Waste management system Backend

Getting Started

Installing Dependencies

####python3.7

we are using python as a backend language

Follow instructions to install the latest version of python for your platform in the [python docs](https://docs.python.org/3/using/unix.html#getting-and-installing-the-latest-version-of-python)

Windows

[python3.7](https://www.python.org/downloads/windows/)

virtual environment

We recommend working within a virtual environment whenever using Python for projects. This keeps your dependencies for each project separate and organaized. Instructions for setting up a virual enviornment for your platform can be found in the python docs

PIP Dependencies

Once you have your virtual environment setup and running, install dependencies by navigating to the `/backend` directory and running:

```shell script

pip install -r requirements.txt

```

This will install all of the required packages we selected within the `requirements.txt` file.

key dependencies

- [Flask](https://flask.palletsprojects.com/en/1.1.x/)

- [SQLALCHEMY](https://www.sqlalchemy.org/)

- [Flask-CORS](https://flask-cors.readthedocs.io/)

Setup Database

Running the Server

API References

Getting Started

Error Handling

Endpoints

GET /areas

- ##### General

  * Return a list of areas objects and number of total areas

- ##### Sample

  * Request

  ```shell script
  curl https://wastes-management.herokuapp.com/api/areas
  ```

  * Response

  ```json
  {
    "areas": [
      {
        "area_code": 22,
        "area_name": "الحي الثاني",
        "area_size": 100.0,
        "city": "مدينة الشروق",
        "latitude": "342342",
        "longitude": "42342"
      },
      {
        "area_code": 33,
        "area_name": "الحي الثالث",
        "area_size": 100.0,
        "city": "مدينة الشروق",
        "latitude": "45345",
        "longitude": "423"
      },
      {
        "area_code": 44,
        "area_name": "الحي الرابع",
  ```

```
            "area_size": 120.0,
            "city": "مدينة الشروق",
            "latitude": "45344635",
            "longitude": "423423"
        }
    ],
    "total_areas": 3
}
```


GET /areas/{area_code}

- ##### General
  * Return a specific area object by area code
- ##### Sample
  * Request
  ```shell script
  curl https://wastes-management.herokuapp.com/api/areas/22
  ```
  * Response

  ```json
  {
    "area": {
        "area_code": 22,
        "area_name": "الحي الثاني",
        "area_size": 100.0,
        "city": "مدينة الشروق",
        "latitude": "342342",
        "longitude": "42342"
    }
  }
  ```


GET /areas/{area_code}/baskets

- ##### General

  * Return a list of baskets objects based on a specific area,

  * The object that return include list of baskets, total number of basket in this area

- ##### Sample

  * Request

  ```shell script
  curl https://wastes-management.herokuapp.com/api/areas/22/baskets
  ```

  * Response

  ```json
  {
     "baskets": [
        {
           "basket_height": 90,
           "basket_length": 40,
           "basket_width": 40,
           "id": 6,
           "latitude": "534535534",
           "level": "0%",
           "longitude": "435345",
           "software_version": "v2.0"
        },
        {
           "basket_height": 90,
           "basket_length": 40,
           "basket_width": 40,
           "id": 7,
           "latitude": "5345345",
           "level": "0%",
  ```

```
            "longitude": "5345",
            "software_version": "v2.0"
        },
        {
            "basket_height": 90,
            "basket_length": 40,
            "basket_width": 40,
            "id": 5,
            "latitude": "534534",
            "level": "83%",
            "longitude": "534534534",
            "software_version": "v2.0"
        }
    ],
    "total_baskets": 3
}
```


GET /areas/{area_code}/users

- ##### General
  * Return a list of users objects based on a specific area,
  * The object that return include list of users, total number of users in this area
- ##### Sample
  * Request

  ```shell script
  curl https://wastes-management.herokuapp.com/api/areas/22/users
  ```

  * Response


  ```json
  {
      "total_users": 0,
  ```


"users": []

}

```

#### POST /areas

- #####General

* Insert new area in the system using the submitted longitude, latitude and area code

* Return success message and area object if created successfully

- #####Sample

* Request

```shell script

curl -X POST https://wastes-management.herokuapp.com/api/areas -H "Content-Type: application/json" -d '{ "area_code": 33, "longitude": 4234432, "latitude": 324242 }'

```

* Response

```json

{

"area": {

"area_code": 55,

"area_name": "الحي الخامس",

"area_size": 100.0,

"city": "مدينة الشروق",

"latitude": "43424",

"longitude": "423434"

},

"success": true

}

```

Get /baskets

- ##### General
```

  * Return a list of baskets objects and number of total basket

- ##### Sample

  * Request

  ```shell script
  curl https://wastes-management.herokuapp.com/api/baskets
  ```

  * Response

  ```json
  {
    "baskets": [
      {
        "basket_height": 90,
        "basket_length": 40,
        "basket_width": 40,
        "id": 1,
        "latitude": "42342423",
        "level": "33%",
        "longitude": "534534534",
        "software_version": "v1.0"
      },
      {
        "basket_height": 90,
        "basket_length": 40,
        "basket_width": 40,
        "id": 2,
        "latitude": "345353535",
        "level": "44%",
        "longitude": "53453453",
        "software_version": "v1.0"
      },
      {
  ```

```
            "basket_height": 90,
            "basket_length": 40,
            "basket_width": 40,
            "id": 3,
            "latitude": "34535345",
            "level": "88%",
            "longitude": "545353",
            "software_version": "v1.0"
        }
    ],
    "total_baskets": 9
}
```


Get /baskets/{basket_id}

- ##### General
  * return a specific basket by id
- ##### Sample
  * Request

  ```shell script
  curl https://wastes-management.herokuapp.com/api/baskets/1
  ```

  * Response


  ```json
  {
      "basket": {
          "basket_height": 90,
          "basket_length": 40,
          "basket_width": 40,
          "id": 1,
          "latitude": "42342423",
          "level": "33%",
  ```


"longitude": "534534534",

"software_version": "v1.0"

}

}

```

#### GET /baskets/{basket_id}/wastes

- #####General

* Return a list of wastes object based on a specific basket,

* the object that return include basket id, wastes, total size of wastes that generated by this basket

- #####Sample

* Request

```shell script

curl https://wastes-management.herokuapp.com/api/baskets/1/wastes

```

* Response

```json

{

"basket_id": 1,

"total_size": 0.048,

"wastes": [

{

"basket_id": 1,

"date_of_creation": "Mon, 25 Jan 2021 18:42:35 GMT",

"size": 0.016,

"type": "bio"

},

{

"basket_id": 1,

"date_of_creation": "Mon, 25 Jan 2021 18:42:46 GMT",

```
            "size": 0.016,
            "type": "bio"
        },
        {
            "basket_id": 1,
            "date_of_creation": "Mon, 25 Jan 2021 18:42:50 GMT",
            "size": 0.016,
            "type": "bio"
        }
    ]
}
```

POST /baskets

- #####General

    * Create new basket using the submitted longitude, latitude and area code

    * you can set basket height, width, length, version manually,

    * Return success message and basket object if created successfully

- #####Sample

    * Request

    ```shell script
    curl -X POST https://wastes-management.herokuapp.com/api/baskets -H "Content-Type: application/json" -d '{ "area_code": 33, "longitude": 4234432, "latitude": 324242 }'
    ```

    ```shell script
    curl -X POST https://wastes-management.herokuapp.com/api/baskets -H "Content-Type: application/json" -d '{ "area_code": 33, "longitude": 4234432, "latitude": 324242, "basket_height: 120, "basket_width": 50, "basket_length": 50, "basket_version": "v4.0" }'
    ```

    * Response

    ```json
    {
    ```

```
    "basket": {
      "basket_height": 90,
      "basket_length": 40,
      "basket_width": 40,
      "id": 10,
      "latitude": "324242",
      "level": "0%",
      "longitude": "4234432",
      "software_version": "v1.0"
    },
    "success": true
  }
  ```

PATCH /baskets

- #####General
  * Update the basket software version
  * Return the number of updated baskets
- #####Sample
  * Request
  ```shell script
  curl -X PATCH https://wastes-management.herokuapp.com/api/baskets -H "Content-Type: application/json" -d '{ "software_version": "V2.0"}'
  ```
  * Response
  ```json
  {
    "baskets_update": 10
  }
  ```

PATCH /baskets/{basket_id}

- #####General

    * Update basket level by submitted basket level

    * Return success message

- #####Sample

    * Request

    ```shell script

    curl -X PATCH https://wastes-management.herokuapp.com/api/baskets/1 -H "Content-Type: application/json" -d '{ "level": 0}'

    ```

    * Response

    ```json

    {

       "success": true

    }

    ```

DELETE /baskets/{basket_id}

- #####General

    * Update the basket software version

    * Return the number of updated baskets

- #####Sample

    * Request

    ```shell script

    curl -X DELETE https://wastes-management.herokuapp.com/api/baskets/1

    ```

    * Response

    ```json

    {

       "success": true

    }

    ```

GET /users

- ##### General

  * Return a list of user object

- ##### Sample

  * Request

  ```shell script
  curl https://wastes-management.herokuapp.com/api/users
  ```

  * Response

  ```json
  {
    "user": [
      {
        "Date_of_birth": null,
        "email": "ahemdhostam@gamil.com",
        "first_name": "ahemd",
        "gender": "male",
        "last_name": "hosam",
        "user_name": "ahmed"
      },
      {
        "Date_of_birth": null,
        "email": "mahmoudamr@gamil.com",
        "first_name": "mahmoud",
        "gender": "male",
        "last_name": "amr",
        "user_name": "mahmoud2"
      },
      {
        "Date_of_birth": null,
        "email": "ahemd.esmail@gamil.com",
        "first_name": "ahmed",
  ```

```
            "gender": "male",
            "last_name": "esmail",
            "user_name": "ahmed2"
        }
    ]
}
```

GET /users/{user_name}

- ##### General
    * Return specific user object based on user_name
- ##### Sample
    * Request
    ```shell script
    curl https://wastes-management.herokuapp.com/api/users/meladsamuel
    ```
    * Response

GET /users

- ##### General
    * Create new user by submitted user name, first name, last name, email, password, gender
    * Return success message and user object
- ##### Sample
    * Request
    ```shell script
    curl -X POST https://wastes-management.herokuapp.com/api/users -H "Content-Type: application/json" -d '{ "user_name": "ali", "first_name": "ali", "last_name": "emad", "email": "ali.emad@gamil.com", "password":"123", "gender": "male", "area_code": 22 }  ```
    * Response
    ```json
    {
        "success":true,

```
      "user": {
         "Date_of_birth":null,
         "email":"ali.emad@gamil.com",
         "first_name":"ali",
         "gender":"male",
         "last_name":"emad",
         "user_name":"ali"
      }
   }
```


GET /vehicles

- ##### General
  * Return a list of vehicles objects
- ##### Sample
  * Request

  ```shell script
  curl https://wastes-management.herokuapp.com/api/vehicles
  ```

  * Response

  ```json


  ```

GET /vehicles/{plate_number}

- ##### General
  * Return a list of vehicles objects
- ##### Sample
  * Request

  ```shell script
  curl https://wastes-management.herokuapp.com/api/vehicles
  ```

  * Response

```json

```

POST /vehicles

- ##### General

  * Insert new vehicles in the system by submitted plate number, container size, tank size, employee ssn

  * Return success message and list of vehicles object

- ##### Sample

  * Request

  ```shell script

  curl -X POST https://wastes-management.herokuapp.com/api/vehicles -H "Content-Type: application/json" -d '{"plate_number": 543, "container_size": 6.0, "tank_size": 100.0, "employee_ssn": 29854364445354}'

  ```

  * Response

  ```json

  {

    "success": true,

    "vehicle": [

      {

        "container_size": 6.0,

        "driver": {

          "SSN": 29854364445354,

          "date_of_birth": "Sun, 11 Oct 1998 00:00:00 GMT",

          "full_name": "مصطفي صابر محمد",

          "phone": "011432523482",

          "user_name": "mostafa"

        },

        "plate_number": 543,

        "tank_level": null,

        "tank_size": 100.0
  ```

```
    }
  ]
}
```