

Java:Springboot Project

Assignment

1. **Types:** Spring boot Rest API
2. **Topics Covered:** Java Fundamental, PostgreSQL, Spring Boot Rest API

Scenario

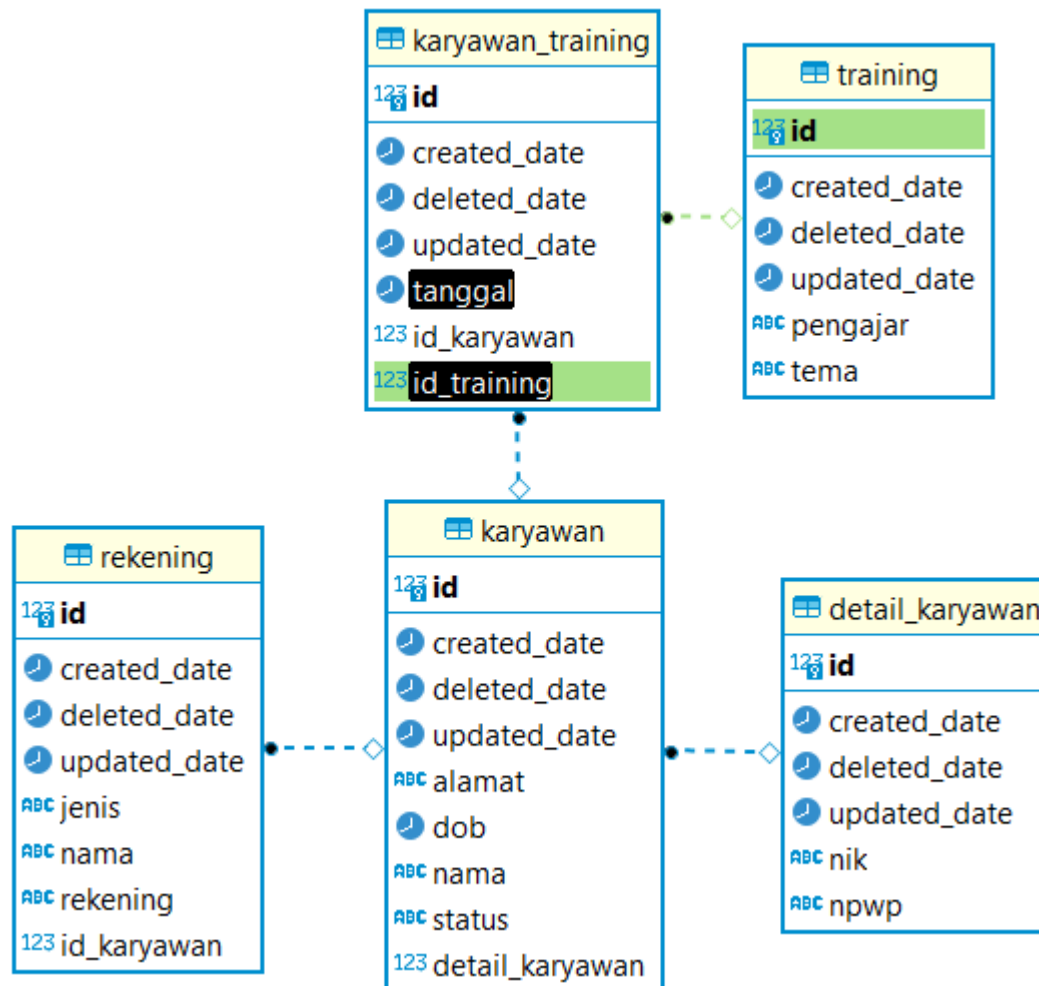
Perusahaan A adalah salah satu perusahaan terbesar di Indonesia. Untuk menunjang kemampuan karyawan mereka, maka Perusahaan A ingin memberikan training kepada semua karyawan mereka berbasis online. Oleh karena itu anda diminta untuk membuat aplikasi Training karyawan untuk Perusahaan A.

Tahap dalam membangun aplikasi adalah sebagai berikut :

1. Merancang Database Berdasarkan ERD yang telah disediakan.
2. Membuat REST API berdasarkan endpoint yang telah disediakan.
3. Membuat Dokumentasi API dengan menggunakan Postman/Swagger
4. Database yang digunakan PostgreSQL

Sebagai seorang Java Developer, kamu diminta membuat Rest API Training Karyawan pada **point diatas**.

ERD



Penjelasan ERD:

1. Karyawan : detail karyawan -> one to one
2. Karyawan : training -> one to many
3. Karyawan : karyawan training -> one to many
4. Karyawan training : training -> many to one

Objective

Project dikerjakan secara **Mandiri**. Tujuan dari project ini yaitu untuk mengukur pemahaman peserta dan pengaplikasian penggunaan framework Spring boot dalam implementasi REST API. Selain itu hasil karya yang dibuat pada final project ini dapat digunakan untuk menambah portfolio peserta.

Requirement

Requirement minimal yang harus dipenuhi dalam assignment ini adalah sebagai berikut:

1. Membuat Rest API berdasarkan endpoint yang disediakan dibawah.
2. Database PostgreSQL
3. Hasil di push di github dan di share kepada tim terkait.

Rubrik Penilaian

Category	Total Score (%)
Code Structure: 1. Clean Code 2. Design Pattern(MVC)	25%
Project Implementation: 1. Rest API	75%
Total	100

Soal

1. Rest API Untuk Karyawan + Detail

1	POST - {{host}}/v1/idstar/karyawan/save	Req { "nama": "syarini", "dob": "1996-01-01", "status": "active", "alamat": "jakarta", "detailKaryawan": { "nik": "123455", "npwp": "12345677" } }
		Res { "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "nama": "syarini", "dob": "1996-01-01T00:00:00.000+00:00", "status": "active",

		<pre> "alamat": "jakarta", "detailKaryawan": { "created_date": "2023-02-09T13:53:11.564+0700", "updated_date": "2023-02-09T13:53:11.564+0700", "deleted_date": null, "id": 1, "nik": "123455", "npwp": "12345677" } }, "status": "sukses" } </pre>
1	PUT - {{host}}/v1/idstar/karyawan/update	<div>REQ</div> <pre> { "id": 1, "nama": "syarini ubah", "dob": "1996-01-01T00:00:00.000+00:00", "status": "active", "alamat": "jakarta", "detailKaryawan": { "id": 1, "nik": "123455890", "npwp": "12345677789" } } </pre> <div>RES</div> <pre> { "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "nama": "syarini", "dob": "1996-01-01T00:00:00.000+00:00", "status": "active", "alamat": "jakarta", "detailKaryawan": { "created_date": null, "updated_date": "2023-02-09T13:56:05.583+0700", "deleted_date": null, "id": 1, "nik": "123455890", "npwp": "12345677789" } }, "status": "sukses" } </pre>

3

GET LIST

{{host}}/v1/idstar/karyawan/list

Req

GET

Get as variable

GET

{{host}}/v1/idstar/karyawan/list

Params

Authorization

Headers (9)

Body

Pre-request Script

Test

none

form-data

x-www-form-urlencoded

raw

binary

	KEY	VALUE
<input checked="" type="checkbox"/>	page	0
<input checked="" type="checkbox"/>	size	10
	Key	Text Value

RES

```
{
  "code": 200,
  "data": {
    "content": [
      {
        "created_date": "2023-02-09T13:53:11.603+0700",
        "updated_date": "2023-02-09T13:53:11.603+0700",
        "deleted_date": null,
        "id": 1,
        "nama": "syarini",
        "dob": "1996-01-01T00:00:00.000+00:00",
        "status": "active",
        "alamat": "jakarta",
        "detailKaryawan": {
          "created_date": "2023-02-09T13:53:11.564+0700",
          "updated_date": "2023-02-09T13:56:05.583+0700",
          "deleted_date": null,
          "id": 1,
          "nik": "123455890",
          "npwp": "12345677789"
        }
      }
    ],
    "pageable": {
      "sort": {
        "empty": false,
        "sorted": true,
        "unsorted": false
      },
      "offset": 0,
      "pageNumber": 0,
      "pageSize": 10,
      "unpaged": false,
      "paged": true
    },
    "last": true,
    "totalElements": 1,
    "totalPages": 1,
  }
}
```

		<pre>"size": 10, "number": 0, "sort": { "empty": false, "sorted": true, "unsorted": false }, "first": true, "numberOfElements": 1, "empty": false }, "status": "sukses" }</pre>
4	GET ID {{host}}/v1/idstar/karyawan/{id}	<div>REQ</div> <div></div> <div>RES</div> <pre>{ "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "nama": "syarini", "dob": "1996-01-01T00:00:00.000+00:00", "status": "active", "alamat": "jakarta", "detailKaryawan": { "created_date": "2023-02-09T13:53:11.564+0700", "updated_date": "2023-02-09T13:56:05.583+0700", "deleted_date": null, "id": 1, "nik": "123455890", "npwp": "12345677789" } }, "status": "sukses" }</pre>
5	DELETE {{host}}/v1/idstar/karyawan/delete	<div>REQ</div> <pre>{ "id": 1 }</pre> <div>RES</div> <pre>{ "code": 200,</pre>

		<pre> "data": "Sukses", "status": "sukses" } </pre>
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2. Rest API Untuk Rekening

1	POST - {{host}}/v1/idstar/rekening/save	<p>Req</p> <pre> { "nama": "Riki Aldi Pari", "jenis": "BCA", "rekening": "12345678", "alamat": "jakarta", "karyawan": { "id": "1" } } </pre> <p>Res</p> <pre> { "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "nama": "Riki Aldi Pari", "jenis": "BCA", "rekening": "12345678", "alamat": "jakarta", "karyawan": { "id": "1", "nama": "nama " } }, "status": "sukses" } </pre>
1	PUT - {{host}}/v1/idstar/rekening /update	<p>REQ</p> <pre> { "id": "1", "nama": "Riki Aldi Pari", "jenis": "BCA", "rekening": "12345678", "alamat": "jakarta", "karyawan": { "id": "1" } } </pre>

		<pre>} }</pre> <div>RES { "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "nama": "Riki Aldi Pari", "jenis": "BCA", "rekening": "12345678", "alamat": "jakarta", "karyawan": { "id": "1", "nama": "nama " } }, "status": "sukses" }</div>												
3	GET List {{host}}/v1/idstar/rekening/list	<div>Req <div><div>GET</div><div>{{host}}/v1/idstar/rekening/list</div></div><div>ParamsAuthorizationHeaders (9)BodyPre-request ScriptTestsSe</div><div><div>none</div><div>form-data</div><div>x-www-form-urlencoded</div><div>raw</div><div>binary</div><div>GraphQL</div></div><table><thead><tr><th></th><th>KEY</th><th>VALUE</th></tr></thead><tbody><tr><td><input checked="" type="checkbox"/></td><td>page</td><td>0</td></tr><tr><td><input checked="" type="checkbox"/></td><td>size</td><td>10</td></tr><tr><td></td><td>Key</td><td>Value</td></tr></tbody></table></div> <div>RES { "code": 200, "data": { "content": [{ "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, </div>		KEY	VALUE	<input checked="" type="checkbox"/>	page	0	<input checked="" type="checkbox"/>	size	10		Key	Value
	KEY	VALUE												
<input checked="" type="checkbox"/>	page	0												
<input checked="" type="checkbox"/>	size	10												
	Key	Value												

		<pre> "nama": "Riki Aldi Pari", "jenis": "BCA", "rekening": "12345678", "alamat": "jakarta", "karyawan": { "id": "1", "nama": "nama" } },], "pageable": { "sort": { "empty": false, "sorted": true, "unsorted": false }, "offset": 0, "pageNumber": 0, "pageSize": 10, "unpaged": false, "paged": true }, "last": true, "totalElements": 1, "totalPages": 1, "size": 10, "number": 0, "sort": { "empty": false, "sorted": true, "unsorted": false }, "first": true, "numberOfElements": 1, "empty": false }, "status": "sukses" } </pre>
4		REQ

<div>GET ID</div> <div>{{host}}/v1/idstar/rekening/{id}</div>	<div><div>GET<div>▼</div><div>{{host}}/v1/idstar/rekening/1</div></div><div>ParamsAuthorizationHeaders (9)Body●Pre-request Script</div><div>Query Params</div><table><thead><tr><th>KEY</th><th>VALUE</th></tr></thead><tbody><tr><td>Key</td><td>Value</td></tr></tbody></table></div> <div>RES</div> <div>{ "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "nama": "Riki Aldi Pari", "jenis": "BCA", "rekening": "12345678", "alamat": "jakarta", "karyawan": { "id": "1", "nama": "nama" } }, "status": "sukses" }</div>	KEY	VALUE	Key	Value
KEY	VALUE				
Key	Value				
<div>5</div> <div>DELETE</div> <div>{{host}}/v1/idstar/rekening/delete</div>	<div>REQ</div> <div><div>DELETE<div>▼</div><div>{{host}}/v1/idstar/rekening/delete</div></div><div>ParamsAuthorizationHeaders (9)Body●Pre-request Script</div><div>● none ● form-data ● x-www-form-urlencoded ● raw</div><div><div>1{ 2....."id":1 3}</div></div><div>RES</div><div>{ "code": 200, "data": "Sukses", "status": "sukses" }</div></div>				

3. Rest API Untuk Training

1	POST - {{host}}/v1/idstar/training/save	<div>Req</div> <pre>{ "tema": "JAVA DEVELOPER", "pengajar": "RIKI ALDI PARI" }</pre> <div>Res</div> <pre>{ "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "tema": "JAVA DEVELOPER", "pengajar": "RIKI ALDI PARI" }, "status": "sukses" }</pre>
1	PUT - {{host}}/v1/idstar/training/update	<div>REQ</div> <pre>{ "id": "1", "tema": "JAVA DEVELOPER", "pengajar": "RIKI ALDI PARI" }</pre> <div>RES</div> <pre>{ "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "tema": "JAVA DEVELOPER", "pengajar": "RIKI ALDI PARI" }, "status": "sukses" }</pre>
3	GET LIST	<div>Req</div>

{{host}}/v1/idstar/training/list

GET	▼		{{host}}/v1/idstar/training/list	
Params	Authorization	Headers (9)	Body ●	Pre-request Script
<div><div></div> none <div></div> form-data <div></div> x-www-form-urlencoded <div></div> raw <div></div> binary</div>				
	KEY	VALUE		
<input checked="" type="checkbox"/>	page	0		
<input checked="" type="checkbox"/>	size	10		
	Key	Value		

RES

```
{
  "code": 200,
  "data": {
    "content": [
      {
        "created_date": "2023-02-09T13:53:11.603+0700",
        "updated_date": "2023-02-09T13:53:11.603+0700",
        "deleted_date": null,
        "id": 1,
        "tema": "JAVA DEVELOPER",
        "pengajar": "RIKI ALDI PARI"
      }
    ],
    "pageable": {
      "sort": {
        "empty": false,
        "sorted": true,
        "unsorted": false
      },
      "offset": 0,
      "pageNumber": 0,
      "pageSize": 10,
      "unpaged": false,
      "paged": true
    },
    "last": true,
    "totalElements": 1,
    "totalPages": 1,
    "size": 10,
    "number": 0,
    "sort": {
      "empty": false,
      "sorted": true,
```

		<pre> "unsorted": false }, "first": true, "numberOfElements": 1, "empty": false }, "status": "sukses" } }</pre>
4	GET ID {{host}}/v1/idstar/training/{{id}}	<div>REQ</div> <div>GET {{host}}/v1/idstar/training/1</div> <div>RES</div> <pre>{ "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "tema": "JAVA DEVELOPER", "pengajar": "RIKI ALDI PARI" }, "status": "sukses" }</pre>
5	DELETE {{host}}/v1/idstar/training/delete	<div>REQ</div> <div>DELETE {{host}}/v1/idstar/training/delete</div> <div>Params Authorization Headers (9) <u>Body</u> Pre-req</div> <div><input type="radio"/> none <input type="radio"/> form-data <input type="radio"/> x-www-form-urlencoded <input checked="" type="radio"/> raw</div> <div><pre>1 { 2 "id": 1 3 }</pre></div> <div>RES</div> <pre>{ "code": 200, "data": "Sukses", "status": "sukses" }</pre>

		}
--	--	---

4. Rest API Untuk KaryawanTraining

1	POST - {{host}}/v1/idstar/karyawan-training/save	<p>Req</p> <pre>{ "karyawan": { "id": "1" }, "training": { "id": "1" }, "tanggal": "2023-01-01 13:00:00" }</pre> <p>Res</p> <pre>{ "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "karyawan": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "nama": "syarini", "dob": "1996-01-01T00:00:00.000+00:00", "status": "active", "alamat": "jakarta", "detailKaryawan": { "created_date": "2023-02-09T13:53:11.564+0700", "updated_date": "2023-02-09T13:53:11.564+0700", "deleted_date": null, "id": 1, "nik": "123455", "npwp": "12345677" } }, "training": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "nama": "syarini", "dob": "1996-01-01T00:00:00.000+00:00", "status": "active", "alamat": "jakarta", "detailKaryawan": { "created_date": "2023-02-09T13:53:11.564+0700", "updated_date": "2023-02-09T13:53:11.564+0700", "deleted_date": null, "id": 1, "nik": "123455", "npwp": "12345677" } } } }</pre>
---	---	---

		<pre> "deleted_date": null, "id": 1, "tema": "JAVA DEVELOPER", "pengajar": "RIKI ALDI PARI" }, "tanggal": "2023-01-01 13:00:00" }, "status": "sukses" } </pre>
1	PUT - {{host}}/v1/idstar/karyawan-training/update	<div>REQ</div> <pre> { "id": 1, "karyawan": { "id": "1" }, "training": { "id": "1" }, "tanggal": "2023-01-01 13:00:00" } </pre> <div>RES</div> <pre> { "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "karyawan": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "nama": "syarini", "dob": "1996-01-01T00:00:00.000+00:00", "status": "active", "alamat": "jakarta", "detailKaryawan": { "created_date": "2023-02-09T13:53:11.564+0700", "updated_date": "2023-02-09T13:53:11.564+0700", "deleted_date": null, "id": 1, "nik": "123455", "npwp": "12345677" } } } } </pre>

```

    },
    "training": {
      "created_date": "2023-02-09T13:53:11.603+0700",
      "updated_date": "2023-02-09T13:53:11.603+0700",
      "deleted_date": null,
      "id": 1,
      "tema": "JAVA DEVELOPER",
      "pengajar": "RIKI ALDI PARI"
    },
    "tanggal": "2023-01-01 13:00:00"
  },
  "status": "sukses"
}

```

3 GET LIST
 {{host}}/v1/idstar/karyawan-
 training/list

Req

The screenshot shows a REST client interface with the following details:

- Method:** GET
- URL:** {{host}}/v1/idstar/karyawan-training/list
- Params:**

KEY	VALUE
<input checked="" type="checkbox"/> page	0
<input checked="" type="checkbox"/> size	10
Key	Value
- Body:** none (selected), form-data, x-www-form-urlencoded, raw, binary, Graph

RES

```

{
  "code": 200,
  "data": {
    "content": [
      {
        "created_date": "2023-02-09T13:53:11.603+0700",
        "updated_date": "2023-02-09T13:53:11.603+0700",
        "deleted_date": null,
        "id": 1,
        "karyawan": {
          "created_date": "2023-02-09T13:53:11.603+0700",
          "updated_date": "2023-02-09T13:53:11.603+0700",
          "deleted_date": null,
          "id": 1,
          "nama": "syarini",

```



```
        "dob": "1996-01-01T00:00:00.000+00:00",
        "status": "active",
        "alamat": "jakarta",
        "detailKaryawan": {
            "created_date": "2023-02-
09T13:53:11.564+0700",
            "updated_date": "2023-02-
09T13:53:11.564+0700",
            "deleted_date": null,
            "id": 1,
            "nik": "123455",
            "npwp": "12345677"
        },
        "training": {
            "created_date": "2023-02-
09T13:53:11.603+0700",
            "updated_date": "2023-02-
09T13:53:11.603+0700",
            "deleted_date": null,
            "id": 1,
            "tema": "JAVA DEVELOPER",
            "pengajar": "RIKI ALDI PARI"
        },
        "tanggal": "2023-01-01 13:00:00"
    },
    ],
    "pageable": {
        "sort": {
            "empty": false,
            "sorted": true,
            "unsorted": false
        },
        "offset": 0,
        "pageNumber": 0,
        "pageSize": 10,
        "unpaged": false,
        "paged": true
    },
    "last": true,
    "totalElements": 1,
    "totalPages": 1,
    "size": 10,
    "number": 0,
    "sort": {
        "empty": false,
        "sorted": true,
        "unsorted": false
    }
}
```

		<pre> }, "first": true, "numberOfElements": 1, "empty": false }, "status": "sukses" }</pre>
4	GET ID {{host}}/v1/idstar/karyawan-training/{id}	<div>REQ</div> <div><div>GET</div><div>▼</div><div>{{host}}/v1/idstar/karyawan-training/1</div></div> <div>RES</div> <pre>{ "code": 200, "data": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "karyawan": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "nama": "syarini", "dob": "1996-01-01T00:00:00.000+00:00", "status": "active", "alamat": "jakarta", "detailKaryawan": { "created_date": "2023-02-09T13:53:11.564+0700", "updated_date": "2023-02-09T13:53:11.564+0700", "deleted_date": null, "id": 1, "nik": "123455", "npwp": "12345677" } }, "training": { "created_date": "2023-02-09T13:53:11.603+0700", "updated_date": "2023-02-09T13:53:11.603+0700", "deleted_date": null, "id": 1, "tema": "JAVA DEVELOPER", </pre>

		<pre> "pengajar": "RIKI ALDI PARI" }, "tanggal": "2023-01-01 13:00:00" }, "status": "sukses" } </pre>
5	DELETE {{host}}/v1/idstar/karyawan-training/delete	<div> <div>REQ</div> <div> <div>DELETE ▾ {{host}}/v1/idstar/karyawan-training/delete</div> <div> <div>Params</div> <div>Authorization</div> <div>Headers (9)</div> <div>Body ●</div> <div>Pre-request Scri</div> </div> <div> <div>● none</div> <div>● form-data</div> <div>● x-www-form-urlencoded</div> <div>● raw</div> <div>● bin</div> </div> <div> <pre> 1 { 2 "id": 1 3 } </pre> </div> </div> </div> <div> <div>RES</div> <pre> { "code": 200, "data": "Sukses", "status": "sukses" } </pre> </div>

Pengumpulan

1. Output setiap rest api di postman wajib di capture dan dibuatkan dokumentasi di word.
2. File word disimpan di dalam project.
3. Collection postman wajib di simpan di dalam project
4. project push ke github, dan share ke tim terkait