Employee Management System Functionality Documentation

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Application Overview

The Employee Management System (EMS) is a comprehensive web application built with Flask and PostgreSQL that allows line managers to maintain employee details and provide feedback throughout the year. The system provides full CRUD operations for employee data management, feedback tracking, and reporting.

The application is organized with a modular structure, separating concerns into different components: authentication, employee management, feedback system, and utility functions.

Key Functionalities

Authentication System

The authentication system handles user login, logout, and profile management with the following features:

- User login with username and password

- Role-based access control (manager vs. employee)

- Profile management

- Password security using bcrypt hashing

Key Classes/Functions:

- `User` model in models.py

- `login(), logout(), profile()` functions in auth.py

Authentication Screenshots

Login Page

[Login Page Screenshot]

User Profile Page

[Profile Page Screenshot]

Employee Management

The employee management module handles all operations related to employee data:

- Dashboard overview of team and statistics

- Employee listing with sorting and filtering

- Employee details view

- Create, update, and delete employee records

Key Classes/Functions:

- `Employee` model in models.py

- `dashboard(), employee_list(), create_employee()` functions in employee.py

Dashboard

[Dashboard Screenshot]

Employee List

[Employee List Screenshot]

Employee Details

[Employee Details Screenshot]

Feedback System

The feedback system allows managers to provide structured feedback to their reportees:

- Create quarterly feedback with ratings and comments

- View feedback history for each employee

- Edit and delete feedback

Key Classes/Functions:

- `Feedback` model in models.py

- `feedback_list()`, `create_feedback()` functions in feedback.py

Feedback System Screenshots

Feedback List

[Feedback List Screenshot]

Create Feedback

[Create Feedback Screenshot]

Import/Export Functionality

The import/export module enables data exchange with Excel spreadsheets:

- Import employee data from Excel (manager_toolkit.xlsx)

- Export employee data to Excel format

Key Classes/Functions:

- `import_export()` function in employee.py

- `export_employees_to_excel()` function in utils.py

Import/Export Screenshots

Import/Export Interface

[Import/Export Screenshot]

Module Details

models.py - Data Models

No documentation available.

Classes:

User

User model for authentication and authorization

Methods:

set_password(self, password)

No documentation available.

check_password(self, password)

No documentation available.

Employee

Employee model to store employee details

Methods:

No methods defined in this class.

Feedback

Feedback model to store manager feedback for employees

Methods:

No methods defined in this class.

Functions:

No functions defined in this module.

auth.py - Authentication Module

No documentation available.

Classes:

No classes defined in this module.

Functions:

login()

No documentation available.

logout()

No documentation available.

profile()

No documentation available.

create_initial_users()

No documentation available.

employee.py - Employee Management Module

```
No documentation available.
```

Classes:

No classes defined in this module.

Functions:

dashboard()

```
No documentation available.
```

employee_list()

```
No documentation available.
```

employee_detail(employee_id)

```
No documentation available.
```

create_employee()

```
No documentation available.
```

edit_employee(employee_id)

```
No documentation available.
```

delete_employee(employee_id)

```
No documentation available.
```

import_export()

```
No documentation available.
```

feedback.py - Feedback System Module

```
No documentation available.
```

Classes:

No classes defined in this module.

Functions:

feedback_list()

```
No documentation available.
```

employee_feedback(employee_id)

```
No documentation available.
```

create_feedback(employee_id)

```
No documentation available.
```

edit_feedback(feedback_id)

```
No documentation available.
```

delete_feedback(feedback_id)

```
No documentation available.
```

utils.py - Utility Functions

No documentation available.

Classes:

No classes defined in this module.

Functions:

require_manager(f)

Decorator to require manager role for a view

get_current_quarter()

Get the current quarter in format 'Q1-YYYY'

export_employees_to_excel()

Export employee data to Excel

Usage Guide

Setup and Installation

1. Extract the ZIP file to a local directory

2. Create a Python virtual environment: `python -m venv venv`

3. Activate the virtual environment:

   - Windows: `venv\Scripts\activate`

   - Linux/Mac: `source venv/bin/activate`

4. Install dependencies: `pip install flask flask-login flask-sqlalchemy gunicorn openpyxl pandas psycopg2-binary pygments sqlalchemy werkzeug xhtml2pdf`

5. Configure database connection: `export DATABASE_URL="postgresql://username:password@localhost:5432/employee_management"`

6. Run the application: `gunicorn --bind 0.0.0.0:5000 main:app`

Initial Setup

1. Navigate to `http://localhost:5000` in your browser

2. Click "Initialize system" to create admin user

3. Log in with username "admin" and password "admin123"

4. Change the default password immediately

Using the Application

1. Import employee data via the Import/Export section

2. Add, edit, or delete employees as needed

3. Provide feedback to employees on a quarterly basis

4. Use the dashboard to monitor employee performance