Inventory Management System

Key Features:

1. User Authentication and Role-Based Access Control

- **Login/Signup** with secure authentication (password hashing, multi-factor authentication).
- **Roles**: Admin, Contributor, Viewer.
    - Admin: Full access, including user management.
    - Contributor: Add, edit, and delete assets they upload.
    - Viewer: Read-only access.
- Session management to prevent unauthorized access.

2. Asset Management

- Upload digital assets (e.g., images, videos, PDFs) with progress indicators for large files.
- Organize files into folders or categories (e.g., Marketing, HR, Design).
- **Search and Filter**:
    - Search by file name, metadata (tags, uploader, or date).
    - Filter by file type, category, or size.
- **CRUD Operations**: Add, update, delete, and move assets between folders.

3. Tagging and Metadata

- Manual and automated tagging of assets (e.g., adding tags like "Marketing," "Q1 Campaign").
- Metadata fields:
    - File type, size, upload date, last modified date.
    - Custom metadata fields based on organization needs.

4. Version Control

- Enable versioning for digital assets (e.g., multiple iterations of a design file).
- Access and rollback to previous versions as needed.

5. Preview and File Support

- In-app previews for supported file types:
    - Images (PNG, JPG).
    - Documents (PDF, DOCX).
    - Videos (MP4).
- Option to download or share links.

6. File Sharing

- Generate shareable links with expiration dates for security.
- Option to set access permissions (read-only or edit).
- Notifications for shared assets (e.g., "User X shared a file with you").

7. Storage and Analytics

- Dashboard to track:
  - Total storage used.
  - Most accessed files.
  - Upload trends (e.g., which department uploads the most files).
- Support for cloud storage integration (e.g., AWS S3, Google Drive).

8. Audit Logs

- Log all activity for security and accountability:
  - File uploads, edits, deletions, and downloads.
  - User login/logout.

9. Responsive UI

- Accessible on desktops, tablets, and smartphones.
- Modern and intuitive design with drag-and-drop functionality.

10. Notifications and Reminders

- Email or in-app notifications:
  - For shared files.
  - For upcoming file expiration (if a file has a set expiration date).
- Weekly summary of activity.

Refined Key Features for Inventory Management System

1. Low Stock Alerts

- **Real-Time Notifications**: Alerts for items running low in stock to avoid shortages.
- **Threshold Configuration**: Set custom levels for low stock alerts (e.g., alert if quantity < 10).

2. Search & Filter Options

- **Advanced Search**: Search by name, SKU, or category for quick access.
- **Filtering Options**: Sort by stock levels, suppliers, or expiration dates for better management.

3. Analytics Dashboard

- **Visual Reports**: Real-time graphs showing stock levels, sales trends, and inventory turnover.
- **Predictive Analytics**: Estimate future inventory needs based on historical sales data.

4. Supplier Management

- **Supplier Directory**: Keep records of suppliers and contact details.
- **Order Tracking**: View order history and link items to suppliers for quick reordering.

5. Barcode/QR Code Integration

- **Barcode Generation & Scanning**: Generate barcodes or QR codes for items.
- **Quick Updates**: Use a camera or scanner to update inventory (e.g., adding/removing stock).

6. Audit Trail

- **Change Log**: Record all actions like item addition, updates, or deletions for accountability.
- **User Tracking**: Log who made the changes and when.

7. Multi-Location Support

- **Location Management**: Manage inventory across multiple warehouses or stores.
- **Stock Availability by Location**: View and transfer stock between locations as needed.

8. Role-Based Access Control

- **Custom Roles**: Admins can manage the entire system; employees get limited access.
- **Permission Levels**: Restrict access to certain features like reports or supplier management.

9. Reports & Exports

- **Detailed Reports**: Generate reports on stock levels, sales, low-stock items, etc.
- **Export Options**: Export data in formats like CSV or PDF for sharing.

10. Integration with Third-Party Tools

- **Accounting Integration**: Sync with tools like QuickBooks or Zoho for financial reporting.
- **E-Commerce Platforms**: Automatically update inventory based on online sales.

11. AI-Powered Forecasting (Optional)

- **Demand Prediction**: Use AI to predict demand for specific items based on sales patterns.
- **Optimize Restocking**: Prevent overstocking or understocking.

12. Mobile App (Optional)

- **On-the-Go Management**: Manage inventory from a mobile app.
- **Offline Access**: Update inventory offline with automatic syncing when reconnected.

Innovative Suggestions

1. **Sustainability Tracker**:
   o Track and minimize waste for perishable inventory.
   o Notify users of approaching expiration dates for items.
2. **Gamified User Engagement**:
   o Reward employees with badges for maintaining accurate inventory updates or hitting stock targets.
3. **Custom Notifications**:
   o Tailored alerts for specific actions, like restocking reminders or sales milestones.
4. **Multilingual Support**:
   o Enable the system to support multiple languages for global usability.
5. **Custom Themes & Branding**:
   o Allow businesses to customize the interface with their branding, logo, and color scheme.
6. **Voice Command Integration**:
   o Add voice support for quick inventory updates (e.g., "Add 10 units of Item X").