

INSTITUTE MANAGEMENT SYSTEM WITH DOCKER

Tech Stack

Language: Java, Spring Boot

Framework: Spring

Database: PostgreSQL

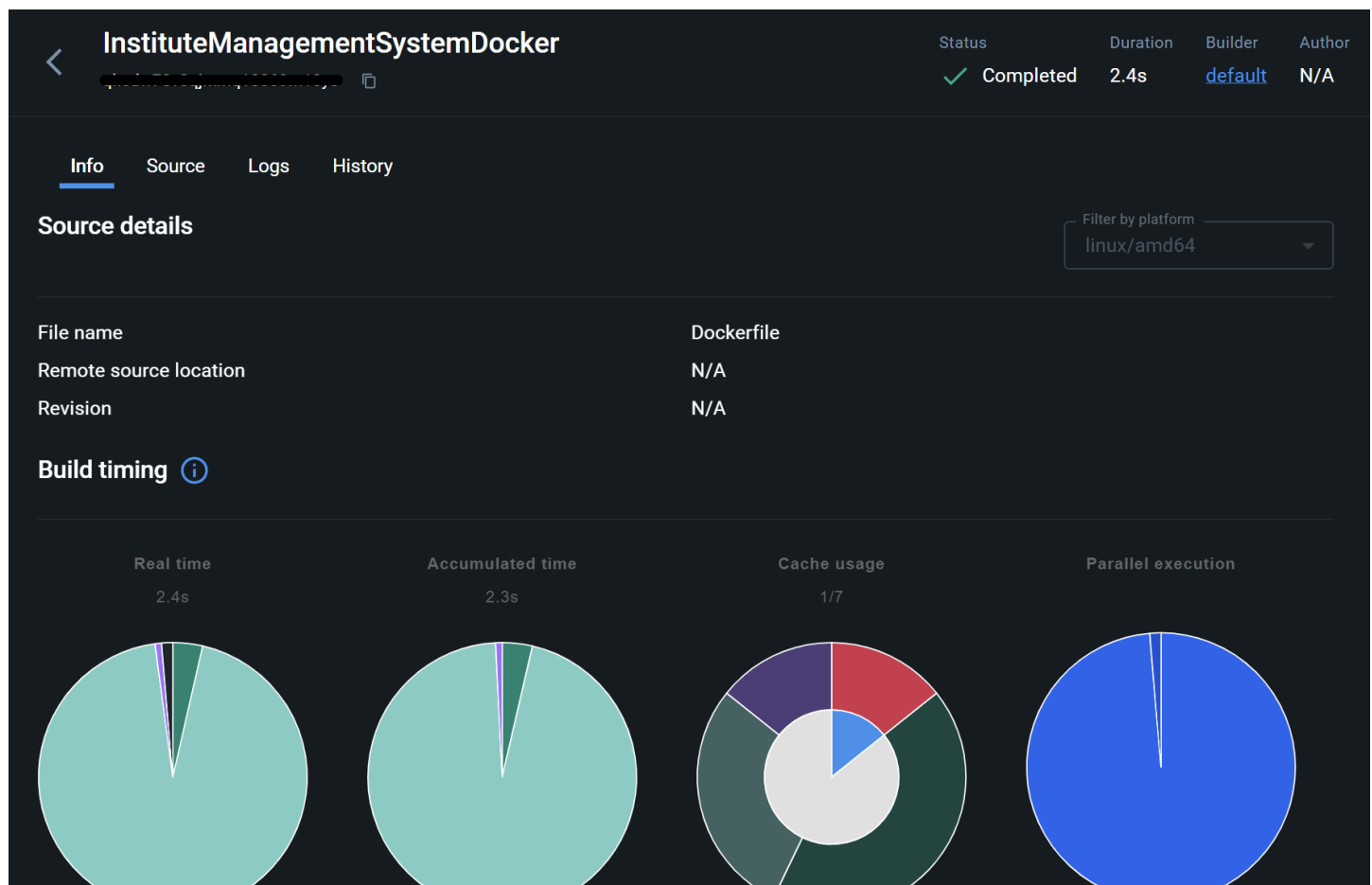
Server: Tomcat

Tools: Swagger, Spring Tool Suite, Pg Admin, Docker

Rest APIs

institute-controller		^
PUT	/Institute/{id}	▼
DELETE	/Institute/{id}	▼
GET	/Institute	▼
POST	/Institute	▼
GET	/Institute/university{university}	▼
GET	/Institute/students{students}	▼
GET	/Institute/state{state}	▼
GET	/Institute/professors{professors}	▼
GET	/Institute/name{name}	▼
GET	/Institute/id{id}	▼
GET	/Institute/country{country}	▼

Dockerized Springbbot and PostgreSQL



DOCKER CONATINER FOR SPRINGBOOT AND POSTGRESQL

```
c:\>docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
...	instituteapp_img	"java -jar institute..."	13 minutes ago	Up 13 minutes	0.0.0.0:8089->8089/tcp	institute_con
...	postgres	"docker-entrypoint.s..."	48 minutes ago	Up 48 minutes	0.0.0.0:5432->5432/tcp	postgres_con

DOCKER IMAGES FOR SPRINGBOOT AND POSTGRESQL

```
c:\>docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
instituteapp_img	latest	ca7c7f7bda1d7	36 minutes ago	529MB
postgres	latest	601001140570	5 weeks ago	425MB

Data Types of Table – Institute

Schemas

```
Institute {
  id                integer($int32)
  name*             string
  email*            string
  location*         string
  state*            string
  country*          string
  contact*          integer($int32)
  code*             integer($int32)
  university*       string
  students*         integer($int32)
  professors*       integer($int32)
  branches*         integer($int32)
}
```

DATABASE

```
postgres=# select * from institute;
 id | branches | code | contact | country | email | location | name | professors | state | students | university
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
  1 |         | 20 | 1001 | 1234 | India | bit@gmail.com | Erode | BIT | 300 | Tamilnadu | 3000 | Anna University
  2 |         | 20 | 1001 | 1234 | India | srm@gmail.com | Chennai | SRM | 300 | Tamilnadu | 3000 | SRM University
  3 |         | 20 | 1001 | 1234 | India | iitb@gmail.com | Mumbai | IIT Bombay | 500 | Mumbai | 5000 | IIT Bombay
  4 |         | 20 | 1001 | 1234 | USA | mit@gmail.com | Mumbai | MIT | 100 | texas | 3000 | MIT
  5 |         | 20 | 1004 | 1234 | India | iitb@gmail.com | Bangalore | IIT Bangalore | 500 | Karnataka | 5000 | IIT Bangalore
(5 rows)
```

CUSTOM QUERY

```
@Query("SELECT i FROM Institute i WHERE i.university like %:university%")
List<Institute> getInstituteByUniversity(@Param("university") String university);

@Query("SELECT i FROM Institute i WHERE i.state like %:state%")
List<Institute> getInstituteByState(@Param("state") String state);

@Query("SELECT i FROM Institute i WHERE i.country like %:country%")
List<Institute> getInstituteByCountry(@Param("country") String country);

@Query("SELECT i FROM Institute i WHERE i.students > :students")
List<Institute> getInstituteByStudentsCount(@Param("students") int students);

@Query("SELECT i FROM Institute i WHERE i.professors > :professors")
List<Institute> getInstituteByProfessorsCount(@Param("professors") int professors);

@Query("SELECT i FROM Institute i WHERE i.name LIKE :name%")
List<Institute> getInstituteByNameSuggest(@Param("name") String name);
```

POST INSTITUTE

POST

/Institute

Parameters

No parameters

Request body

required

```
{
  "id": 1,
  "name": "BIT",
  "email": "bit@gmail.com",
  "location": "Erode",
  "state": "Tamilnadu",
  "country": "India",
  "contact": 1234,
  "code": 1001,
  "university": "Anna University",
  "students": 3000,
  "professors": 300,
  "branches": 20
}
```

BEFORE"POST" DATABASE

```
postgres=# select * from institute;
 id | branches | code | contact | country | email | location | name | professors | state | students | university
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
(0 rows)
```

AFTER "POST" DATABASE

```
postgres=# select * from institute;
 id | branches | code | contact | country | email | location | name | professors | state | students | university
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
 1 |      20 | 1001 |    1234 | India | bit@gmail.com | Erode | BIT |      300 | Tamilnadu |    3000 | Anna University
(1 row)
```

GET ALL INSTITUTES

GET

/Institute

Curl

```
curl -X 'GET' \
'http://localhost:8080/Institute' \
-H 'accept: */*'
```

Request URL

```
http://localhost:8080/Institute
```

Server response

Code	Details
200	<div>Response body</div> <div><pre>[{ "id": 1, "name": "BIT", "email": "bit@gmail.com", "location": "Erode", "state": "Tamilnadu", "country": "India", "contact": 1234, "code": 1001, "university": "Anna University", "students": 3000, "professors": 300, "branches": 20 }]</pre></div> <div>Response headers</div> <div><pre>connection: keep-alive content-type: application/json date: Thu,08 Feb 2024 05:32:41 GMT keep-alive: timeout=60 transfer-encoding: chunked</pre></div>
Responses	
Code	Description
200	OK

UPDATE INSTITUTE BY ID

PUT

/Institute/{id}

Parameters

Name	Description
id * required	
integer(\$int32)	4
(path)	

Request body required

```
{
  "id": 4,
  "name": "MIT",
  "email": "mit@gmail.com",
  "location": "texas",
  "state": "texas",
  "country": "USA",
  "contact": 1234,
  "code": 1001,
  "university": "MIT University",
  "students": 3000,
  "professors": 150,
  "branches": 20
}
```

DATABASE

```
postgres=# select * from institute;
```

id	branches	code	contact	country	email	location	name	professors	state	students	university
1	20	1001	1234	India	bit@gmail.com	Erode	BIT	300	Tamilnadu	3000	Anna University
2	20	1001	1234	India	srm@gmail.com	Chennai	SRM	300	Tamilnadu	3000	SRM University
3	20	1001	1234	India	iitb@gmail.com	Mumbai	IIT Bombay	500	Mumbai	5000	IIT Bombay
5	20	1004	1234	India	iitb@gmail.com	Banglore	IIT Banglore	500	Karnataka	5000	IIT Banglore
4	20	1001	1234	USA	mit@gmail.com	texas	MIT	150	texas	3000	MIT University

(5 rows)

DELETE INSTITUTE BY ID

DELETE

/Institute/{id}

Parameters

Name	Description
id ★ required	
integer(\$int32)	5
(path)	

Execute

Responses

Curl

```
curl -X 'DELETE' \
'http://localhost:8080/Institute/5' \
-H 'accept: */*'
```

Request URL

```
http://localhost:8080/Institute/5
```

Server response

Code	Details
200	<div>Response headers<div><pre>connection: keep-alive content-length: 0 date: Thu,08 Feb 2024 06:09:36 GMT keep-alive: timeout=60</pre></div></div>

Responses

Code	Description
200	OK

DATABASE

```
postgres=# select * from institute;
```

id	branches	code	contact	country	email	location	name	professors	state	students	university
1	20	1001	1234	India	bit@gmail.com	Erode	BIT	300	Tamilnadu	3000	Anna University
2	20	1001	1234	India	srm@gmail.com	Chennai	SRM	300	Tamilnadu	3000	SRM University
3	20	1001	1234	India	iitb@gmail.com	Mumbai	IIT Bombay	500	Mumbai	5000	IIT Bombay
4	20	1001	1234	USA	mit@gmail.com	texas	MIT	150	texas	3000	MIT University

(4 rows)

GET INSTITUTE BY ID

GET /Institute/id{id}

Parameters

Name	Description
id * required integer(\$int32) (path)	<input type="text" value="5"/>

Responses

Curl

```
curl -X 'GET' \
'http://localhost:8080/Institute/id5' \
-H 'accept: */*'

```

Request URL

```
http://localhost:8080/Institute/id5

```

Server response

Code	Details
200	<div><div>Response body</div><pre>{ "id": 5, "name": "IIT Banglore", "email": "iitb@gmail.com", "location": "Banglore", "state": "Karnataka", "country": "India", "contact": 1234, "code": 1004, "university": "IIT Banglore", "students": 5000, "professors": 500, "branches": 20 } </pre></div> <div><div>Response headers</div><pre>connection: keep-alive content-type: application/json date: Thu,08 Feb 2024 05:53:50 GMT keep-alive: timeout=60 transfer-encoding: chunked </pre></div>

Responses

Code	Description
200	OK

GET INSTITUTE BY NAME

GET

/Institute/name{name}

Parameters

Name	Description
<div>name * required</div> <div>string</div> <div>(path)</div>	<div>IIT</div>

Responses

Curl

```
curl -X 'GET' \
'http://localhost:8080/Institute/nameIIT' \
-H 'accept: */*'
```

Request URL

```
http://localhost:8080/Institute/nameIIT
```

Server response

Code	Details
200	<div>Response body</div> <div><pre>{ "id": 3, "name": "IIT Bombay", "email": "iitb@gmail.com", "location": "Mumbai", "state": "Mumbai", "country": "India", "contact": 1234, "code": 1001, "university": "IIT Bombay", "students": 5000, "professors": 500, "branches": 20 }, { "id": 5, "name": "IIT Banglore", "email": "iitb@gmail.com", "location": "Banglore", "state": "Karnataka", "country": "India", "contact": 1234, "code": 1004, "university": "IIT Banglore", "students": 5000, "professors": 500, "branches": 20 }]</pre></div> <div>Response headers</div> <div><pre>connection: keep-alive content-type: application/json date: Thu,08 Feb 2024 05:55:18 GMT keep-alive: timeout=60 transfer-encoding: chunked</pre></div>

GET INSTITUTE BY UNIVERSITY

GET

/Institute/university{university}

Parameters

Name	Description
<div>university * required</div> <div>string</div> <div>(path)</div>	<div>SRM University</div>

Curl

```
curl -X 'GET' \
'http://localhost:8080/Institute/universitySRM%20University' \
-H 'accept: */*'
```

Request URL

```
http://localhost:8080/Institute/universitySRM%20University
```

Server response

Code	Details				
200	<div><div>Response body</div><div><pre>[{ "id": 2, "name": "SRM", "email": "srm@gmail.com", "location": "Chennai", "state": "Tamilnadu", "country": "India", "contact": 1234, "code": 1001, "university": "SRM University", "students": 3000, "professors": 300, "branches": 20 }]</pre></div></div> <div><div>Response headers</div><div><pre>connection: keep-alive content-type: application/json date: Thu,08 Feb 2024 05:48:58 GMT keep-alive: timeout=60 transfer-encoding: chunked</pre></div></div>				
<div>Responses</div> <table><thead><tr><th>Code</th><th>Description</th></tr></thead><tbody><tr><td>200</td><td>OK</td></tr></tbody></table>		Code	Description	200	OK
Code	Description				
200	OK				

GET INSTITUTE BY STATE

GET

/Institute/state{state}

Parameters

Name	Description
state * required string (path)	<div>Mumbai</div>

Responses

Curl

```
curl -X 'GET' \
'http://localhost:8080/Institute/stateMumbai' \
-H 'accept: */*'
```

Request URL

```
http://localhost:8080/Institute/stateMumbai
```

Server response

Code	Details
200	<div><div>Response body</div><div><pre>[{ "id": 3, "name": "IIT Bombay", "email": "iitb@gmail.com", "location": "Mumbai", "state": "Mumbai", "country": "India", "contact": 1234, "code": 1001, "university": "IIT Bombay", "students": 5000, "professors": 500, "branches": 20 }]</pre></div><div><div>Response headers</div><div><pre>connection: keep-alive content-type: application/json date: Thu,08 Feb 2024 05:51:16 GMT keep-alive: timeout=60 transfer-encoding: chunked</pre></div></div></div>

Responses

Code	Description
200	OK

GET INSTITUTE BY COUNTRY

GET

/Institute/country{country}

Parameters

Name	Description
country * required string (path)	<div>USA</div>

Responses

Curl

```
curl -X 'GET' \
'http://localhost:8080/Institute/countryUSA' \
-H 'accept: */*'
```

Request URL

```
http://localhost:8080/Institute/countryUSA
```

Server response

Code	Details
200	<div><div>Response body</div><div><pre>[{ "id": 4, "name": "MIT", "email": "mit@gmail.com", "location": "texas", "state": "texas", "country": "USA", "contact": 1234, "code": 1001, "university": "MIT University", "students": 3000, "professors": 150, "branches": 20 }]</pre></div><div><div>Response headers</div><div><pre>connection: keep-alive content-type: application/json date: Thu,08 Feb 2024 05:54:30 GMT keep-alive: timeout=60 transfer-encoding: chunked</pre></div></div></div>

Responses

Code	Description
200	OK

GET INSTITUTE BY COUNT OF STUDENTS GREATER THAN

GET

/Institute/students{students}

Parameters

Name	Description
students * required integer(\$int32) (path)	<div>4000</div>

Responses

Curl

curl -X 'GET' \
'http://localhost:8080/Institute/students4000' \
-H 'accept: */*'

Request URL

http://localhost:8080/Institute/students4000

Server response

Code	Details
200	<div><div>Response body</div><div>[{ "id": 3, "name": "IIT Bombay", "email": "iitb@gmail.com", "location": "Mumbai", "state": "Mumbai", "country": "India", "contact": 1234, "code": 1001, "university": "IIT Bombay", "students": 5000, "professors": 500, "branches": 20 }, { "id": 5, "name": "IIT Banglore", "email": "iitb@gmail.com", "location": "Banglore", "state": "Karnataka", "country": "India", "contact": 1234, "code": 1004, "university": "IIT Banglore", "students": 5000, "professors": 500, "branches": 20 }]</div><div>Response headers</div><div>connection: keep-alive content-type: application/json date: Thu,08 Feb 2024 06:02:00 GMT keep-alive: timeout=60 transfer-encoding: chunked</div></div>

GET INSTITUTE BY COUNT OF PROFESSORS GREATER THAN

GET

/Institute/professors{professors}

Parameters

Name	Description
professors * required	
integer(\$int32)	450
(path)	

Responses

Curl

```
curl -X 'GET' \
'http://localhost:8080/Institute/professors450' \
-H 'accept: */*'
```

Request URL

```
http://localhost:8080/Institute/professors450
```

Server response

Code	Details
200	<div><div>Response body</div><div><pre>{ "id": 3, "name": "IIT Bombay", "email": "iitb@gmail.com", "location": "Mumbai", "state": "Mumbai", "country": "India", "contact": 1234, "code": 1001, "university": "IIT Bombay", "students": 5000, "professors": 500, "branches": 20 }, { "id": 5, "name": "IIT Banglore", "email": "iitb@gmail.com", "location": "Banglore", "state": "Karnataka", "country": "India", "contact": 1234, "code": 1004, "university": "IIT Banglore", "students": 5000, "professors": 500, "branches": 20 } 1</pre></div></div>

Response headers

```
connection: keep-alive
content-type: application/json
date: Thu,08 Feb 2024 05:52:46 GMT
keep-alive: timeout=60
transfer-encoding: chunked
```