Password Manager Application – Class Diagram

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Summary

This project delivers a comprehensive Java password manager application that demonstrates exemplary software engineering practices, professional documentation standards, and adherence to SOLID principles. The application includes four interacting classes with complete JavaDoc documentation, a professional HTML class diagram, and thorough code analysis.

Class Diagram:

PasswordApp (Center) - The main coordinator/controller class that orchestrates the entire system:

- Composition relationships to both **PasswordGenerator** and **PasswordManager** (it owns and controls these objects)

- Association relationship to **PasswordEntry** (it uses/creates password entries)

Key Relationships:

1. **Composition**:

   o **PasswordApp** → **PasswordGenerator**: App owns and controls password generation

   o **PasswordApp** → **PasswordManager**: App owns and controls data management

2. **Aggregation**:

   o **PasswordManager** → **PasswordEntry**: Manager contains/stores collections of password entries

3. **Dependency**:

   o **PasswordGenerator** → **PasswordEntry**: Generator validates password strength for entries

4. **Association**:

- o **PasswordApp → PasswordEntry**: App creates and uses password entry objects

5. **Inner Class**:

    - o **PasswordManager → PasswordManagerException**: Exception is defined inside Manager class