Challenge

RESTFul API

Document info

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Document history

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Reviews

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# Introduction

In the Challenge a RESTFul API is used. To make the exact usage of the API more clear a working demonstrator is being developed. In this document we describe every call and provide an example as well.

# Interface

The whole interface is divided into the different phases on an event:

* Create stadium
* Sell tickets
* Report event selling results.

## Create Stadium Phase

### Add Stadium

With the ‘add’ call a stadium is introduced into the system.

| Field | Sub field | Value | Description |
| --- | --- | --- | --- |
| HTTP |  | POST |  |
| URL |  | /stadiums |  |
| Body |  |  |  |
|  | id | <String> | Unique ID of the event. |
|  | name | <String> | Human readable of the event. |
| Response |  |  | Json of created stadium. |

Example

* Create stadium with ID ‘123’ and readable name ‘ArenaA’;
* Request: POST /stadiums
* Request body: {"id":"123","name":"ArenA"}
* Response :
  + HTTP OK (200)
  + {"id":"123","name":"ArenA"}

### Create Pricelist

With ‘create pricelist’ a overall usable pricelist will be created.

| Field | Sub field | Value | Description |
| --- | --- | --- | --- |
| HTTP |  | POST |  |
| URL |  | /pricelists |  |
| Body |  |  |  |
|  | id | <String> | Unique ID of the pricelist. |
|  | name | <String> | Human readable of the pricelist. |
|  | pricecategories | Map | The map maps a category to a pricelist. |
| Response |  |  | Json of created pricelist. |

Example

* Create a pricelist with ID ‘p1’ and prices for the categories [‘seniors’, ‘adults’, ‘kids’ ];
* Request: POST /pricelists
* Request body : {"id":"pl","name":"pl","pricecategories":{"seniors":120,"adults":130,"kids":110}}
* Response :
  + HTTP OK (200)
  + {"id":"pl","name":"pl","pricecategories":{"seniors":120,"adults":130,"kids":110}}

### Create Block

Create a block within a stadium.

| Field | Sub field | Value | Description |
| --- | --- | --- | --- |
| HTTP |  | POST |  |
| URL |  | /stadiums/<sid>/block |  |
|  | sid | <String> | Reference to stadium with its ID. |
| Body |  |  |  |
|  | id | <String> | Unique ID of the block |
|  | name | <String> | Human readable of the block. |
|  | rows | <Int> | Number of rows in this block. |
|  | seats | <int> | Number of seats per row in this block. |
|  | defaultprice | <String> | Reference to pricelist with its ID. |
| Response |  |  | Json of created block |

Example

* Create for stadium ‘s1’ a block with id ‘b1’, with 10 rows and 20 seats per row. As default pricelist ‘p3’ will be used;
* Request: POST /stadiums/s1/block
* Request body : {"id":"b2","name":"b2","rows":10,"seats":20,"defaultPrice":"p3}
* Response :
  + HTTP OK (200)
  + {"id":"b2","name":"b2","rows":10,"seats":20,"defaultPrice":"p3","availability":200}

### Update Block

Once a block is created, it can be changed with this call.

| Field | Sub field | Value | | Description |
| --- | --- | --- | --- | --- |
| HTTP |  | POST | |  |
| URL |  | /stadiums/<sid>/block/<bid>/row/<row>/seat/<seat> | | |
|  | sid | <String> | Reference to stadium with its ID. | |
|  | bid | <String> | Reference to block with its ID. | |
|  | row | <Int> | Reference or row number | |
|  | seat | <Int> | Reference to seat number in given row. | |
| Body |  |  |  | |
|  | Available | <Boolean> | If given row/seat is available. | |
|  | Pricelist | <String> | Reference to pricelist with its ID. | |
| Response |  |  | Json of updated seat. | |

Example 1:

* Make 4th seat on row 3 unavailable of block ‘b1’ in stadium ‘s2’;
* Request:
  + POST /stadiums/s2/block/b1/row/3/seat/4
  + {"available":false}
* Response
  + HTTP OK (200)
  + {"row":3,"seat":4,"available":false,"priceList":""}

Example 2:

* Change the pricelist of 4th seat on row 3 of block ‘b1’ in stadium ‘s2’ to pricelist ‘p4’;
* Request:
  + POST /stadiums/s2/block/b1/row/3/seat/4
  + {"pricelist":"p4"}
* Response
  + HTTP OK (200)
  + {"row":3,"seat":4,"available":true,"priceList":"4"}

## Sell Tickets Phase

### Check availability

Sell tickets from a given block within a stadium.

| Field | Sub field | Value | Description |
| --- | --- | --- | --- |
| HTTP |  | GET |  |
| URL |  | /available/<sid> |  |
|  | sid | <String> | Reference to stadium with its ID. |
| Response |  |  | Json of found tickets or empty list if no / not enough tickets are available. |

Example

* Request the availability for stadium ‘s1’
* Request:
  + GET /available/:sid
* Response
  + HTTP OK (200)
  + [{"id":"b21","count":150},{"id":"b22","count":100}]

### Sell Tickets

Sell tickets from a given block within a stadium.

| Field | Sub field | Value | Description |
| --- | --- | --- | --- |
| HTTP |  | POST |  |
| URL |  | /tickets/buy/<sid>/<bid> |  |
|  | sid | <String> | Reference to stadium with its ID. |
|  | bid | <String> | Reference to block with its ID. |
| Body |  |  |  |
|  | Request-id | <String> | Unique ID of ticket request |
|  | Ticket-request | Array of category |  |
| Response |  |  | Json of found tickets or empty list if no / not enough tickets are available. |

Example

* Request 2 kid tickets, 1 adult ticket and 1 senior ticket. The tickets are available;
* Request:
  + POST /tickets/buys2/b1
  + {"request-id":"147c98ad-a02f-4089-aec9-6ab30cc5848f","ticket-request":["kids","kids","adults","seniors"]}
* Response
  + HTTP OK (200)
  + [{"requestId":"147c98ad-a02f-4089-aec9-6ab30cc5848f","seat":{"row":1,"seat":1,"available":true,"priceList":"3"},"category":"kids","price":110},{"requestId":"147c98ad-a02f-4089-aec9-6ab30cc5848f","seat":{"row":1,"seat":2,"available":true,"priceList":"3"},"category":"kids","price":110},{"requestId":"147c98ad-a02f-4089-aec9-6ab30cc5848f","seat":{"row":1,"seat":3,"available":true,"priceList":"3"},"category":"adults","price":210},{"requestId":"147c98ad-a02f-4089-aec9-6ab30cc5848f","seat":{"row":1,"seat":4,"available":true,"priceList":"3"},"category":"seniors","price":130}]

## Reporting Phase

### Count All Sold Tickets

Return the number of all tickets sold.

| Field | Sub field | Value | Description |
| --- | --- | --- | --- |
| HTTP |  | GET |  |
| URL |  | /tickets/count |  |
| Response |  |  | Number of sold tickets |

Example

* Count all tickets sold;
* Request:
  + POST / tickets/count
* Response
  + HTTP OK (200)
  + {"count":7}

### Count Sold Tickets of a Stadium

Return the number of all tickets sold for a given stadium.

| Field | Sub field | Value | Description |
| --- | --- | --- | --- |
| HTTP |  | GET |  |
| URL |  | /tickets/count/<sid> |  |
|  | sid | <String> | Reference to stadium with its ID. |
| Response |  |  | Number of sold tickets |

Example

* Count all tickets sold of stadium ‘s1’;
* Request:
  + POST / tickets/count/s1
* Response
  + HTTP OK (200)
  + {"count":4}

### Show Sold Tickets of a Stadium

Return the list of all tickets sold for a given stadium.

| Field | Sub field | Value | Description |
| --- | --- | --- | --- |
| HTTP |  | GET |  |
| URL |  | /tickets/<sid>?index&page |  |
|  | index | <Int> | Index of one of the chunks, starting by ‘0’. |
|  | Page | <Int> | Partitioned into chunks of the specified size. |
| Response |  |  | Number of sold tickets |

Example

* Count all tickets sold of stadium ‘s1’ and show the result of page size ‘2’ and show the first page
* Request:
  + POST / tickets/s1?index=0&page=2
* Response
  + HTTP OK (200)
  + [{"requestId":"bfd891c1-d51c-459a-a82f-1ddda3a3a06c","seat":{"row":1,"seat":3,"available":true,"priceList":"3"},"category":"adults","price":210},{"requestId":"bfd891c1-d51c-459a-a82f-1ddda3a3a06c","seat":{"row":1,"seat":4,"available":true,"priceList":"3"},"category":"seniors","price":130}]

## Miscellaneous

### Start Selling Tickets

The stadium is created, so the signal is given from the client that the selling can be started.

| Field | Sub field | Value | Description |
| --- | --- | --- | --- |
| HTTP |  | POST |  |
| URL |  | /start/<sid> |  |
|  | sid | <String> | Reference to stadium with its ID. |
| Response |  | - |  |

### Stop Selling Tickets

The Selling is ended, so report calls can be expected.

| Field | Sub field | Value | Description |
| --- | --- | --- | --- |
| HTTP |  | POST |  |
| URL |  | /stop/<sid> |  |
|  | sid | <String> | Reference to stadium with its ID. |
| Response |  | - |  |

### Reset the Simulation

The whole simulation is reset to do another complete run.

| Field | Sub field | Value | Description |
| --- | --- | --- | --- |
| HTTP |  | POST |  |
| URL |  | /reset |  |
| Response |  | - |  |