**Machine Status Tracker Application Documentation**

**Overview**

The Machine Status Tracker application is designed to track the status of machines in a manufacturing factory. It provides functionality to view, add, update, and delete machine.

Each machine includes details such as machine name, description, operational status, and any relevant notes. The application offers a user-friendly interface with options to display machine either as a list or as cards.

**Features Implemented**

1. **Display Machine**: View a list of machines with their details including name, description, status, and notes.
2. **Add Machine**: Add new machine with required details such as name, and status.
3. **Edit Machine**: Modify existing machine including name, description, status, and notes.
4. **Delete Machine**: Remove machines from the list.
5. **Filter by Status**: Filter machines based on their operational status (e.g., running, idle, offline).
6. **Display as Cards**: Toggle between displaying machine as a list or as cards with visual representations.

**Assumptions Made**

1. **Validation**: Basic validation is implemented to ensure that machine names are required and status values are valid. However, no advanced validation mechanisms are included in this version.
2. **Error Handling**: Basic error handling is implemented to inform users of any issues encountered during machine management operations.
3. **Data Persistence**: Data persistence mechanisms such as database storage are not implemented in this version. Default Machines are stored in memory and will reset upon application restart. Machine statuses are stored in JSON file and can be modifies without compiling.

**Instructions for Running the Application**

1. **Prerequisites**: Ensure that you have the .NET Framework installed on your system.
2. **Download**: Download the Machine Status Tracker application files.
3. **Run the Application**: Double-click the executable file (e.g., WPFMachineStatus.exe) to launch the application.
4. **Interact with the Application**:
   * Use the buttons (Add, Edit, Delete) to manage machines.
   * Select a machine to edit or delete it.
   * Use the filter dropdown to filter machines based on their operational status.
   * Toggle the "Show as Cards" checkbox to switch between list and card view.
5. **Exit the Application**: Close the application window to exit.

**Future Enhancements**

1. **Data Persistence**: Implement data persistence mechanisms such as database storage to retain machine statuses between application sessions.
2. **Advanced Validation**: Enhance validation mechanisms to provide more comprehensive error feedback to users.
3. **Improved Error Handling**: Implement more robust error handling to handle various edge cases and exceptions gracefully.
4. **User Authentication and Authorization**: Introduce user authentication and authorization mechanisms to control access to application features.
5. **Enhanced User Interface**: Improve the user interface with additional features such as sorting, searching, and pagination.