

# Rules of Black-Box Test Design for Whack.gg

- General approach
  - Every function which takes an object as a parameter, should be tested **per object attribute**. In these cases, a set of **Default Valid Test Data** will be defined for the objects. Default Valid Test Data is the data that will be used for the object attributes that aren't being tested in a specific case.
- Test values...
  - Must always include undefined, null, 0, and false.
- String-based test values...
  - Must include input with at least some special characters: !?#@., etc.
  - Must include input with at least some unicode characters whenever possible: 🍌🐱💩.
- Number-based test values...
  - Must include a number roughly in the middle of every span defined in *Equivalence Partitions*.
  - Must include all boundary values found in relating 3 *Value Boundary Value Analysis*.
  - Must include a negative\* number and a positive number even if not stated by *Equivalence Partitions* or 3 *Value Boundary Value Analysis*.
  - Must include a decimal number.
  - Must include a number higher than 2147483647\* (postgres int max value) and lower than -2147483647\* (postgres int min value), unless a bigint is allocated in the DB. In the case of a bigint, use 214748348 and -214748348 instead.
  - If no max or min value has been declared, upper valid boundaries are 2147483647, 2147483646 and lower valid boundaries are -2147483647, -2147483646

\*Unless the test value describes the length of a string, object, etc.

## Glossary

Terms	Explanations
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Positive Test Values	<p>Values to pass to the test as parameters for successful scenarios.</p> <p>Ex: 5 is a successful parameter for a test accepting a number between 1 and 10 and is therefore also a Positive Test Value.</p>
Negative Test Values	<p>Values to pass to the test as parameters for unsuccessful scenarios.</p> <p>Ex: 15 is an unsuccessful parameter for a test accepting a number between 1 and 10 and is therefore also a NegativeTest Value.</p>

## summoner.service.ts

### create() & update()

create() and update() take a summoner object as a parameter.

#### Default Valid Test Data

```

summonerName: "John Doe"
password: "Password!234
icon: 1000
level: 300
isAdmin: false

```

summonerName

Equivalence Partitions	
Description	
The create and update functions (upsert behaviour) for summoner accept a summoner object with a summonerName in alphanumeric characters. Spaces between characters are allowed. The length must be between 3 and 16 characters.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 3 - 16	String length: < 3
	String length: > 16

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	String length 3, 4	String length 2
Upper Boundaries	String length 16, 15	String length ø17

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
String length: 10	Summoner created/updated	String length: 2	undefined, summoner not created/updated
String length: 3	Summoner created/updated	String length: 17	undefined, summoner not created/updated
String length: 4	Summoner created/updated	String length: 0	undefined, summoner not created/updated
String length: 16	Summoner created/updated	null	undefined, summoner not created/updated
String length: 15	Summoner created/updated	false	undefined, summoner not created/updated
		0	undefined, summoner not created/updated
		"!?=:_,"	undefined, summoner not created/updated

		“💩😐😄”	undefined, summoner not created/updated
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password

Equivalence Partitions	
Description	
The create and update functions for summoner accept a summoner object with a password and allows alphanumeric characters, special characters, but not emojis. The length must be between 6 and 45 characters.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 6 - 45	String length: < 6
	String length: > 45

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	6, 7	5
Upper Boundaries	45, 44	46

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
String length: 25	Summoner created/updated	String length: 5	undefined, summoner not created/updated
String length: 6	Summoner created/updated	String length: 46	undefined, summoner not created/updated
String length: 7	Summoner created/updated	String length: 0	undefined, summoner not created/updated
String length: 45	Summoner created/updated	undefined	undefined, summoner not created/updated
String length: 44	Summoner created/updated	null	undefined, summoner not created/updated

		false	undefined, summoner not created/updated
		0	undefined, summoner not created/updated
		“💩😐😄”	undefined, summoner not created/updated

icon

Equivalence Partitions	
Description	
The create and update functions for summoner accept a summoner object with an icon which is a whole number, between 1 and 2438.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 2438	< 0
	> 2438

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	2438, 2437	2439

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
1219	Summoner created/updated	0	undefined, summoner not created/updated
1	Summoner created/updated	2439	undefined, summoner not created/updated
2	Summoner created/updated	-5	undefined, summoner not created/updated
2438	Summoner created/updated	1219,65	undefined, summoner not created/updated
2437	Summoner	undefined	undefined, summoner not

	created/updated		created/updated
		null	undefined, summoner not created/updated
		false	undefined, summoner not created/updated
		214748348	undefined, summoner not created/updated
		-214748348	undefined, summoner not created/updated

level

Equivalence Partitions	
Description	
The create and update functions for summoner accept a summoner object with a level, which is a whole number above 0 and less than the max value for int datatype (2147483647).	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 2147483647	< 1
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
3000	Summoner created/updated	0	undefined, summoner not created/updated
1	Summoner created/updated	2147483648	undefined, summoner not created/updated
2	Summoner created/updated	-5	undefined, summoner not created/updated

2147483647	Summoner created/updated	undefined	undefined, summoner not created/updated
2147483646	Summoner created/updated	null	undefined, summoner not created/updated
		false	undefined, summoner not created/updated
		-214748348	undefined, summoner not created/updated

## isAdmin

Description
The create and update functions for summoner accept a summoner object with an isAdmin attribute, which is a boolean.

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
true	Summoner created/updated	0	undefined, summoner not created/updated
false	Summoner created/updated	2147483648	undefined, summoner not created/updated
		-5	undefined, summoner not created/updated
		undefined	undefined, summoner not created/updated
		null	undefined, summoner not created/updated
		-214748348	undefined, summoner not created/updated

## id

Equivalence Partitions
Description
The update() function requires an id whole number greater than 0, but less than the max value for int datatype (2147483647).

Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Summoner updated	0	undefined, summoner not updated
1	Summoner updated	214748348	undefined, summoner not updated
2	Summoner updated	5,65	undefined, summoner not updated
214748347	Summoner updated	-5	undefined, summoner not updated
214748346	Summoner updated	-214748348	undefined, summoner not updated
		undefined	undefined, summoner not updated
		null	undefined, summoner not updated
		false	undefined, summoner not updated

getSummonerFullRank()

Equivalence Partitions
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Description	
The getSummonerFullRank() function requires a summonerName string from 3 to 16 characters as a parameter. Special characters not allowed.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 3 - 16	String length: < 3
	String length: > 16

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	3, 4	2
Upper Boundaries	16, 15	17

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
String length: 10	Summoner found	String length: 2	undefined
String length: 3	Summoner found	String length: 17	undefined
String length: 4	Summoner found	String length: 0	undefined
String length: 16	Summoner found	null	undefined
String length: 15	Summoner found	false	undefined
		0	undefined
		“!?=:_,”	undefined
		“💩😬😄”	undefined

findOne()

Equivalence Partitions	
Description	
The findOne() function requires an id whole number greater than 0, but less than the max value for int datatype (2147483647).	
Valid Equivalence Partitions	Invalid Equivalence Partitions

1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Summoner found	0	undefined, summoner not found
1	Summoner found	214748348	undefined, summoner not found
2	Summoner found	5,65	undefined, summoner not found
214748347	Summoner found	-5	undefined, summoner not found
214748346	Summoner found	-214748348	undefined, summoner not found
		undefined	undefined, summoner not found
		null	undefined, summoner not found
		false	undefined, summoner not found

findOneWithPasswordHash()

Equivalence Partitions
Description
The findOneWithPasswordHash() function requires an alphanumeric summonerName string as a parameter. No special characters are allowed.

Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 3 - 16	String length: < 3
	String length: > 16

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	3, 4	2
Upper Boundaries	16, 15	17

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
String length: 10	Summoner found	String length: 2	undefined
String length: 3	Summoner found	String length: 17	undefined
String length: 4	Summoner found	String length: 0	undefined
String length: 16	Summoner found	null	undefined
String length: 15	Summoner found	false	undefined
		0	undefined
		"!?=:_,"	undefined
		"💩😬😄"	undefined, summoner not created/updated

remove()

Equivalence Partitions	
Description	
The remove() function requires an id whole number greater than 0, but less than the max value for int datatype (2147483647).	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Summoner deleted	0	undefined, summoner not found
1	Summoner deleted	214748348	undefined, summoner not found
2	Summoner deleted	5,65	undefined, summoner not found
214748347	Summoner deleted	-5	undefined, summoner not found
214748346	Summoner deleted	-214748348	undefined, summoner not found
		undefined	undefined, summoner not found
		null	undefined, summoner not found
		false	undefined, summoner not found

rank.service.ts

create() & update()

create() and update() take a rank object as a parameter.

Default Valid Test Data
lp: 50

lp

Equivalence Partitions	
Description	
The create and update functions for rank accepts a rank object with an lp attribute, which is a whole number between 0 and 100. Unless the tier equals Master, Grandmaster or Challenger, in which case there is no upper cap.	
Tier != Master    Grandmaster    Challenger	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 100	< 1
	> 100
Tier == Master    Grandmaster    Challenger	
Valid Equivalence Partitions	Invalid Equivalence Partitions
>= 1	< 1

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	100, 99	101

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
50	Rank created/updated	0	undefined, rank not created/updated
1	Rank created/updated	101	undefined, rank not created/updated
2	Rank created/updated	-5	undefined, rank not created/updated
99	Rank created/updated	50,65	undefined, rank not created/updated
100	Rank	undefined	undefined, rank not

	created/updated		created/updated
		null	undefined, rank not created/updated
		false	undefined, rank not created/updated
		214748348	undefined, rank not created/updated
		-214748348	undefined, rank not created/updated

id

Equivalence Partitions	
Description	
The update() function requires an id whole number greater than 0, but less than 214748348 (postgres max value) as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Rank updated	0	undefined, rank not updated
1	Rank updated	214748348	undefined, rank not updated
2	Rank updated	5,65	undefined, rank not updated

214748347	Rank updated	-5	undefined, rank not updated
214748346	Rank updated	-214748348	undefined, rank not updated
		undefined	undefined, rank not updated
		null	undefined, rank not updated
		false	undefined, rank not updated

findOne()

Equivalence Partitions	
Description	
The findOne() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Rank found	0	undefined, rank not found
1	Rank found	214748348	undefined, rank not found
2	Rank found	5,65	undefined, rank not found
214748347	Rank found	-5	undefined, rank not found

214748346	Rank found	-214748348	undefined, rank not found
		undefined	undefined, rank not found
		null	undefined, rank not found
		false	undefined, rank not found

remove()

Equivalence Partitions	
Description	
The remove() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Rank deleted	0	undefined, rank not deleted
1	Rank deleted	214748348	undefined, rank not deleted
2	Rank deleted	5,65	undefined, rank not deleted
214748347	Rank deleted	-5	undefined, rank not deleted
214748346	Rank deleted	-214748348	undefined, rank not deleted



		undefined	undefined, rank not deleted
		null	undefined, rank not deleted
		false	undefined, rank not deleted

## mastery.service.ts

### create() & update()

create() and update() take a mastery object as a parameter.

#### Default Valid Test Data

```
level: 50
championPoints: 200
lastPlayed: 1671187538
```

### level

#### Equivalence Partitions

##### Description

The create and update functions for mastery accept a mastery object with a level attribute, which is a whole number higher than 0, but not higher than 7.

##### Valid Equivalence Partitions

1 - 7

##### Invalid Equivalence Partitions

< 1

> 7

#### 3 Value Boundary Value Analysis

	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	7, 6	8

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
4	Mastery created/updated	0	undefined, mastery not created/updated
1	Mastery created/updated	8	undefined, mastery not created/updated
2	Mastery created/updated	-5	undefined, mastery not created/updated
7	Mastery created/updated	4,65	undefined, mastery not created/updated
6	Mastery created/updated	undefined	undefined, mastery not created/updated
		null	undefined, mastery not created/updated
		false	undefined, mastery not created/updated
		214748348	undefined, mastery not created/updated
		-214748348	undefined, mastery not created/updated

championPoints

Equivalence Partitions	
Description	
The create and update functions for mastery accept a mastery object with a championPoints attribute, which is a whole number higher than or equal to 0, but not higher than 214748347 (postgres max value).	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 214748347	< 0
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries

Lower Boundaries	0, 1	-1
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
200	Mastery created/updated	-1	undefined, mastery not created/updated
0	Mastery created/updated	214748348	undefined, mastery not created/updated
1	Mastery created/updated	4,65	undefined, mastery not created/updated
214748347	Mastery created/updated	undefined	undefined, mastery not created/updated
214748346	Mastery created/updated	null	undefined, mastery not created/updated
		false	undefined, mastery not created/updated
		-214748348	undefined, mastery not created/updated

lastPlayed (WIP)

Equivalence Partitions	
Description	
The create and update functions for mastery accepts a mastery object with a lastPlayed date attribute, which is a bigint number higher than 0, but not higher than the bigint representing the current time at run time.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - now	< 1
	> now

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	Now, now - 1	Now + 1

Test Values			
Positive Test Values		Negative Test Values	
1405415577	Mastery created/updated	0	undefined, mastery not created/updated
1	Mastery created/updated	Now + 1	undefined, mastery not created/updated
2	Mastery created/updated	-5	undefined, mastery not created/updated
Now	Mastery created/updated	4,65	undefined, mastery not created/updated
Now - 1	Mastery created/updated	undefined	undefined, mastery not created/updated
		null	undefined, mastery not created/updated
		false	undefined, mastery not created/updated
		9223372036854775807	undefined, mastery not created/updated
		-9223372036854775807	undefined, mastery not created/updated

id

Equivalence Partitions	
Description	
The update() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions

1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Mastery updated	0	undefined, mastery not updated
1	Mastery updated	214748348	undefined, mastery not updated
2	Mastery updated	5,65	undefined, mastery not updated
214748347	Mastery updated	-5	undefined, mastery not updated
214748346	Mastery updated	-214748348	undefined, mastery not updated
		undefined	undefined, mastery not updated
		null	undefined, mastery not updated
		false	undefined, mastery not updated

findOne()

Equivalence Partitions
Description
The findOne() function requires an id whole number greater than 0, but less than infinity as a parameter.

Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Mastery found	0	undefined, mastery not found
1	Mastery found	214748348	undefined, mastery not found
2	Mastery found	5,65	undefined, mastery not found
214748347	Mastery found	-5	undefined, mastery not found
214748346	Mastery found	-214748348	undefined, mastery not found
		undefined	undefined, mastery not found
		null	undefined, mastery not found
		false	undefined, summoner not found

remove()

Equivalence Partitions
Description
The remove() function requires an id whole number greater than 0, but less than infinity as

a parameter.

Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

### 3 Value Boundary Value Analysis

	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

### Test Values

Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Mastery deleted	0	undefined, mastery not deleted
1	Mastery deleted	214748348	undefined, mastery not deleted
2	Mastery deleted	5,65	undefined, mastery not deleted
214748347	Mastery deleted	-5	undefined, mastery not deleted
214748346	Mastery deleted	-214748348	undefined, mastery not deleted
		undefined	undefined, mastery not deleted
		null	undefined, mastery not deleted
		false	undefined, mastery not deleted

champion.service.ts

create() & update()

championName

Equivalence Partitions	
Description	
The create and update functions for champion accept a champion object with a championName, which is a string with at least 1 character and no more than 45.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 1 - 45	String length: < 1
	String length: > 45

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	45, 44	46

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
String length: 25	Champion created/updated	String length: 0	undefined, champion not created/updated
String length: 1	Champion created/updated	String length: 46	undefined, champion not created/updated
String length: 2	Champion created/updated	undefined	undefined, champion not created/updated
String length: 45	Champion created/updated	null	undefined, champion not



			created/updated
String length: 44	Champion created/updated	false	undefined, champion not created/updated

id

Equivalence Partitions	
Description	
The update() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Champion updated	0	undefined, champion not updated
1	Champion updated	214748348	undefined, champion not updated
2	Champion updated	5,65	undefined, champion not updated
214748347	Champion updated	-5	undefined, champion not updated
214748346	Champion updated	-214748348	undefined, champion not updated
		undefined	undefined, champion not updated

		null	undefined, champion not updated
		false	undefined, champion not updated

findOne()

Equivalence Partitions	
Description	
The findOne() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Champion found	0	undefined, champion not found
1	Champion found	214748348	undefined, champion not found
2	Champion found	5,65	undefined, champion not found
214748347	Champion found	-5	undefined, champion not found
214748346	Champion found	-214748348	undefined, champion not found
		undefined	undefined, champion not

			found
		null	undefined, champion not found
		false	undefined, champion not found

remove()

Equivalence Partitions	
Description	
The remove() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Champion deleted	0	undefined, champion not deleted
1	Champion deleted	214748348	undefined, champion not deleted
2	Champion deleted	5,65	undefined, champion not deleted
214748347	Champion deleted	-5	undefined, champion not deleted
214748346	Champion deleted	-214748348	undefined, champion not deleted

		undefined	undefined, champion not deleted
		null	undefined, champion not deleted
		false	undefined, champion not deleted

division.service.ts

create() & update()

divisionName

Equivalence Partitions	
Description	
The create and update functions for division accept a division object with a divisionName, which is a string with at least 1 character and no more than 45.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 1 - 45	String length: < 1
	String length: > 45

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	45, 44	46

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
String length: 25	Division created/updated	String length: 0	undefined, division not created/updated

String length: 1	Division created/updated	String length: 46	undefined, division not created/updated
String length: 2	Division created/updated	undefined	undefined, division not created/updated
String length: 45	Division created/updated	null	undefined, division not created/updated
String length: 44	Division created/updated	false	undefined, division not created/updated

id

Equivalence Partitions	
Description	
The update() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Division updated	0	undefined, division not updated
1	Division updated	214748348	undefined, division not updated
2	Division updated	5,65	undefined, division not updated
214748347	Division updated	-5	undefined, division not updated

214748346	Division updated	-214748348	undefined, division not updated
		undefined	undefined, division not updated
		null	undefined, division not updated
		false	undefined, division not updated

findOne()

Equivalence Partitions	
Description	
The findOne() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Division found	0	undefined, division not found
1	Division found	214748348	undefined, division not found
2	Division found	5,65	undefined, division not found
214748347	Division found	-5	undefined, division not

			found
214748346	Division found	-214748348	undefined, division not found
		undefined	undefined, division not found
		null	undefined, division not found
		false	undefined, division not found

remove()

Equivalence Partitions	
Description	
The remove() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Division deleted	0	undefined, division not deleted
1	Division deleted	214748348	undefined, division not deleted
2	Division deleted	5,65	undefined, division not deleted

214748347	Division deleted	-5	undefined, division not deleted
214748346	Division deleted	-214748348	undefined, division not deleted
		undefined	undefined, division not deleted
		null	undefined, division not deleted
		false	undefined, division not deleted

game-mode.service.ts

create() & update()

gameModeName

Equivalence Partitions	
Description	
The create and update functions for game mode accept a game mode object with a gameModeName, which is a string with at least 1 character and no more than 45.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 1 - 45	String length: < 1
	String length: > 45

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	45, 44	46

Test Values
-------------



Positive Test Values	Expected output	Negative Test Values	Expected output
String length: 25	Game mode created/updated	String length: 0	undefined, game mode not created/updated
String length: 1	Game mode created/updated	String length: 46	undefined, game mode not created/updated
String length: 2	Game mode created/updated	undefined	undefined, game mode not created/updated
String length: 45	Game mode created/updated	null	undefined, game mode not created/updated
String length: 44	Game mode created/updated	false	undefined, game mode not created/updated

id

Equivalence Partitions	
Description	
The update() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output

200	Game mode updated	0	undefined, game mode not updated
1	Game mode updated	214748348	undefined, game mode not updated
2	Game mode updated	5,65	undefined, game mode not updated
214748347	Game mode updated	-5	undefined, game mode not updated
214748346	Game mode updated	-214748348	undefined, game mode not updated
		undefined	undefined, game mode not updated
		null	undefined, game mode not updated
		false	undefined, game mode not updated

findOne()

Equivalence Partitions	
Description	
The findOne() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test	Expected Output

		Values	
200	Game mode found	0	undefined, game mode not found
1	Game mode found	214748348	undefined, game mode not found
2	Game mode found	5,65	undefined, game mode not found
214748347	Game mode found	-5	undefined, game mode not found
214748346	Game mode found	-214748348	undefined, game mode not found
		undefined	undefined, game mode not found
		null	undefined, game mode not found
		false	undefined, game mode not found

remove()

Equivalence Partitions	
Description	
The remove() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values
-------------

Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Game mode deleted	0	undefined, game mode not deleted
1	Game mode deleted	214748348	undefined, game mode not deleted
2	Game mode deleted	5,65	undefined, game mode not deleted
214748347	Game mode deleted	-5	undefined, game mode not deleted
214748346	Game mode deleted	-214748348	undefined, game mode not deleted
		undefined	undefined, game mode not deleted
		null	undefined, game mode not deleted
		false	undefined, game mode not deleted

## match.service.ts

### create() & update()

create() and update() take a match object as a parameter.

Default Valid Test Data
<pre>duration: 20000 gameCreation: 1671187538</pre>

### gameCreation(WIP)

Equivalence Partitions	
Description	
The create and update functions for match accept a match object with a gameCreation date attribute, which is a bigint number higher than 0, but not higher than the bigint representing the current time at run time.	
Valid Equivalence Partitions	Invalid Equivalence Partitions

1 - now	< 1
	> now

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	Now, now - 1	Now + 1

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
1405415577	Match created/updated	0	undefined, match not created/updated
1	Match created/updated	Now + 1	undefined, match not created/updated
2	Match created/updated	-5	undefined, match not created/updated
Now	Match created/updated	4,65	undefined, match not created/updated
Now - 1	Match created/updated	undefined	undefined, match not created/updated
		null	undefined, match not created/updated
		false	undefined, match not created/updated
		9223372036854775807	undefined, mastery not created/updated
		-9223372036854775807	undefined, mastery not created/updated

duration

Equivalence Partitions
Description
The create and update functions for match accept a match object with a duration

parameter, which is a whole number greater than or equal to 0 but less than infinite.

Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

### 3 Value Boundary Value Analysis

	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

### Test Values

Positive Test Values	Expected output	Negative Test Values	Expected output
0	Match created/updated	-1	undefined, match not created/updated
1	Match created/updated	2147483648	undefined, match not created/updated
2147483647	Match created/updated	5000,65	undefined, match not created/updated
2147483646	Match created/updated	undefined	undefined, match not created/updated
50000	Match created/updated	null	undefined, match not created/updated
		false	undefined, match not created/updated
		-2147483648	undefined, match not created/updated

id

### Equivalence Partitions

#### Description

The update() function requires an id whole number greater than 0, but less than infinity as a parameter.

Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Match updated	0	undefined, match not updated
1	Match updated	214748348	undefined, match not updated
2	Match updated	5,65	undefined, match not updated
214748347	Match updated	-5	undefined, match not updated
214748346	Match updated	-214748348	undefined, match not updated
		undefined	undefined, match not updated
		null	undefined, match not updated
		false	undefined, match not updated

findOne()

Equivalence Partitions
Description
The findOne() function requires an id whole number greater than 0, but less than infinity

as a parameter.

Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

### 3 Value Boundary Value Analysis

	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

### Test Values

Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Match found	0	undefined, match not found
1	Match found	214748348	undefined, match not found
2	Match found	5,65	undefined, match not found
214748347	Match found	-5	undefined, match not found
214748346	Match found	-214748348	undefined, match not found
		undefined	undefined, match not found
		null	undefined, match not found
		false	undefined, match not found

remove()

### Equivalence Partitions

Description



The remove() function requires an id whole number greater than 0, but less than infinity as a parameter.

Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

### 3 Value Boundary Value Analysis

	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

### Test Values

Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Match deleted	0	undefined, match not deleted
1	Match deleted	214748348	undefined, match not deleted
2	Match deleted	5,65	undefined, match not deleted
214748347	Match deleted	-5	undefined, match not deleted
214748346	Match deleted	-214748348	undefined, match not deleted
		undefined	undefined, match not deleted
		null	undefined, match not deleted
		false	undefined, match not deleted

## position.service.ts

create() & update()

positionName

Equivalence Partitions	
Description	
The create and update functions for position accept a position object with a positionName, which is a string with at least 1 character and no more than 45.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 1 - 45	String length: < 1
	String length: > 45

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	45, 44	46

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
String length: 25	Position created/updated	String length: 0	undefined, position not created/updated
String length: 1	Position created/updated	String length: 46	undefined, position not created/updated
String length: 2	Position created/updated	undefined	undefined, position not created/updated
String length: 45	Position created/updated	null	undefined, position not created/updated
String length: 44	Position created/updated	false	undefined, position not created/updated

id

Equivalence Partitions	
Description	
The update() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Position updated	0	undefined, position not updated
1	Position updated	214748348	undefined, position not updated
2	Position updated	5,65	undefined, position not updated
214748347	Position updated	-5	undefined, position not updated
214748346	Position updated	-214748348	undefined, position not updated
		undefined	undefined, position not updated
		null	undefined, position not updated
		false	undefined, position not updated

findOne()

Equivalence Partitions	
Description	
The findOne() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Position found	0	undefined, position not found
1	Position found	214748348	undefined, position not found
2	Position found	5,65	undefined, position not found
214748347	Position found	-5	undefined, position not found
214748346	Position found	-214748348	undefined, position not found
		undefined	undefined, position not found
		null	undefined, position not found
		false	undefined, position not found

remove()

Equivalence Partitions	
Description	
The remove() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Position deleted	0	undefined, position not deleted
1	Position deleted	214748348	undefined, position not deleted
2	Position deleted	5,65	undefined, position not deleted
214748347	Position deleted	-5	undefined, position not deleted
214748346	Position deleted	-214748348	undefined, position not deleted
		undefined	undefined, position not deleted
		null	undefined, position not deleted
		false	undefined, position not deleted

region.service.ts

create() & update()

regionName

Equivalence Partitions	
Description	
The create and update functions for region accept a region object with a regionName, which is a string with at least 1 character and no more than 45.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 1 - 45	String length: < 1
	String length: > 45

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	45, 44	46

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
String length: 25	Region created/updated	String length: 0	undefined, region not created/updated
String length: 1	Region created/updated	String length: 46	undefined, region not created/updated
String length: 2	Region created/updated	undefined	undefined, region not created/updated
String length: 45	Region created/updated	null	undefined, region not created/updated
String length: 44	Region created/updated	false	undefined, region not created/updated

id

Equivalence Partitions	
Description	
The update() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Region updated	0	undefined, region not updated
1	Region updated	214748348	undefined, region not updated
2	Region updated	5,65	undefined, region not updated
214748347	Region updated	-5	undefined, region not updated
214748346	Region updated	-214748348	undefined, region not updated
		undefined	undefined, region not updated
		null	undefined, region not updated
		false	undefined, region not updated

findOne()

Equivalence Partitions	
Description	
The findOne() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Region found	0	undefined, region not found
1	Region found	214748348	undefined, region not found
2	Region found	5,65	undefined, region not found
214748347	Region found	-5	undefined, region not found
214748346	Region found	-214748348	undefined, region not found
		undefined	undefined, region not found
		null	undefined, region not found
		false	undefined, region not found



## findFromRegionName()

Equivalence Partitions	
Description	
The findFromRegionName() function requires a regionName which is a string with at least 1 character and no more than 45. parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 1 - 45	String length: < 1
	String length: > 45

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	45, 44	46

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
String length: 25	Region found	String length: 0	undefined, region not found
String length: 1	Region found	String length: 46	undefined, region not found
String length: 2	Region found	undefined	undefined, region not found
String length: 45	Region found	null	undefined, region not found
String length: 44	Region found	false	undefined, region not found

## remove()

Equivalence Partitions
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Description	
The remove() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Region deleted	0	undefined, region not deleted
1	Region deleted	214748348	undefined, region not deleted
2	Region deleted	5,65	undefined, region not deleted
214748347	Region deleted	-5	undefined, region not deleted
214748346	Region deleted	-214748348	undefined, region not deleted
		undefined	undefined, region not deleted
		null	undefined, region not deleted
		false	undefined, region not deleted

## participants.service.ts

### create() & update()

create() and update() take a participant object as a parameter.

#### Default Valid Test Data

```
assists: 5
deaths: 5
kills: 5
baronKills: 5
consumablePurchased: 5
damageDealtToBuildings: 5
damageDealtToObjectives: 5
damageDealtToTurrets: 5
damageSelfMitigated: 5
doubleKills: 5
tripleKills: 5
quadraKills: 5
pentaKills: 5
```

### assists

#### Equivalence Partitions

##### Description

The create and update functions for participant accept a participant object with an assists parameter, which is a whole number greater than or equal to 0 but less than infinite.

##### Valid Equivalence Partitions

0 - 2147483647

##### Invalid Equivalence Partitions

< 0

> 2147483647

#### 3 Value Boundary Value Analysis

##### Valid Boundaries

##### Lower Boundaries

0, 1

##### Invalid Boundaries

-1

Upper Boundaries	2147483647, 2147483646	2147483648
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Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

deaths

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a deaths parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

kills

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a kills parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

baronKills

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a baronKills parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

consumablesPurchased

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a consumablesPurchased parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

damageDealtToBuildings

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a damageDealtToBuildings parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648



Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

## damageDealtToObjectives

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a damageDealtToObjectives parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

damageDealtToTurrets

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a damageDealtToTurrets parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

damageSelfMitigated

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a damageSelfMitigated parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

doubleKills

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a doubleKills parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

tripleKills

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a tripleKills parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values
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Positive Test Values	Expected output	Negative Test Values	Expected output
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

quadraKills

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a quadraKills parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values			
Positive Test Values	Expected output	Negative Test	Expected output

		Values	
0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

pentaKills

Equivalence Partitions	
Description	
The create and update functions for participant accept a participant object with a pentaKills parameter, which is a whole number greater than or equal to 0 but less than infinite.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
0 - 2147483647	< 0
	> 2147483647

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	0, 1	-1
Upper Boundaries	2147483647, 2147483646	2147483648

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output

0	Participant created/updated	-1	undefined, participant not created/updated
1	Participant created/updated	2147483648	undefined, participant not created/updated
2147483647	Participant created/updated	5000,65	undefined, participant not created/updated
2147483646	Participant created/updated	undefined	undefined, participant not created/updated
		null	undefined, participant not created/updated
		false	undefined, participant not created/updated
		-2147483648	undefined, participant not created/updated

id

Equivalence Partitions	
Description	
The update() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Participant updated	0	undefined, participant not updated



1	Participant updated	214748348	undefined, participant not updated
2	Participant updated	5,65	undefined, participant not updated
214748347	Participant updated	-5	undefined, participant not updated
214748346	Participant updated	-214748348	undefined, participant not updated
		undefined	undefined, participant not updated
		null	undefined, participant not updated
		false	undefined, participant not updated

findOne()

Equivalence Partitions	
Description	
The findOne() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Participant found	0	undefined, participant not

			found
1	Participant found	214748348	undefined, participant not found
2	Participant found	5,65	undefined, participant not found
214748347	Participant found	-5	undefined, participant not found
214748346	Participant found	-214748348	undefined, participant not found
		undefined	undefined, participant not found
		null	undefined, participant not found
		false	undefined, participant not found

remove()

Equivalence Partitions	
Description	
The remove() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output

200	Participant deleted	0	undefined, participant not deleted
1	Participant deleted	214748348	undefined, participant not deleted
2	Participant deleted	5,65	undefined, participant not deleted
214748347	Participant deleted	-5	undefined, participant not deleted
214748346	Participant deleted	-214748348	undefined, participant not deleted
		undefined	undefined, participant not deleted
		null	undefined, participant not deleted
		false	undefined, participant not deleted

tier.service.ts

create() & update()

tierName

Equivalence Partitions	
Description	
The create and update functions for tier accept a tier object with a tierName, which is a string with at least 1 character and no more than 45.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 1 - 45	String length: < 1
	String length: > 45

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries

Lower Boundaries	1, 2	0
Upper Boundaries	45, 44	46

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
String length: 25	Tier created/updated	String length: 0	undefined, tier not created/updated
String length: 1	Tier created/updated	String length: 46	undefined, tier not created/updated
String length: 2	Tier created/updated	undefined	undefined, tier not created/updated
String length: 45	Tier created/updated	null	undefined, tier not created/updated
String length: 44	Tier created/updated	false	undefined, tier not created/updated

id

Equivalence Partitions	
Description	
The update() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values
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Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Tier updated	0	undefined, tier not updated
1	Tier updated	214748348	undefined, tier not updated
2	Tier updated	5,65	undefined, tier not updated
214748347	Tier updated	-5	undefined, tier not updated
214748346	Tier updated	-214748348	undefined, tier not updated
		undefined	undefined, tier not updated
		null	undefined, tier not updated
		false	undefined, tier not updated

findOne()

Equivalence Partitions	
Description	
The findOne() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Tier found	0	undefined, tier not found
1	Tier found	214748348	undefined, tier not found
2	Tier found	5,65	undefined, tier not found
214748347	Tier found	-5	undefined, tier not found
214748346	Tier found	-214748348	undefined, tier not found
		undefined	undefined, tier not found
		null	undefined, tier not found
		false	undefined, tier not found

remove()

Equivalence Partitions	
Description	
The remove() function requires an id whole number greater than 0, but less than infinity as a parameter.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
1 - 214748347	< 1
	> 214748347

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	1, 2	0
Upper Boundaries	214748347, 214748346	214748348

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
200	Tier deleted	0	undefined, tier not

			deleted
1	Tier deleted	214748348	undefined, tier not deleted
2	Tier deleted	5,65	undefined, tier not deleted
214748347	Tier deleted	-5	undefined, tier not deleted
214748346	Tier deleted	-214748348	undefined, tier not deleted
		undefined	undefined, tier not deleted
		null	undefined, tier not deleted
		false	undefined, tier not deleted

## auth.service.ts

### validateUser()

validateUser() takes 2 parameters.

#### Default Valid Test Data

summonerName: "John Doe"  
password: "Password!234"

### summonerName

Equivalence Partitions	
Description	
The validateUser() function accepts a summonerName in alphanumeric characters. Spaces between characters are allowed. The length must be between 3 and 16 characters.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 3 - 16	String length: < 3
	String length: > 16

3 Value Boundary Value Analysis		
	Valid Boundaries	Invalid Boundaries
Lower Boundaries	3, 4	2
Upper Boundaries	16, 15	17

Test Values			
Positive Test Values	Expected Output	Negative Test Values	Expected Output
String length: 10	User validated	String length: 2	null, user not validated
String length: 3	User validated	String length: 17	null, user not validated
String length: 4	User validated	String length: 0	null, user not validated
String length: 16	User validated	null	null, user not validated
String length: 15	User validated	false	null, user not validated
		0	null, user not validated
		"!?=:_;"	null, user not validated
		"🤔🤔🤔"	null, user not validated

password

Equivalence Partitions	
Description	
The validateUser() function accepts a password in alphanumeric characters and allows special characters, but not emojis. The length must be between 6 and 45 characters.	
Valid Equivalence Partitions	Invalid Equivalence Partitions
String length: 6 - 45	String length: < 6
	String length: > 45

3 Value Boundary Value Analysis
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	Valid Boundaries	Invalid Boundaries
Lower Boundaries	6, 7	5
Upper Boundaries	45, 44	46

Test Values			
Positive Test Values	Expected output	Negative Test Values	Expected output
String length: 25	User validated	String length: 5	null, user not validated
String length: 6	User validated	String length: 46	null, user not validated
String length: 7	User validated	String length: 0	null, user not validated
String length: 45	User validated	undefined	null, user not validated
String length: 44	User validated	null	null, user not validated
		false	null, user not validated
		0	null, user not validated
		“💩🙄😄”	null, user not validated

login()

isAdminToken()