Industry 5.0 RESTful API Documentation

API Version: 1.0 (OpenAPI 3.1)

Installation

To install locally the API, clone the repository and install the dependencies using pip:

```
git clone https://github.com/sa-team-d/api.git
cd api
pip install -r requirements.txt
```

Usage

To start the API locally, run the following command:

```
uvicorn main:app --reload
```

or use the FastAPI command for development:

```
fastapi dev main.py
```

The API will be available at `http://localhost:8000/api/<api-version>` .

Documentation

The API documentation is available at `http://localhost:8000/api/<api-version>/docs` as a Swagger UI interface. The documentation provides information about the available endpoints, request and response formats, and examples. For an alternative view, the API documentation is also available at `http://localhost:8000/api/<api-version>/redoc` .

Plugins

The API is organized in plugins, each containing a set of endpoints related to a specific functionality. The available plugins are:

- `kpi` : Get all KPIs available, filter KPIs by name, and set thresholds
- `machine` : Get all machines, filter machines by category, and get machine details
- `user` : Users management
- `report` : Generate and manage reports

API Endpoints

General Endpoints

Redirect to Swagger Docs

- **Endpoint**: `/docs`
- **Method**: `GET`
- **Description**: Redirects to the Swagger UI documentation page.
- **Response Codes**:
  - `200` : Successful redirection.

Redirect to ReDoc Docs

- **Endpoint**: `/redoc`
- **Method**: `GET`
- **Description**: Redirects to the ReDoc documentation page.
- **Response Codes**:
  - `200` : Successful redirection.

Machine Endpoints

Get All Machines

- **Endpoint**: `/api/v1.0/machine/`

- **Method**: `GET`
- **Description**: Retrieves all machines in the dataset.
- **Response Codes**:
  - `200` : Successfully retrieved machine list.

Filter Machines by Type or Name

- **Endpoint**: `/api/v1.0/machine/filter`
- **Method**: `POST`
- **Description**: Filters machines based on `machine_name` or `machine_type` .
- **Parameters**:
  - `machine_name` (string, query): Name of the machine.
  - `machine_type` (string, query): Type of the machine.
- **Response Codes**:
  - `201` : Filter successful.
  - `422` : Validation error.

Get Machine by ID

- **Endpoint**: `/api/v1.0/machine/{machine_id}`
- **Method**: `GET`
- **Description**: Retrieves details of a machine by its ID.
- **Response Codes**:
  - `200` : Machine details retrieved.

User Endpoints

Authenticate User

- **Endpoint**: `/api/v1.0/user/login`
- **Method**: `POST`
- **Description**: Authenticates a user and returns an ID token.
- **Parameters**:
  - `email` (string, query): User's email.
  - `password` (string, query): User's password.

- **Response Codes**:
  - `200` : Authentication successful.
  - `422` : Validation error.

List Users

- **Endpoint**: `/api/v1.0/user/list`
- **Method**: `GET`
- **Description**: Lists all users.
- **Response Codes**:
  - `200` : User list retrieved.

Filter Users by Name or Email

- **Endpoint**: `/api/v1.0/user/filter`
- **Method**: `POST`
- **Description**: Filters users based on `first_name` , `last_name` , or `email` .
- **Parameters**:
  - `first_name` (string, query): First name filter.
  - `last_name` (string, query): Last name filter.
  - `email` (string, query): Email filter.
- **Response Codes**:
  - `200` : Filter successful.
  - `422` : Validation error.

KPI Endpoints

Get All KPIs

- **Endpoint**: `/api/v1.0/kpi/`
- **Method**: `GET`
- **Description**: Retrieves all KPIs.
- **Response Codes**:
  - `200` : KPI list retrieved.

Filter KPIs

- **Endpoint**: `/api/v1.0/kpi/filter`
- **Method**: `GET`
- **Description**: Filters KPIs by `kpi_name`, `start_date`, `end_date`, and `site_name`.
- **Parameters**:
    - `kpi_name` (string, query): Name of the KPI.
    - `start_date` (string, query): Start date.
    - `end_date` (string, query): End date.
    - `site_name` (string, query): Name of the site.
- **Response Codes**:
    - `200`: Filter successful.
    - `422`: Validation error.

Set KPI Threshold

- **Endpoint**: `/api/v1.0/kpi/threshold/`
- **Method**: `POST`
- **Description**: Sets a threshold value for a specified KPI.
- **Parameters**:
    - `kpi_name` (string, query): KPI name.
    - `threshold` (number, query): Threshold value.
- **Response Codes**:
    - `201`: Threshold set successfully.
    - `422`: Validation error.

Report Endpoints

Create Report

- **Endpoint**: `/api/v1.0/report/`
- **Method**: `POST`
- **Description**: Creates and saves a new report in the database.
- **Parameters**:

- ◦ `name` (string, query): Report name.
- ◦ `site` (string, query): Site associated with the report.
- ◦ `kpi` (string, query): KPI associated with the report.
- ◦ `frequency` (string, query): Frequency of the report.
- **Response Codes**:
  - ◦ `201` : Report created successfully.
  - ◦ `422` : Validation error.

Get Reports by Site

- **Endpoint**: `/api/v1.0/report/filter`
- **Method**: `GET`
- **Description**: Retrieves all reports for a specific site.
- **Parameters**:
  - ◦ `site` (string, query): Name of the site.
- **Response Codes**:
  - ◦ `200` : Reports retrieved.
  - ◦ `422` : Validation error.

Authentication & Security

The Industry 5.0 API relies on Firebase for handling authentication, ensuring secure access to endpoints based on user credentials and permissions.

Contact

For any questions or issues, please contact the project maintainers:

- Leonardo Stoppani
- Oleksiy Nedobiychuk