

Getting Started

- [License](#)
- [Installation](#)
- [Project Structure](#)

Platform

- [Configuration](#)
- [Import Data](#)

Architecture

- [Spring MVC](#)
- [Application Layering](#)
- [Model Service](#)
- [Legacy Mode](#)

Development

- [Module Gen](#)
- [Module Attribute](#)
- [Datatable](#)
- [Dynamic Attributes](#)

# Documentation

## Beanframework

Thank you so much for using beanframework project. 100% open source project under MIT license.

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If you have any questions that are beyond the scope of this help file, Please feel free to post via [Github Discussion Page](#) .

## License

MIT License

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## Installation

Create a new database:

- By default, this project supported unicode character such as Chinese language, therefore the database must use CHARACTER SET utf8 COLLATE utf8\_unicode\_ci

```
CREATE SCHEMA `beanframework` DEFAULT CHARACTER SET utf8 COLLATE utf8_unicode_ci
```

- Configure project by copy and remove **.template** suffix:

- `beanframework/bin/ pom.xml.template`
- `beanframework/bin/install/ server.bat.template`
- `beanframework/bin/install/ server.sh.template`
- `beanframework/bin/platform/ pom.xml.template`
- `beanframework/config/ pom.xml.template`
- `beanframework/config/src/main/resources/ *.template`
- `beanframework/config/src/main/resources/import/dev.template`

Getting Started

License

Installation

Project Structure

Platform

Configuration

Import Data

Architecture

Spring MVC

Application Layering

Model Service

Legacy Mode

Development

Module Gen

Module Attribute

Datatable

Dynamic Attributes

- Optional: `beanframework/bin/install/` `app.xml.template`

3. Open command prompt and navigate to `beanframework/bin` directory run:

```
mvnw clean install
```

4. Navigate to `beanframework/bin/install` directory and run:

```
server.bat
```

5. Access application endpoints:

- Console: <http://localhost:8080/console>
- Backoffice: <http://localhost:8080/backoffice>
- Documentation: <http://localhost:8080/documentation>

6. Import update data:

- Access Console: <http://localhost:8080/console>
- Login with default admin account: username: **admin** , password: **admin**
- Goto menu `Platform->Update` , check all and update.

7. You are good to go for run your project now!

## Project Structure

1. Below is the `beanframework` folder structure:

- `bin` - Source files
  - `custom` - Create a custom modules and put in this folder, best practice for not mixing with original project structure and codes, and easily to upgrade software in future.
  - `install` - Install/Run application manually or install as windows service.
  - `modules` - Project default modules.
  - `platform` - Platform that startup this application with configured modules.
- `config` - Mainly use for application properties and configurations for different environments.
- `data` - Data storage for this application
  - `media` - All the media stored in this directory.
  - `integration` - Spring Integration. Can be used for import data.
- `log` - Application logging files, with archived and rotated logging files.
- `temp` - Application temporary files.

## Platform

Platform Configuration and Import Data

## Configuration

`beanframework/bin/config/src/main/resources/`

- Configure environment:
  - `application.properties`
    - `spring.profiles.active=dev`
- Configure configurations and import data for environment:

Getting Started

[License](#)

[Installation](#)

[Project Structure](#)

Platform

[Configuration](#)

[Import Data](#)

Architecture

[Spring MVC](#)

[Application Layering](#)

[Model Service](#)

[Legacy Mode](#)

Development

[Module Gen](#)

[Module Attribute](#)

[Datatable](#)

[Dynamic Attributes](#)

- `application-dev.properties` - Environment properties.
- `ehcache-dev.xml` - Cache configuration.
- `logback-dev.xml` - Logback configuration.
- `import/dev` - Contains data to import

## Import Data

`beanframework/bin/config/src/main/resources/import/`

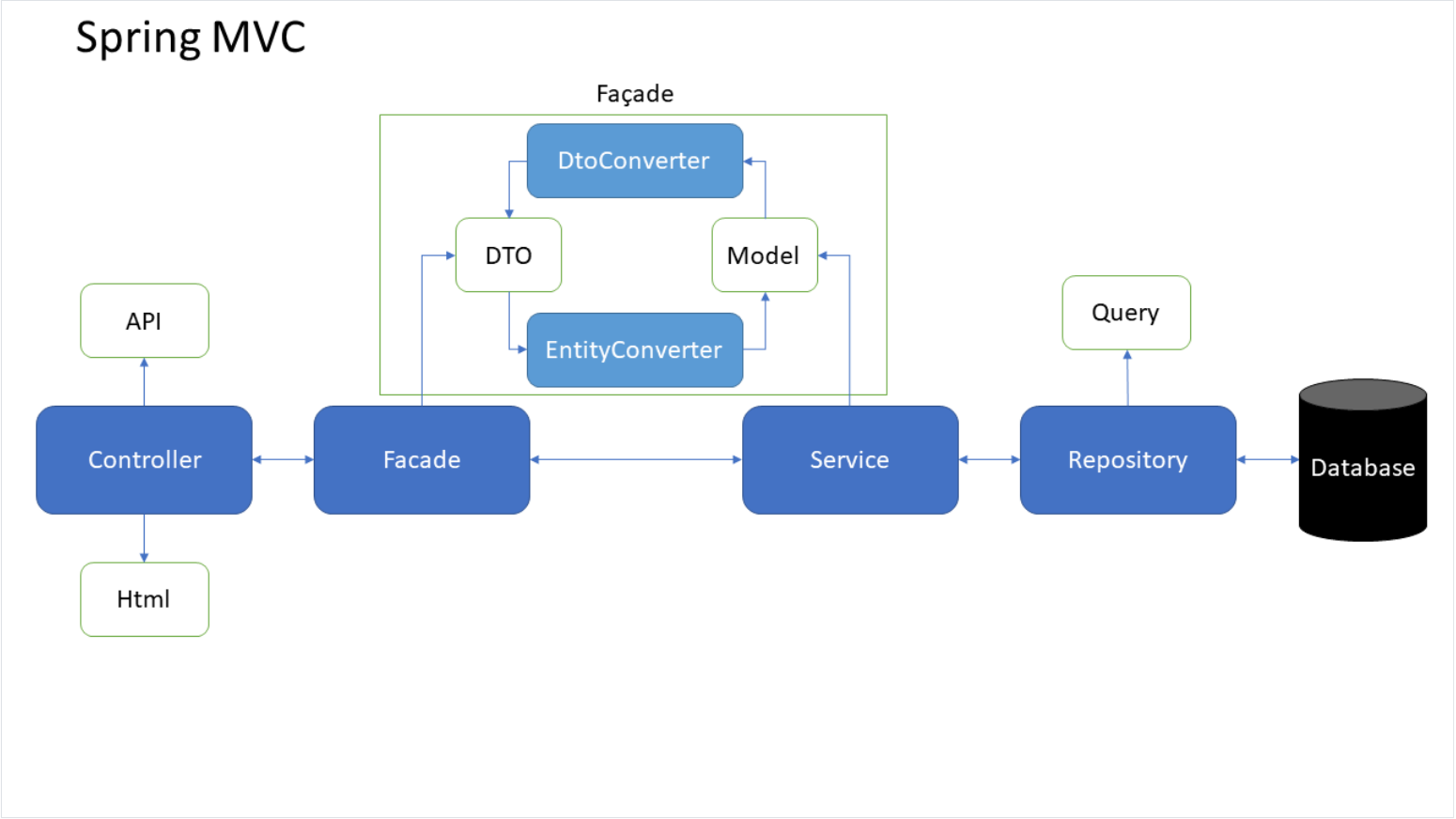
- `dev/initdata/**/*.csv` - Contains data to import every time when application startup.
  - `module.imex.import.init.locations=classpath*:import/dev/initdata/**/*.csv`
- `dev/initsql/**/*.sql` - Contains sql to execute every time when application startup.
  - `platform.import.startup.enabled=true`
  - `platform.import.sql.locations=classpath*:import/dev/initsql/**/*.sql`
- `dev/updatedata` - Contains data to import when manually performing platform update.
  - `module.imex.import.update.locations=classpath*:import/dev/updatedata`

## Architecture

Architecture for development

## Spring MVC

Design Pattern used in this platform.



## Application Layering

Spring application layers from the underlying platform.

Getting Started

[License](#)

[Installation](#)

[Project Structure](#)

Platform

[Configuration](#)

[Import Data](#)

Architecture

[Spring MVC](#)

[Application Layering](#)

[Model Service](#)

[Legacy Mode](#)

Development

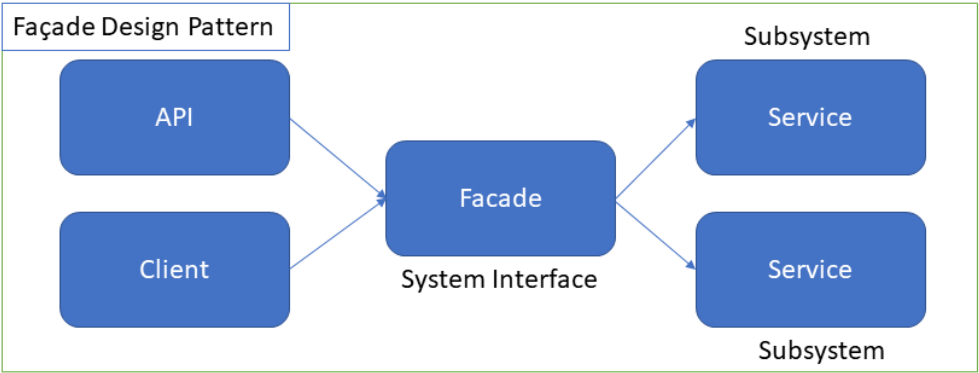
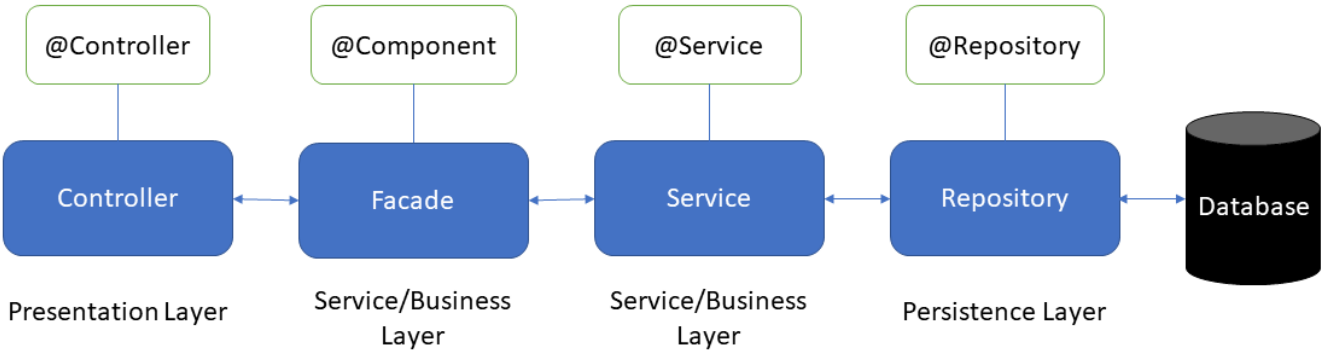
[Module Gen](#)

[Module Attribute](#)

[Datatable](#)

[Dynamic Attributes](#)

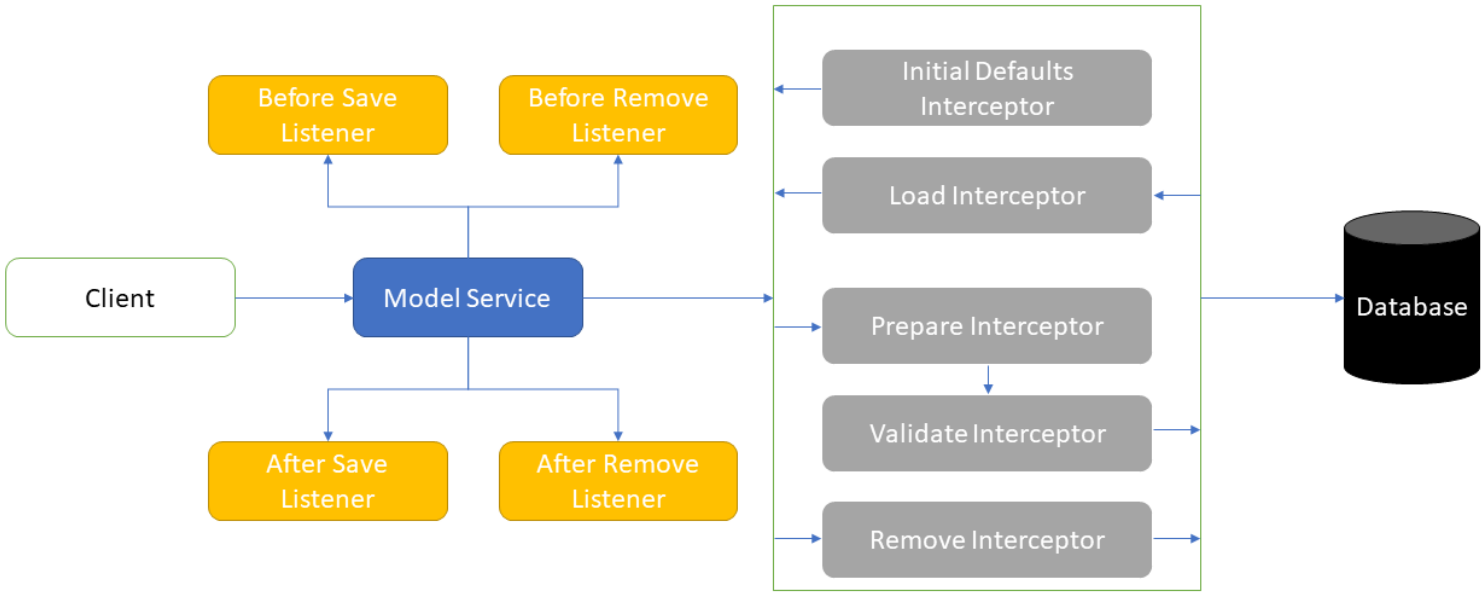
Application Layering



Model Service

Model's life cycle involving listeners and interceptors.

Model Service



Legacy Mode

Performing model service with legacy mode ignoring listeners and interceptors.

Getting Started

License

Installation

Project Structure

Platform

Configuration

Import Data

Architecture

Spring MVC

Application Layering

Model Service

Legacy Mode

Development

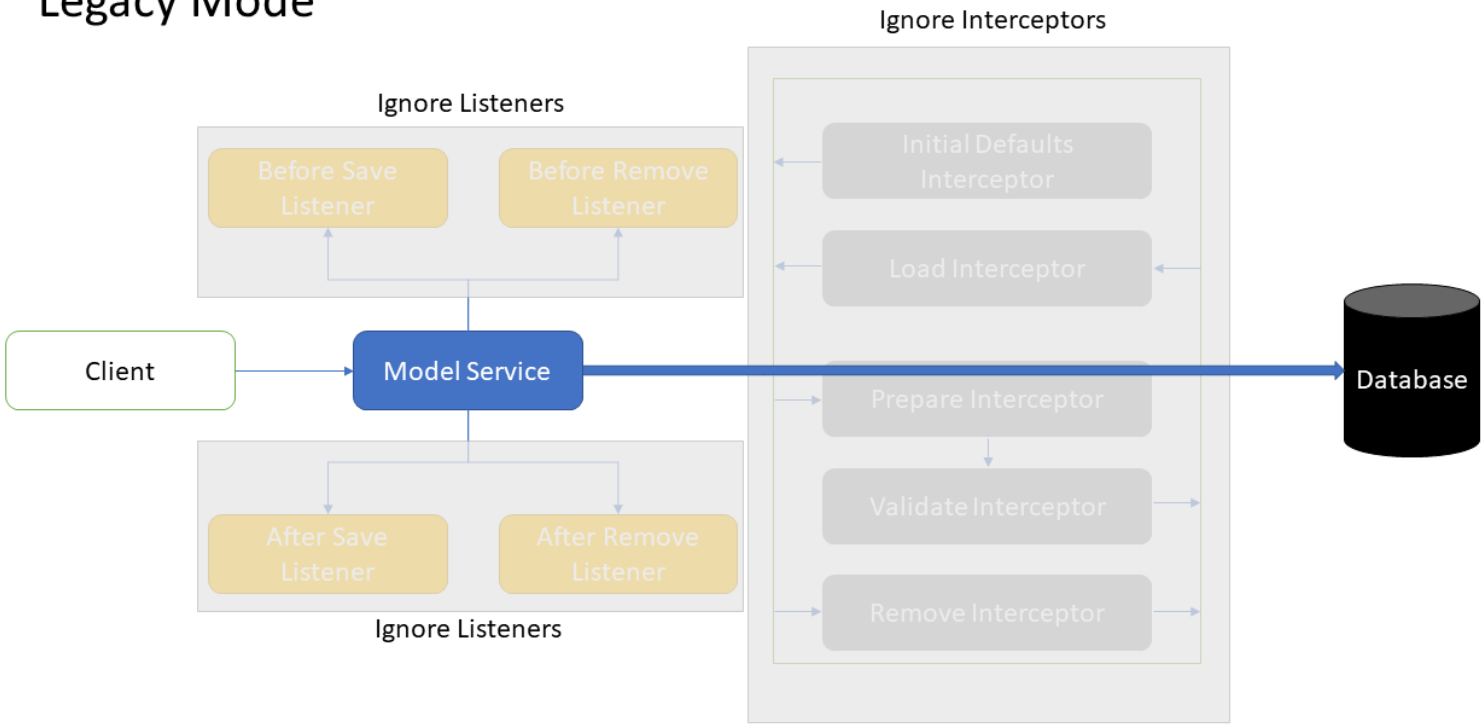
Module Gen

Module Attribute

Datatable

Dynamic Attributes

# Legacy Mode



## Development

Development guide for Spring Boot developer

## Module Gen

beanframework/bin/module/modulegen/

- Set module configuration `src/main/resources/application.properties`
- Run `src/main/java/com/beanframework/modulegen/ModulegenApplication.java`
- Generated module output: `beanframework/bin/module/custom/`

Configure new module in project:

- Add new module in `beanframework/bin/pom.xml`
- Add new dependency in `beanframework/config/pom.xml`
- Add new profile and packages in `beanframework/config/src/main/resources/application.properties`
  - `spring.profiles.include=platform,console,backoffice,documentation,training`
  - `spring.scanBasePackages=com.beanframework,com.sample`
  - `jpa.domain.packagetoscans=com.beanframework.*.domain,com.sample.*.domain`

## Model Attribute

Example of adding new attribute in Model

- `Training.java` - Add new attribute
- `TrainingDto.java` - Add new attribute
- `TrainingPopulator.java` - Add new attribute
- `TrainingEntityConverter.java` - Add new attribute
- `trainingForm.html` - Add new input

Getting Started

License

Installation

Project Structure

Platform

Configuration

Import Data

Architecture

Spring MVC

Application Layering

Model Service

Legacy Mode

Development

Module Gen

Module Attribute

Datatable

Dynamic Attributes

```
...

<div class="col-md-3">
    <div class="form-group">
        <label for="name" th:text="#{module.training.name}"></label>
        <input type="text" class="form-control" name="name" th:value="*{name}">
    </div>
</div>

...
```

# Datatable

Example of adding new column in datatable

- training.html - Add new attribute, for example "name":

```
...

<th:block th:insert=~{backoffice/adminlte/common/fragment/content-datatype :: datatable (title=#
{module.training}, tableId='trainingTable', columns=${#strings.arraySplit(id+', '+name, ',')},
selectAuthority=true )}></th:block>

...

<th:block th:insert=~{backoffice/adminlte/common/fragment/content-datatype :: js (tableId='trainingTable',
columns=${#strings.arraySplit('id,name', ',')}, pageUrl=@{${@environment.getProperty('path.api.training')}},
formUrl=@{${@environment.getProperty('path.training.form')}}, addAuthority=${addAuthority}, selectAuthority=true
)}></th:block>

...
```

- Training.java - Add new attribute, for example "name":

```
...

public Training(UUID uuid, String id, String name) {
    super();
    setUuid(uuid);
    setId(id);
    setName(name);
}

...
```

- TrainingSpecification.java - Add new attribute, for example "name":

Getting Started

[License](#)

[Installation](#)

[Project Structure](#)

Platform

[Configuration](#)

[Import Data](#)

Architecture

[Spring MVC](#)

[Application Layering](#)

[Model Service](#)

[Legacy Mode](#)

Development

[Module Gen](#)

[Module Attribute](#)

[Datatable](#)

[Dynamic Attributes](#)

```
...

@Override
public Predicate toPredicate(Root<T> root, CriteriaQuery<?> query, CriteriaBuilder cb) {
    List<Predicate> predicates = new ArrayList<Predicate>();

    String search = clean(dataTableRequest.getSearch());

    if (StringUtils.isNotBlank(search)) {
        predicates.add(cb.or(cb.like(root.get(TRAINING.ID), convertToLikePattern(search))));
        predicates.add(cb.or(cb.like(root.get(TRAINING.NAME), convertToLikePattern(search))));
    }

    if (predicates.isEmpty()) {
        return cb.and(predicates.toArray(new Predicate[predicates.size()]));
    } else {
        return cb.or(predicates.toArray(new Predicate[predicates.size()]));
    }
}
```

```
...

@Override
public List<Selection<?>> toSelection(Root<T> root) {
    List<Selection<?>> multiselect = new ArrayList<Selection<?>>();
    multiselect.add(root.get(Training.UUID));
    multiselect.add(root.get(Training.ID));
    multiselect.add(root.get(Training.NAME));
    return multiselect;
}

...
```

- [TrainingDataTableResponseData.java](#) - Add new property, for example "name"
- [TrainingResource.java](#) - Add new data, for example "name":

```
...

for (TrainingDto dto : pagination.getContent()) {

    TrainingDataTableResponseData data = new TrainingDataTableResponseData();
    data.setUuid(dto.getUuid().toString());
    data.setId(StringUtils.stripToEmpty(dto.getId()));
    data.setName(StringUtils.stripToEmpty(dto.getName()));
    dataTableResponse.getData().add(data);
}

...
```

## Dynamic Attributes

\*Please check example of dynamic attributes used in UserGroup module in project.

Example of creating Dynamic Field for a Training Model:

- Create/Reuse a new entry in DynamicField **name\_en**
- Create a new entry in DynamicFieldSlot **training\_name\_en**
- Create a new entry in DynamicFieldTemplate **training.dynamicfield.template**

Example of creating Attributes for a Training model:

- [TrainingAttribute.java](#) - Create new entity
- [Training.java](#) - Insert attributes property
- [TrainingAttributeDto.java](#) - Insert attributes property

Getting Started

[License](#)

[Installation](#)

[Project Structure](#)

Platform

[Configuration](#)

[Import Data](#)

Architecture

[Spring MVC](#)

[Application Layering](#)

[Model Service](#)

[Legacy Mode](#)

Development

[Module Gen](#)

[Module Attribute](#)

[Datatable](#)

[Dynamic Attributes](#)

- `TrainingDto.java` - Insert attributes property
- `TrainingPopulator.java` - Insert attributes property
- `TrainingEntityConvTraining.java` - Insert attributes property
- `TrainingServiceImpl.java` - Create generateTrainingAttribute(...)
- `TrainingLoadInterceptor.java` - Insert trainingService.generateTrainingAttribute(...)
- `TrainingInitialDefaultsInterceptor.java` - Insert trainingService.generateTrainingAttribute(...)
- `trainingForm.html` - Insert:

```
...  
  
<li class="nav-item">  
  <a class="nav-link" id="custom-tabs-attribute-tab" data-toggle="pill" href="#custom-tabs-attribute"  
  role="tab" aria-controls="custom-tabs-attribute" aria-selected="false" th:text="#{module.common.attribute}"></a>  
</li>  
  
...  
  
<div class="tab-pane fade" id="custom-tabs-attribute" role="tabpanel" aria-labelledby="custom-tabs-attribute-  
tab">  
  <th:block th:insert=~{backoffice/adminlte/common/fragment/content-form-attribute :: form(attributes=*  
{attributes})}></th:block>  
</div>  
  
...
```