FEAS – Fire Evacuation Automation System

# Application Screen and corresponding program details

# Overview:

**The application can be downloaded from:**

* GitHub: [tahiriqbal70/FEAS: Fire Evacuation Automation System](https://github.com/tahiriqbal70/FEAS)
* PYPI: [FEAS · PyPI](https://pypi.org/project/FEAS/)
* Main Module: FEAS.PY

This project module is based on a hypothetical warehouse with the following characteristics:

1. The building has four floors.
2. Each floor has four sides where employees are working.
3. Each floor has a floor manager, supervisor, and a team responsible for running the floor.
4. There are multiple exits on the first floor, located on all four sides of the building.
5. Each floor has several stairways connecting it to the other floors, with these stairways situated on all four sides.
6. Every floor has at least three large screens with speakers, placed at the corners and in the middle of each side.
7. The screens display four types of messages: informative, administrative, general, and emergency.

This module outlines a hypothetical work environment where the nature of the job allows employees to have electronic devices such as monitors, handheld devices, and laptops or tablets, which are connected to the company's internet and intranet.

Password to Login:

**Username and Password - admin/password123**

**Description**: This program enables the administrator to access the FEAS application. Now, the usernames and passwords are pre-configured for development and testing requirements.

A screenshot of a computer

Description automatically generated

Main Menu:

**Description:** This will be the initial and main screen that appears after you enter the authorized username and password to access the system. It organizes your activities into four subcategories, and the Exit button will log you out of the system.

FEAS.PY

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# House Keeping Menu:

* Company Setup – FCompany.py
* Fire Exits - FListExits.py
* Admin Users - FsysAdmin.py

**Description:** Housekeeping offers a variety of programs like setting up company information for the application.

**Company Setup:** This feature in the housekeeping menu enables us to configure information that can later be utilized to generate logs for events, as well as phone numbers and addresses, to automate emergency calls to the relevant departments when necessary.

House Keeping->FCompany.py

A screenshot of a company profile

Description automatically generated

**Fire Exits Management:** This program in housekeeping lets the system view and edit our imaginary module of the warehouse which has four floors, and each floor has four sides. where there is a warehouse. In the event, that some exit door is out of order, its inspection date is due within 30 days, or already expired. The record will show in red color, if all is good, then the record will show in green. Double click will you edit any record and the save button will update the record in the database.

House Keeping->FListExits.py

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**System Administrator:** It’s a future possible extension of the system when you can add power administrators who are authorized to do admin jobs with passwords.

House Keeping->FSysAdmin.py

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**Database Documentation:** This module in housekeeping lets the administrator see the information regarding the database and its storage table.

House Keeping-> FDBStructure.py ->Create database\_documentation.mdA screenshot of a computer program

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# Floor Information:

* Floor Status – FFlrReport.py
* Floor Details – FflrDetails2.py

**Floor and Floor Side Current Status:** The text outlines all the floors and the four sides of each floor, along with the status of Fire, Heat, and Smoke. The status is represented by numerical codes, where '00' indicates the sensor data is normal, and '01' represents abnormal data with a red background.

Floor Information->FFlrReport.py

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**Floor Information:** The application administrator can select any floor and view the current number of employees working on each side of that floor. Furthermore, the application also furnishes information about the floor manager and supervisor.

Floor Information->FFlrDetails2.py

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# Fire Evacuation:

* Message Broadcasting – FBCasting.py
* General Broadcasting – FBCast.py
* Sensors Monitor – FMsgType.py
* System Message Type – FsensorMon.py
* Exit Procedures – FexitProc.py

**Floor and Floor Sides Current Status:** The system allows application administrators to choose the type of message they want to transmit throughout the facility. In an emergency, they can interrupt normal broadcasts and send a new message. Depending on the message, it will trigger a set of predefined actions, including sending emergency notifications to floor managers and supervisors based on the emergency location, providing alternative evacuation routes to guide employees out of the building, broadcasting directly to employees and active stations/devices, turning on emergency exit lights, making outbound calls to emergency response units, and creating a log of the event.

Fire Evacuation->FBCasting.py

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**System Messages:** These messages will be displayed on the large screens located throughout the company's floors and areas. The messages will be shown in a rotating sequence, with each one appearing for a set duration before automatically transitioning to the next. Additionally, in the event of an emergency, the messages will also be converted to audio and played through the speakers.

Fire Evacuation->FBCast.py

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**Fire, Heat, and Smoke Monitoring:** This section of the application enables the administrator to access the facility's sensor data. This data is generated by sensors or machine learning models and is used to update text files at predetermined time intervals. These text files are then utilized by the module to provide the administrator with real-time updates at five-second intervals.

Fire Evacuation->FSensorMon.py

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**System Messages Type:** The FEAS application continues to broadcast different types of messages. These categories of messages can be controlled, viewed, and created on this screen.

Fire Evacuation->FMsgType.py

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**Exit Procedures:** This module is an introductory stage; it will be linked to the database and obtain exit strategies in a more structured manner. It is simply a demonstration of the feature to showcase the significant impact it can have in the process of emergency exit for load balancing during peak demand, by utilizing all the available different options to maximize a fast and seamless exit.

Fire Evacuation->FExitProc.py

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# Logs and Reports:

* Find Employees – FFindEmp.py
* Exit Inspection/Status Report – FExitRep.py

**Description:** This Menu will generate numerous reports and system logs based on the expansion of the system. Currently, it is only displaying a limited number of options.

**Finding Employee:** This module helps application administrators find employee and their contact information, in case of emergency.

Logs and Reports->FFindEmp.py

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Description automatically generated

**Exit Inspection/Status Report:** This module provides administrators with the ability to monitor the locations, status, and inspection dates of all exit doors. The data is displayed in a color-coded format, where green represents a valid status, and red indicates either an inactive exit door or an expired door inspection (either the inspection has already expired, or it is set to expire within the next 30 days).

Logs and Reports->Exit Inspection/Status Report – FExitRep.py

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