

# Sistemas distribuídos

## Testes da Entrega parte 2

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### inicialização

#### Banco de dados:

```
database 1
joyce@DESKTOP-KI728L5:~/sd/trabalho_part1/sistemas-distribuidos$ sh database.sh 1
```

#### Inicialização servidor:

```
server 50051
joyce@DESKTOP-KI728L5:~/sd/trabalho_part1/sistemas-distribuidos$ sh server.sh
Server started, connected to DB server on port 10001
Server started, listening on 50051
```

#### Inicialização cliente:

```
cliente 50051
joyce@DESKTOP-KI728L5:~/sd/trabalho_part1/sistemas-distribuidos$ sh client.sh
Client started, conected to 50051 port

-----
| CLIENT PORTAL |
-----
| 1. Get         |
| 2. Get Range  |
| 3. Get All     |
| 4. Put         |
| 5. Put All     |
| 6. Del         |
| 7. Del Range  |
| 8. Del All     |
| 9. Trim       |
| 10. Exit      |
-----

Choose an option: |
```

## A execução da função put:

Cliente:

```
joyce@DESKTOP-KI728L5:~/sd/trabalho_part1/sistemas-distribuidos$ sh client.sh
Client started, conected to 50051 port

-----
|          CLIENT PORTAL          |
|-----|
| 1. Get                          |
| 2. Get Range                    |
| 3. Get All                      |
| 4. Put                          |
| 5. Put All                      |
| 6. Del                          |
| 7. Del Range                    |
| 8. Del All                      |
| 9. Trim                        |
| 10. Exit                       |
|-----|

Choose an option: 4

Input the key: c1
Input the value: 1

key: "c1"
ver: 1699740203071
```

Servidor:

```
joyce@DESKTOP-KI728L5:~/sd/trabalho_part1/sistemas-distribuidos$ sh server.sh
Server started, connected to DB server on port 10001
Server started, listening on 50051
key: "c1"
val: "1"
```

Banco de dados:

```
database 1
joyce@DESKTOP-KI728L5:~/sd/trabalho_part1/sistemas-distribuidos$ sh database.sh 1
{"function": "read", "key": "c1", "value": null}
c1

{"function": "insert", "key": "c1", "value": [["1", 1699740203071]]}
|
```

## A execução da função última versão

cliente:

```
Choose an option: 1

Input the key: c1
Input the values (use -1 to no version): -1

key: "c1"
val: "1"
ver: 1699740203071
```

server:

```
joyce@DESKTOP-KI728L5:~/sd/trabalho_part1/sistemas-distribuidos$ sh server.sh
Server started, connected to DB server on port 10001
Server started, listening on 50051
key: "c1"
val: "1"

Get c1 key
{'data': [['1', 1699740203071]]}
|
```

Banco:

```
joyce@DESKTOP-KI728L5:~/sd/trabalho_part1/sistemas-distribuidos$ sh database.sh 1
{"function": "read", "key": "c1", "value": null}
c1

{"function": "insert", "key": "c1", "value": [["1", 1699740203071]]}
{"function": "read", "key": "c1", "value": null}
c1
[["1", 1699740203071]]
|
```

## Inserindo muitos valores e chaves com o putall:

Cliente:

```
Choose an option: 5

Input the keys separated by space: c1 c2 c3
Input the values separated by space: 2 3 4
[key: "c1"
old_val: "1"
old_ver: 1699740203071
ver: 1699741025978
, key: "c2"
ver: 1699741026009
, key: "c3"
old_val: "3"
old_ver: 1699675852317
ver: 1699741026035
]
```

servidor:

```
PutAll
key: "c1"
val: "2"

key: "c2"
val: "3"

key: "c3"
val: "4"
```

**Banco:**

```
{ "function": "insert", "key": "c1", "value": [[ "1", 1699740203071], [ "2", 1699741025978]] }
{ "function": "read", "key": "c2", "value": null }
c2

{ "function": "insert", "key": "c2", "value": [[ "3", 1699741026009]] }
{ "function": "read", "key": "c3", "value": null }
c3
[[ "3", 1699675852317]]
{ "function": "delete", "key": "c3", "value": null }
{ "function": "insert", "key": "c3", "value": [[ "3", 1699675852317], [ "4", 1699741026035]] }
```

**Coletando uma chave sem versão depois da execução do putall:**

**cliente:**

```
-----
|          CLIENT PORTAL          |
|-----|
|  1. Get                         |
|  2. Get Range                   |
|  3. Get All                     |
|  4. Put                         |
|  5. Put All                     |
|  6. Del                         |
|  7. Del Range                   |
|  8. Del All                     |
|  9. Trim                       |
| 10. Exit                       |
|-----|

Choose an option: 1

Input the key: c1
Input the values (use -1 to no version): -1

key: "c1"
val: "2"
ver: 1699741025978
```

**Server:**

```
Get c1 key
{'data': [['1', 1699740203071], ['2', 1699741025978]]}
```

**Banco:**

```
c1
[["1", 1699740203071], ["2", 1699741025978]]
```

**Inserindo novo valor para uma chave existente:**

**Cliente:**

```
Choose an option: 4

Input the key: c1
Input the value: 10

key: "c1"
old_val: "2"
old_ver: 1699741025978
ver: 1699742060207
```

**server:**

```
key: "c1"
val: "10"
```

**banco:**

```
{"function": "insert", "key": "c1", "value": [["1", 1699740203071], ["2", 1699741025978], ["10", 1699742060207]]}
```

## Pegando valor com uma chave e uma versão específica:

cliente:

```
Choose an option: 1

Input the key: c1
Input the values (use -1 to no version): 1699742060207

key: "c1"
val: "10"
ver: 1699742060207
```

server:

```
Get c1 key
{'data': [['1', 1699740203071], ['2', 1699741025978], ['10', 1699742060207]]}
```

Banco:

```
{"function": "read", "key": "c1", "value": null}
c1
[["1", 1699740203071], ["2", 1699741025978], ["10", 1699742060207]]
```

## Pegando valores de várias chaves na última versão usando o getall:

Cliente:

```
Choose an option: 3

Input the keys separated by space: c1 c2
Input the versions separated by space (use -1 to last version): -1 -1
[key: "c1"
val: "10"
ver: 1699742060207
, key: "c2"
val: "3"
ver: 1699741026009
]
```

**Server:**

```
GetAll
Get c1 key
{'data': [['1', 1699740203071], ['2', 1699741025978], ['10', 1699742060207]]}
Get c2 key
{'data': [['3', 1699741026009]]}
```

**Banco:**

```
{"function": "read", "key": "c1", "value": null}
c1
[["1", 1699740203071], ["2", 1699741025978], ["10", 1699742060207]]
{"function": "read", "key": "c2", "value": null}
c2
[["3", 1699741026009]]
```

**Pegando valores de várias chaves especificando versão  
usando o getall:**

**Cliente:**

```
Choose an option: 3

Input the keys separated by space: c1 c2
Input the versions separated by space (use -1 to last version): 1699741025978 -1
[key: "c1"
val: "2"
ver: 1699741025978
, key: "c1"
val: "1"
ver: 1699740203071
, key: "c2"
val: "3"
ver: 1699741026009
]
```

**Server:**

```
GetAll
{'data': [['1', 1699740203071], ['2', 1699741025978], ['10', 1699742060207]]}
Get c2 key
{'data': [['3', 1699741026009]]}
```



Banco:

```
{ "function": "read", "key": "c1", "value": null }
c1
[["1", 1699740203071], ["2", 1699741025978], ["10", 1699742060207]]
{ "function": "read", "key": "c2", "value": null }
c2
[["3", 1699741026009]]
```

Pegando um intervalo de chaves com último valor de versão  
respeitando a ordem alfabética:

Cliente:

```
Choose an option: 2

Input two keys and values below
Input the keys separated by space: c2 c4
Input the versions separated by space (use -1 to last version): -1 -1
[key: "c2"
val: "3"
ver: 1699741026009
, key: "c3"
val: "4"
ver: 1699741026035
, key: "c4"
val: "4"
ver: 1699745228558
]
```

Server:

```
GetRange
{ 'all_data': { 'c1': [['1', 1699740203071], ['2', 1699741025978], ['10', 1699742060207]], 'c2': [['3', 1699741026009]], 'c3': [['3', 1699675852317], ['4', 1699741026035]], 'c4': [['4', 1699745228558]], 'c5': [['5', 1699745235137]] } }
[['3', 1699741026009]]
[['3', 1699675852317], ['4', 1699741026035]]
[['4', 1699745228558]]
```

Banco:

```
database 3
{"function": "insert", "key": "c4", "value": [["4", 1699745228558]]}
{"function": "read", "key": "c5", "value": null}
c5

{"function": "insert", "key": "c5", "value": [["5", 1699745235137]]}
{"function": "get_all_data", "key": null, "value": null}
{ 'c1': [['1', 1699740203071], ['2', 1699741025978], ['10', 1699742060207]], 'c2': [['3', 1699741026009]], 'c3': [['3', 1699675852317], ['4', 1699741026035]], 'c4': [['4', 1699745228558]], 'c5': [['5', 1699745235137]] }
```

## Pegando um intervalo de chaves com valor específico de versão respeitando a ordem alfabética:

Cliente:

```
Choose an option: 2

Input two keys and values below
Input the keys separated by space: c1 c3
Input the versions separated by space (use -1 to last version): 1699741025978 -1
[key: "c1"
val: "2"
ver: 1699741025978
, key: "c1"
val: "1"
ver: 1699740203071
, key: "c3"
val: "3"
ver: 1699675852317
]
```

Server:

```
GetRange
{all_data: {c1: [['1', 1699740203071], ['2', 1699741025978], ['10', 1699742060207]], c2: [['3', 1699741026009]], c3: [['3', 1699675852317], ['4', 1699741026035]], c4: [['4', 1699745228558]], c5: [['5', 1699745235137]]}}
[['1', 1699740203071], ['2', 1699741025978], ['10', 1699742060207]]
[['3', 1699741026009]]
[['3', 1699675852317], ['4', 1699741026035]]
```

Banco:

```
{"function": "get_all_data", "key": null, "value": null}
{c1: [['1', 1699740203071], ['2', 1699741025978], ['10', 1699742060207]], c2: [['3', 1699741026009]], c3: [['3', 1699675852317], ['4', 1699741026035]], c4: [['4', 1699745228558]], c5: [['5', 1699745235137]]}
```

## Deletando uma chave:

Cliente:

```
Choose an option: 6

Input the key: c3

key: "c3"
val: "4"
ver: 1699741026035
```

**Server:**

```
Get c3 key
```

**Banco:**

```
c3
[["3", 1699675852317], ["4", 1699741026035]]
{"function": "delete", "key": "c3", "value": null}
```

**Deletando várias chaves:**

```
Choose an option: 8

Input the keys separated by space: c4 c5
[key: "c4"
val: "4"
ver: 1699745228558
, key: "c5"
val: "5"
ver: 1699745235137
]
```

**Server:**

```
DelAll
Get c4 key
Get c5 key
```

**Banco:**

```
c4
[["4", 1699745228558]]
{"function": "delete", "key": "c4", "value": null}
{"function": "read", "key": "c5", "value": null}
c5
[["5", 1699745235137]]
{"function": "delete", "key": "c5", "value": null}
```

## Deletando um intervalo de chaves:

Cliente:

```
Choose an option: 7

Input two keys and values  below
Input the keys separated by space: c3 c5
[key: "c3"
val: "3"
ver: 1699675852317
, key: "c4"
val: "4"
ver: 1699746284730
, key: "c5"
val: "5"
ver: 1699746297668
]
```

Server:

```
DelRange
{'all_data': ['c2', 'c3', 'c4', 'c5']}
['c2', 'c3', 'c4', 'c5']
Get c3 key
Get c4 key
Get c5 key
|
```

Banco:

```
c3
[["3", 1699675852317]]
{"function": "delete", "key": "c3", "value": null}
{"function": "read", "key": "c4", "value": null}
c4
[["4", 1699746284730]]
{"function": "delete", "key": "c4", "value": null}
{"function": "read", "key": "c5", "value": null}
c5
[["5", 1699746297668]]
{"function": "delete", "key": "c5", "value": null}
|
```

**Apagando todos os valores, deixando só a última versão:**

**Cliente:**

```
Choose an option: 9

Input the key: c2

key: "c2"
val: "5"
ver: 1699746543325
```

**Server:**

```
Get c2 key
{'data': [['13', 1699746257996], ['1', 1699746534606], ['5', 1699746543325]]}
Get c2 key
```

**Banco:**

```
c2
[["13", 1699746257996], ["1", 1699746534606], ["5", 1699746543325]]
{"function": "delete", "key": "c2", "value": null}
{"function": "insert", "key": "c2", "value": [["5", 1699746543325]]}
```