needed anymore" } </pre>	51	Node modified
FA-REVOC-62	<pre> { "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Advanced", "Reason": "This node is not needed anymore" } </pre>	54	Node modified
FA-REVOC-63	<pre> { "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTlw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGIz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJnZEWYTIkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Give me a json": "This node is not </pre>	57	Node modified

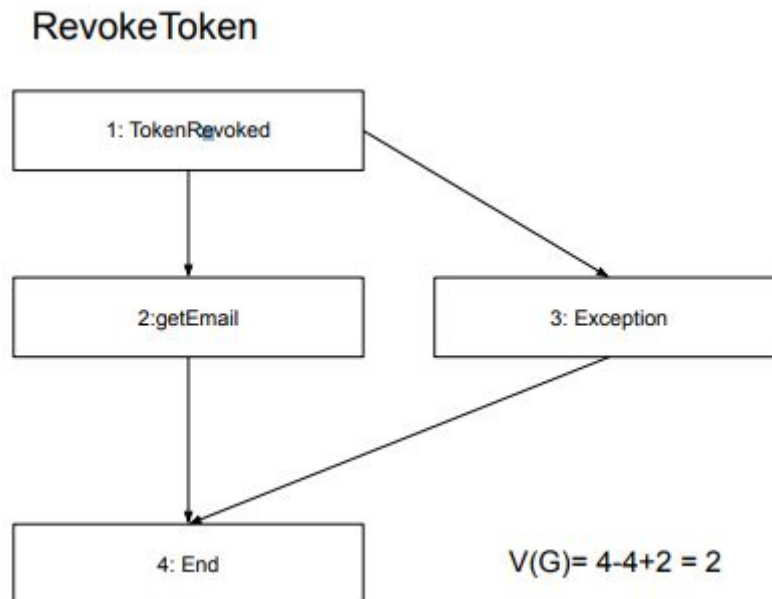
	needed anymore" }		
FA-REVOC-64	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This is a string of more than 100 characters used to test our final assignment, and it has 101 charac" }	60	Node modified
FA-REVOC-65	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjIwMDU4YWQ4 MTM4XG4gaWF0PTE4LTAzLTIw MjAgMTA6MjI6MjBcbiBleHA9MjUt MDMtMjAyMCAxMDoyMjoyMGZz YWMwYjRkNjQyOTE1OGRhMTI4 NzYxZTk4Y2U4MzE3ZmE5MjhkN DJJNzEwYTlkMDZmNjRjOTY2N2J kZDM3MWM=", "Type of revocation": "Temporal", "Reason": "This node is not needed" }	All	Nodes are correct

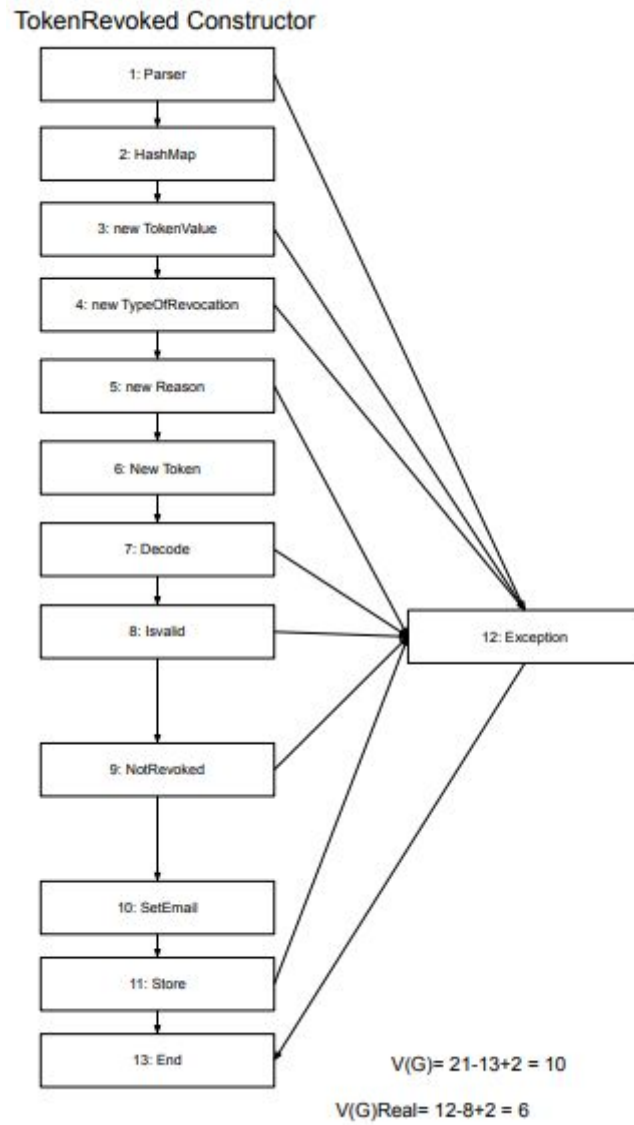
1.3. Structural Testing

In this section the technique of structural testing will be implemented for the *revokeToken* method.

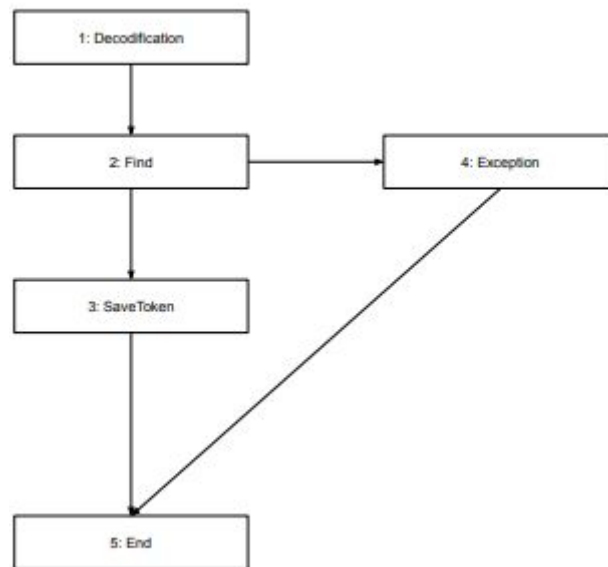
1.3.1. Flow Diagrams

For this part, we show the paths to be tested in our Structural testing:



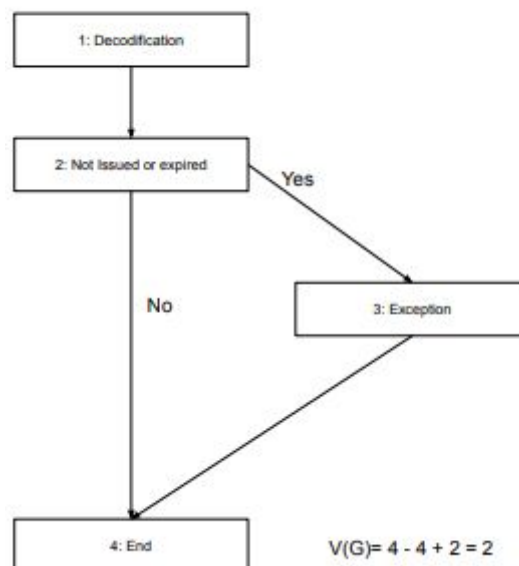


Decode

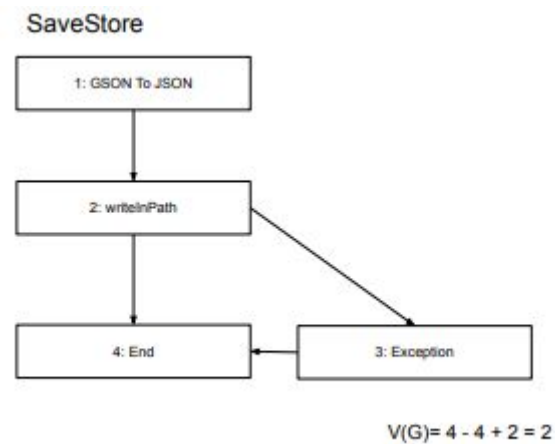
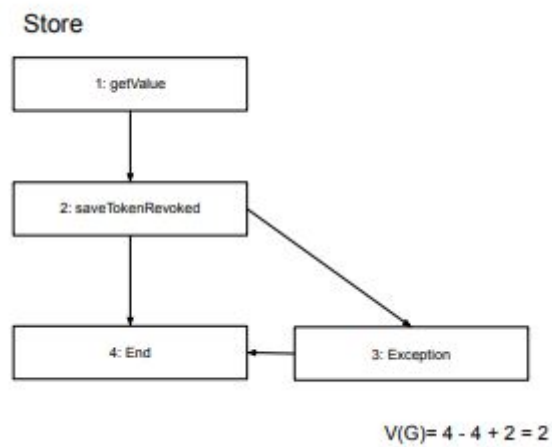
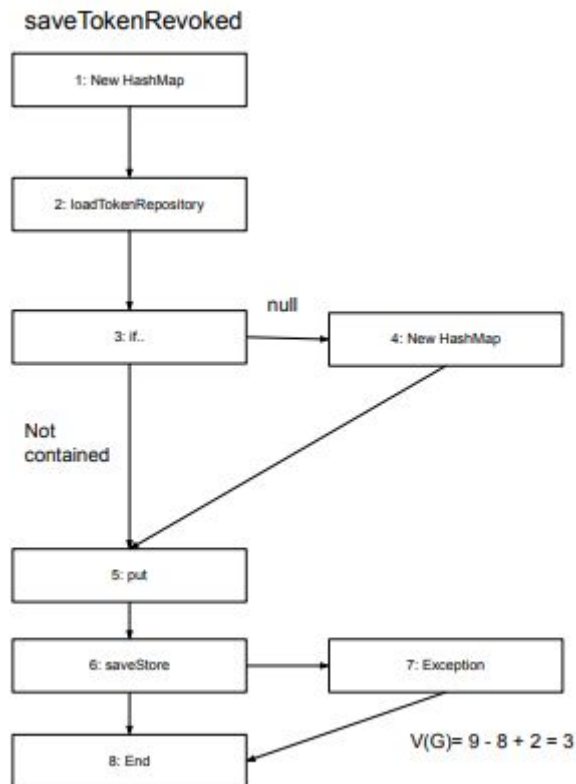


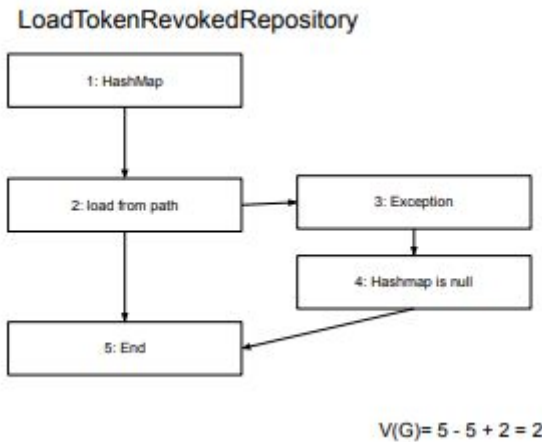
$$V(G) = 5 - 5 + 2 = 2$$

isValid



$$V(G) = 4 - 4 + 2 = 2$$





1.3.2. Tests

In the following part we show the tests that have been carried out for the structural testing of *revokeToken*. It is worth mentioning that some paths related to the parser have been excluded from the tests as they are being tested with the syntax analysis. Also, the fifth test corresponding to the exception saving the *TokenRevocationStore* has not been added to the final submission as the testing required to change the permissions to the file so it could not be accessed and this would compromise the integrity of all the other tests. This could have been solved by implementing a method that changed the StorePath.

TEST CASE ID	PATHS	DESCRIPTION
FA-REV-STRUCTURAL-0 1	RevokeToken: 1-3-4 Construc.TRevoked: 1-2-3-4-5-6-7-12 -13 Decode:1-2-4-5 isValid: checkNotRevoked: Store: saveTokenRevoked: saveStore:	Can't decode
FA-REV-STRUCTURAL-0 2	RevokeToken: 1-3-4 Construc.TRevoked: 1-2-3-4-5-6-7-8 -12-13 Decode:1-2-3-5 isValid:1-2-3-4 checkNotRevoked: Store: saveTokenRevoked: saveStore:	Token is not valid because it is expired or not issued

FA-REV-STRUCTURAL-0 3	RevokeToken: 1-3-4 Construc.TRevoked: 1-2-3-4-5-9-10 Decode:1-2-4-5 isValid:1-2-4 checkNotRevoked:1-2-3-4 Store: saveTokenRevoked: saveStore:	Token already revoked
FA-REV-STRUCTURAL-0 4	RevokeToken: 1-3-4 Construc.TRevoked: 1-2-3-4-5-9-10 Decode:1-2-4-5 isValid:1-2-4 checkNotRevoked:1-2-4 Store:1-2-3-4 saveTokenRevoked: 1-2-3-4-5-6-7-8 loadTokenRevokedRepo:1-2-3-4-5 saveStore:1-2-3-4	Can't load Revoked Tokens from Repository and can't save the store
FA-REV-STRUCTURAL-0 5	RevokeToken: 1-3-4 Construc.TRevoked: 1-2-3-4-5-9-10 Decode:1-2-4-5 isValid:1-2-4 checkNotRevoked:1-2-4 Store:1-2-3-4 saveTokenRevoked: 1-2-3-5-6-7-8 loadTokenRevokedRepo:1-2-5 saveStore:1-2-3-4	Revoked Token not contained and can't save the store

2. Token Execution

In this section, the tests performed on the *executeAction* functionality are described and commented depending on the testing technique applied.

2.1. Equivalence classes and Boundary value analysis

For this part, we are applying the equivalence classes and boundary values analysis for the *executeAction* functionality. The main goal is to test the validity of the values we will extract from the JSON.

2.1.1. Definition EC and BV

The representation of the equivalence classes and boundary values for *executeAction* is shown below:

ANALYSIS	ID EC-BV	DESCRIPTION
File Existence	FA-EC-V01	The file path exists
	FA-EC-NV02	The file path does not exists
Type of operation	FA-EC-V13	The type is correct
	FA-EC-NV14	The type is incorret
Token Value	FA-EC-V15	The token value meets the RE
	FA-EC-NV16	The token value does not meet the RE

2.1.2. Tests

The following tests have been defined in this part:

FA-EXEC-SEMANTI CS-01	Path:"Invalid/path"	FA-EC-NV02	File path does not exist
FA-EXEC-SEMANTI CS-02	{ "Token Value": "QWxnPUhTMjU2XG4 gVHIwPVBEU1xuRGV 2PTI3OGU3ZTI3NzMy YzRINTM5NDZjZjlwM DU4YWQ4MTM4XG4 gaWF0PTE4LTAzLTI wMjAgMTA6Mjl6MjBc biBleHA9MjUtMDMtMj AyMCAxMDoyMjoyM GlzYWMwYjRkNjQyO	FA-EC-NV12	Wrong operation type

	TE1OGRhMTI4NzYxZ Tk4Y2U4MzE3ZmE5 MjhkNDJjNzEwYTlkM DZmNjRjOTY2N2JkZ DM3MWM=", "Type of operation": "Wrong operation" }		
FA-EXEC-SEMANTI CS-03	{ "Token Value": "}?&/M=", "Type of operation": "Send Information from Sensor" }	FA-EC-NV16	Invalid token value charcters
FA-EXEC-SEMANTI CS-04	{ "Token Value": "QWxnPUhTMjU2XG4 gVHlwPVBEU1xuRGV 2PWY0ZDNmYmY0N Dc4ZjJmNTZjNmU2Yz k4M2ZkOTQwYjRjXG 4gaWF0PTE4LTAzLT wMjAgMTA6MjI6MjBc biBleHA9MTYtMDQtM jAyMiAxODo1NTto0M GYxNjg2MjQ5MDdjYT M2ZTc2N2ZiYzFjM2Ni MjM5ODNhNjdhMTlkN WRhMjVmYzJmZGUy OWJhNTImNzE2MDdi YmM=", "Type of operation": "Check State" }	FA-EC-V01 FA-EC-V13 FA-EC-V15	Valid token execution

2.2. Syntax Analysis

In this part, the objective is to analyze the syntax of the JSON input to ensure a correct parsing.

2.2.1. Grammar definition

The following grammar has been defined for *executeAction*, in which the blue words indicate non-terminal nodes and green words indicate terminal nodes:

FILE-> IINIT DATA END
INIT-> {
END-> }

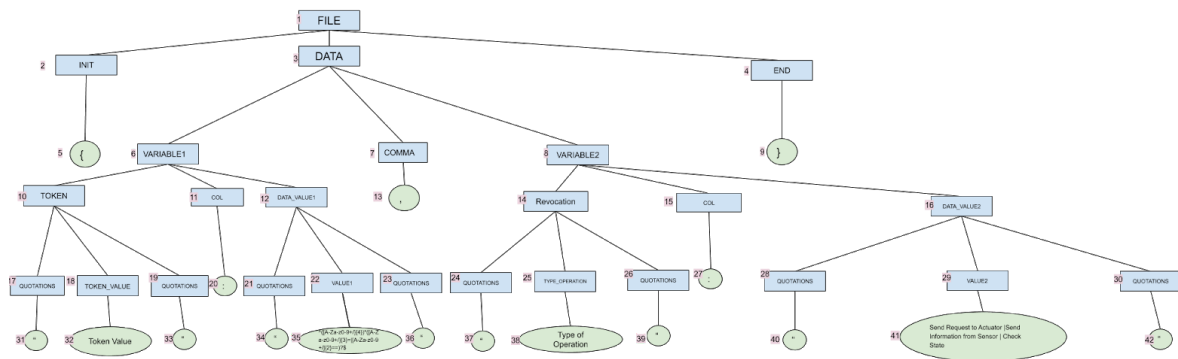
DATA-> VARIABLE1 COMMA VARIABLE2
COMMA-> ,
QUOTATIONS-> "
COL-> .

VARIABLE1-> TOKEN COL DATA_VALUE1
TOKEN-> QUOTATIONS TOKEN_VALUE QUOTATIONS
DATA_VALUE1-> QUOTATIONS VALUE1 QUOTATIONS
TOKEN_VALUE-> Token Value
VALUE1-> ^([A-Za-z0-9+/\]{4})*([A-Za-z0-9+/\]{3}=|[A-Za-z0-9+/\]{2}==)?\$

VARIABLE2-> OPERATION COL VALUE2
DATA_VALUE2-> QUOTATIONS VALUE2 QUOTATIONS
OPERATION-> QUOTATIONS TYPE_OPERATION QUOTATIONS
TYPE_OPERATION-> Type of operation
VALUE2-> Send Information from Sensor | Send Request to Actuator | Check State

2.2.2. Derivation tree

In this section, we show the derivation tree implemented, because of the image size the readability is not optimal. For this reason, **we attach the image in a folder called Documents with the name Execute Grammar.**



2.2.3. Tests

The tests that are defined for syntax analysis regarding *executeAction* are:

TEST CASE ID	INPUT PARAMETERS	COVERED NODES	DESCRIPTION
FA-EXEC-01		1	Node removed
FA-EXEC-02	<pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }</pre> <pre>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM</pre>	1	Node duplicated

	<pre> TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" } </pre>		
FA-EXEC-03	<pre> "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" } </pre>	2	Node removed
FA-EXEC-04	<pre> {{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" } </pre>	2	Node duplicated
FA-EXEC-05	<pre> { "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" } </pre>	3	Node duplicated

	"Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }		
FA-EXEC-06	{}	3	Node deleted
FA-EXEC-07	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }}	4	Node repeated
FA-EXEC-08	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	4	Node deleted

FA-EXEC-09	<p>?</p> <p>"Token Value":</p> <p>"QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=",</p> <p>"Type of operation": "Send Information from Sensor"</p> <p>}</p>	5	Node modified
FA-EXEC-10	<p>{</p> <p>"Token Value":</p> <p>"QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM="</p> <p>"Token Value":</p> <p>"QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=",</p> <p>"Type of operation": "Send Information from Sensor"</p> <p>}</p>	6	Node duplicated
FA-EXEC-11	<p>{</p> <p>,</p> <p>"Type of operation": "Send Information from Sensor"</p> <p>}</p>	6	Node removed

FA-EXEC-12	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	7	Node duplicated
FA-EXEC-13	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	7	Node removed
FA-EXEC-14	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor""Type of operation": "Send Information from Sensor" }	8	Node duplicated

FA-EXEC-15	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtdMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", }	8	Node removed
FA-EXEC-16	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtdMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	9	Node modified
FA-EXEC-17	{ "Token Value""Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtdMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	10	Node duplicated
FA-EXEC-18	{ : "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI	10	Node removed

	wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }		
FA-EXEC-19	{ "Token Value": " "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	11, 15	Node duplicated
FA-EXEC-20	{ "Token Value" "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	11, 15	Node removed
FA-EXEC-21	{ "Token Value": , "Type of operation": "Send Information from Sensor" }	12	Node removed
FA-EXEC-22	{ "Token Value": " "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ	12	Node duplicated

	4MTM4XG4gaWF0PTE4LTazLTl wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=""QWxnPUhT MjU2XG4gVHlwPVB EU1xuRGV2 PTI3OGU3ZTI3NzMyYzRINTM5 NDZjZjIwMDU4YWQ4MTM4XG4 gaWF0PTE4LTazLTl wMjAgMTA 6Mjl6MjBcbiBleHA9MjUtMDMtMj AyMCAxMDoyMjoyMG IzYWMwYj RkNjQyOTE1OGRhMTI4NzYxZT k4Y2U4MzE3ZmE5Mj hkNDJjNzE wYTlkMDZmNjRjOTY2N2JkZDM 3MWM=", "Type of operation": "Send Information from Sensor" }		
FA-EXEC-23	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTl wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=""_ "Type of operation": "Send Information from Sensor" }	13	Node modified
FA-EXEC-24	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTl wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation""Type of operation": "Send Information from Sensor"	14	Node duplicated

	}		
FA-EXEC-25	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", :"Send Information from Sensor" }	14	Node removed
FA-EXEC-26	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" "Send Information from Sensor" }	16	Node duplicated
FA-EXEC-27	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": }	16	Node removed

FA-EXEC-28	{ ""Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	17, 24	Node duplicated
FA-EXEC-29	{ Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	17,24	Node removed
FA-EXEC-30	{ "Token ValueToken Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	18	Node duplicated
FA-EXEC-31	{ "": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ	18	Node removed

	4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }		
FA-EXEC-32	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	19,26	Node duplicated
FA-EXEC-33	{ "Token Value""": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	19,26	Node removed
FA-EXEC-34	{ "Token Value"& "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj	20,27	Node modified

	hkNDJjNzEwYTikMDZmNjRjOTY2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }		
FA-EXEC-35	{ "Token Value": ""QWxnPUhTMjU2XG4gVHlwPVBEU1xuRGV2PTI3OGU3ZTI3NzMyYzRINTM5NDZjZjIwMDU4YWQ4MTM4XG4gaWF0PTE4LTazLTlwMjAgMTA6MjI6MjBcbiBleHA9MjUtMDMtMjAyMCAxMDoyMjoyMGIzYWMwYjRkNjQyOTE1OGRhMTI4NzYxZTk4Y2U4MzE3ZmE5MjhkNDJjNzEwYTikMDZmNjRjOTY2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	21,28	Node duplicated
FA-EXEC-36	{ "Token Value": QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ4MTM4XG4gaWF0PTE4LTazLTlwMjAgMTA6MjI6MjBcbiBleHA9MjUtMDMtMjAyMCAxMDoyMjoyMGIzYWMwYjRkNjQyOTE1OGRhMTI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTikMDZmNjRjOTY2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	21,28	Node removed
FA-EXEC-37	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ4MTM4XG4gaWF0PTE4LTazLTlwMjAgMTA6MjI6MjBcbiBleHA9MjUtMDMtMjAyMCAxMDoyMjoyMGIzYWMwYjRkNjQyOTE1OGRhMTI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTikMDZmNjRjOTY2N2JkZDM3MWM=""", "Type of operation": "Send Information from Sensor" }	23, 30	Node duplicated

FA-EXEC-38	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	23, 30	Node removed
FA-EXEC-39	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTI wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=QWxnPUhTM jU2XG4gVHlwPVB EU1xuRGV2P TI3OGU3ZTI3NzM yYzRINTM5N DZjZjIwMDU4YWQ4MTM4XG4g aWF0PTE4LTazLTIwMjAgMTA6 MjI6MjBcbiBleHA9MjUtMDMtMjA yMCAxMDoyMjoyMGIzYWMwYj RkNjQyOTE1OGRhMTI4NzYxZT k4Y2U4MzE3ZmE5Mj hkNDJjNzE wYTlkMDZmNjRjOTY2N2JkZDM 3MWM=", "Type of operation": "Send Information from Sensor" }	22	Node duplicated
FA-EXEC-40	{ "Token Value": "", "Type of operation": "Send Information from Sensor" }	22	Node removed
FA-EXEC-41	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ	25	Node duplicated

	<p>4MTM4XG4gaWF0PTE4LTazLTl wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=QWxnPUhTM jU2XG4gVHlwPVBEU1xuRGV2P TI3OGU3ZTI3NzMyYzRINTM5N DZjZjIwMDU4YWQ4MTM4XG4g aWF0PTE4LTazLTlWmJAgMTA6 Mjl6MjBcbiBleHA9MjUtMDMtMjA yMCAxMDoyMjoyMGIzYWMwYj RkNjQyOTE1OGRhMTI4NzYxZT k4Y2U4MzE3ZmE5MjhkNDJjNzE wYTlkMDZmNjRjOTY2N2JkZDM 3MWM=", "Type of operationType of operation": "Send Information from Sensor" }</p>		
FA-EXEC-42	<p>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTl wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "" : "Send Information from Sensor" }</p>	25	Node removed
FA-EXEC-43	<p>{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTl wMjAgMTA6Mjl6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from SensorSend Information from Sensor"</p>	29	Node duplicated

	}		
FA-EXEC-44	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLT wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "" }	29	Node removed
FA-EXEC-45	{ =Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLT wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	31, 38	Node modified
FA-EXEC-46	{ "Token Value*": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTAzLT wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE0GRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	33, 39	Node modified

FA-EXEC-47	{ "Token Value": >QWxnPUhTMjU2XG4gVHlwPV BEU1xuRGV2PTI3OGU3ZTI3Nz MyYzRINTM5NDZjZjIwMDU4YW Q4MTM4XG4gaWF0PTE4LTazL TlwMjAgMTA6MjI6MjBcbiBleHA9 MjUtMDMtMjAyMCAxMDoyMjoy MGlzYWMwYjRkNjQyOTE1OGR hMTI4NzYxZTk4Y2U4MzE3ZmE 5MjhkNDJjNzEwYTlkMDZmNjRj OTY2N2JkZDM3MWM=", "Type of operation": "Send Information from Sensor" }	34, 40	Node modified
FA-EXEC-48	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTl wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=>, "Type of operation": "Send Information from Sensor" }	39, 42	Node modified
FA-EXEC-49	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PTI3OGU3ZTI3NzM yYzRINTM5NDZjZjIwMDU4YWQ 4MTM4XG4gaWF0PTE4LTazLTl wMjAgMTA6MjI6MjBcbiBleHA9Mj UtMDMtMjAyMCAxMDoyMjoyMG IzYWMwYjRkNjQyOTE1OGRhM TI4NzYxZTk4Y2U4MzE3ZmE5Mj hkNDJjNzEwYTlkMDZmNjRjOTY 2N2JkZDM3MWM=", "Type of operation": "Send Request" }	41	Node modified
FA-EXEC-50	{ "Token Value": "QWxnPUhTMjU2XG4gVHlwPVB EU1xuRGV2PWY0ZDNmYmY0N Dc4ZjJmNTZjNmU2Yzk4M2ZkOT	All nodes	Correct JSON

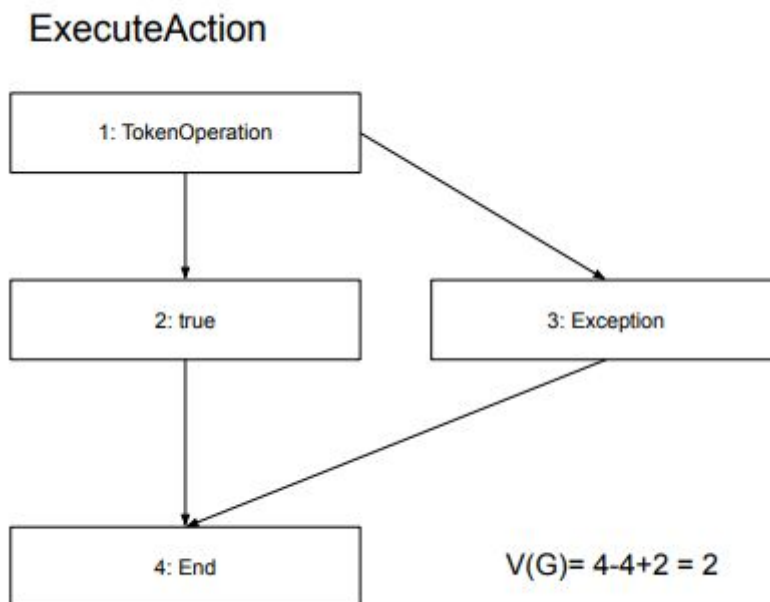
	QwYJRjXG4gaWF0PTE4LTazLTI wMjAgMTA6Mjl6MjBcbiBleHA9M TYtMDQtMjAyMiAxODo1NTto0M GYxNjg2MjQ5MDdjYTM2ZTc2N2 ZiYzFjM2NiMjM5ODNhNjdkMTlk NWRhMjVmYzJmZGUyOWJhNTI mNzE2MDdiYmM=", "Type of operation": "Check State" }		
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2.3. Structural Testing

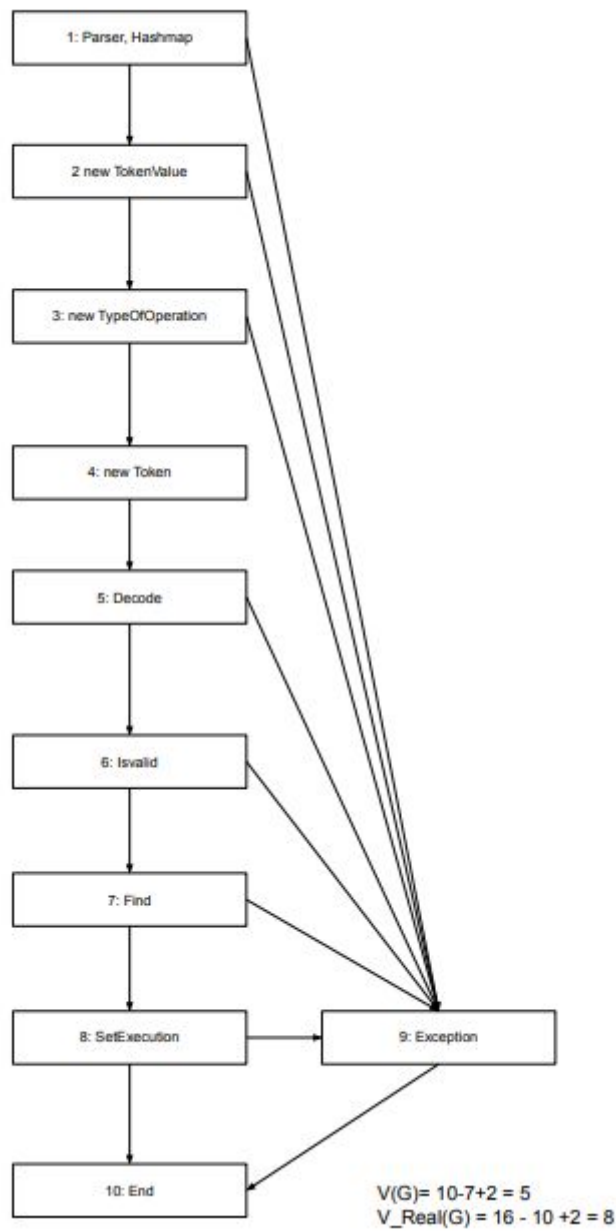
In this section, the tests try to analyze the logic of our program and the different results that it might encounter.

2.3.1. Flow Diagrams

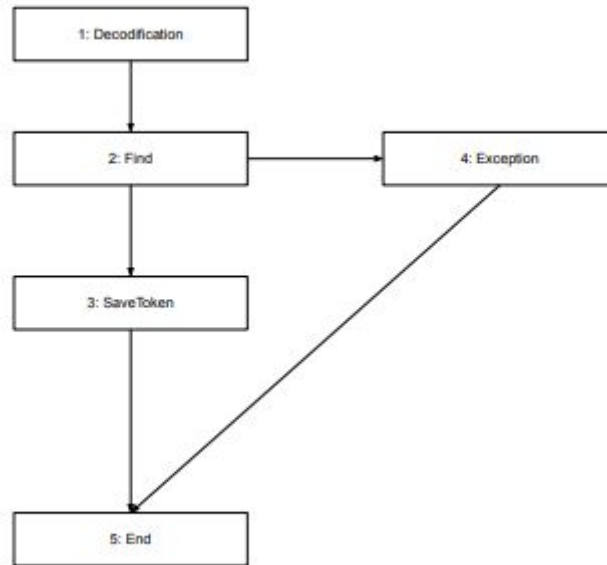
Here, there are represented the flow diagrams of some of the methods involved. Some of them, which are devoted to parsing, are not included in this type of tests because there were already tested in the syntax analysis.



TokenOperation Constructor

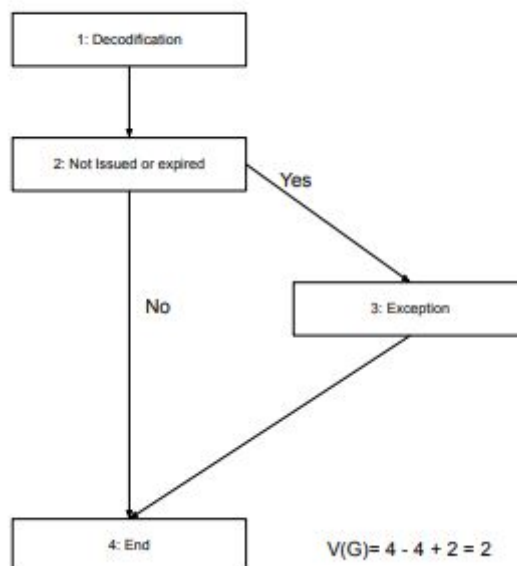


Decode



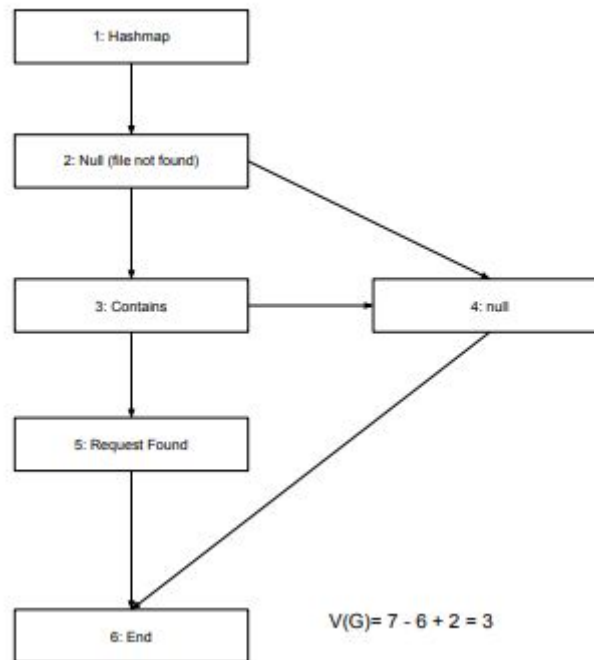
$$V(G) = 5 - 5 + 2 = 2$$

isValid

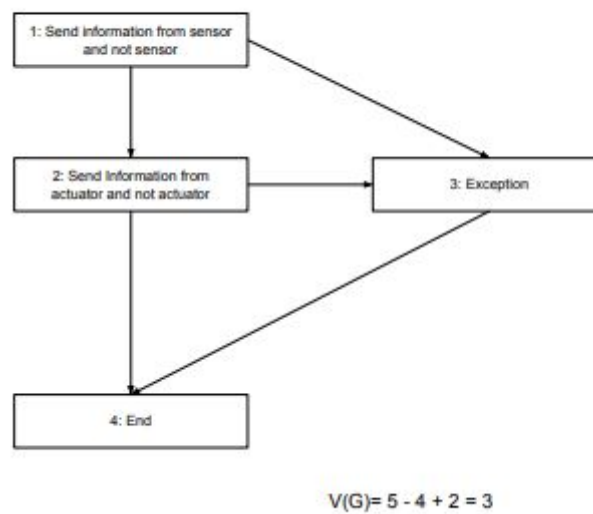


$$V(G) = 4 - 4 + 2 = 2$$

Request Find



Set Execution



The diagram of Find from the tokenStore class is included but as it was already tested before, no test about would be included.



2.3.2. Tests

The tests implemented are the following. The test in which all paths are correct is not included because the other techniques already cover a correct execution.

TEST CASE ID	PATHS	DESCRIPTION
FA-EXEC-STRUCTURAL-01	ExecuteAction: 1-3-4 TokenOperation: 1-2-3-4-5-9-10 Decode:1-2-4-5 isValid: Request Find: SetExecution:	Token not contained in store

FA-EXEC-STRUCTURAL-02	ExecuteAction: 1-3-4 TokenOperation: 1-2-3-4-5-6-9-10 Decode:1-2-3-5 isValid:1-2-3 Request Find: SetExecution:	Token is not valid because it is expired
FA-EXEC-STRUCTURAL-03	ExecuteAction: 1-3-4 TokenOperation:1-2-3-4-5-6-7-9- 10 Decode:1-2-3-5 isValid:1-2-4 Request Find:1-2-4-5 SetExecution:	TokenRequestStore file cannot be loaded
FA-EXEC-STRUCTURAL-04	ExecuteAction: 1-3-4 TokenOperation:1-2-3-4-5-6-7-9- 10 Decode:1-2-3-5 isValid:1-2-4 Request Find:1-2-3-4-6 SetExecution:	TokenRequest not Found
FA-EXEC-STRUCTURAL-05	ExecuteAction: 1-3-4 TokenOperation:1-2-3-4-6-7-8-9- 10 Decode:1-2-3-5 isValid:1-2-4 Request Find:1-2-3-5-6 SetExecution:1-3-4	Send information from sensor and Token is not a sensor
FA-EXEC-STRUCTURAL-06	ExecuteAction: 1-3-4 TokenOperation:1-2-3-4-6-7-8-9- 10 Decode:1-2-3-5 isValid:1-2-4 Request Find:1-2-3-5-6 SetExecution:1-2-3-4	Send information from actuator and Token is not an actuator

3. Final comments

In this Final Assignment, we have applied the techniques for refactoring learnt during the course. Also, we have used boundary values, equivalence classes, syntax analysis and structural testing to check that our code was working correctly and follow the Test Driven Development. However, some of the techniques we had implemented resulted in errors that we were not able to correct. One of the refactoring improvements we removed from the final submission was a strategy to implement *TokenRequestStore* and *TokenRevokedStore*, in future versions of this code this could be implemented as they both share the same structure.

For this reason, we also include in the **Documents** folder another folder called **Failed Implementation** which contains the code that was not submitted due to this errors.

