**User Guide for Maintenance**

**Purpose**: This guide assists developers in setting up, building, and maintaining the DungeonCrawler Android application.

**Prerequisites**:

* **Software**: Android Studio 2023.2.1 or later, JDK 17, Android SDK (API 36).
* **Git**: Installed for cloning the repository.
* **Hardware**: Minimum 8GB RAM, 20GB free disk space.

**Setup Instructions**:

1. **Clone the Repository**:
   * Open a terminal and run: git clone https://gitlab.com/yourusername/dungeoncrawler.git
   * Navigate to the project folder: cd dungeoncrawler
2. **Open in Android Studio**:
   * Launch Android Studio and select "Open an existing project."
   * Choose the cloned dungeoncrawler directory.
3. **Configure SDK**:
   * Go to File > Project Structure > SDK Location.
   * Set JDK to JDK 17 and Android SDK to API 36.
   * Sync the project when prompted.
4. **Build the Project**:
   * Click "Build > Make Project" to compile the code.
   * Resolve any dependency issues (e.g., ensure build.gradle includes JUnit and Mockito).
5. **Run Tests**:
   * Right-click app/src/test/java/card/andrew/dungeoncrawler/PlayerTest.java and select "Run 'PlayerTest'".
   * Review results in the Run window to ensure all tests pass.
6. **Run the App**:
   * Connect an emulator (e.g., Pixel 6 API 36) or USB device.
   * Click "Run > Run 'app'" to launch HomeActivity.

**Maintenance Tasks**:

* **Update Dependencies**: Edit build.gradle files to update versions (e.g., Mockito to 5.11.0).
* **Bug Fixes**: Modify Player.java or DungeonView.java and re-run tests.
* **Version Control**: Commit changes with git commit -m "Fix bug in Player movement" and push with git push.

**Troubleshooting**:

* **Build Errors**: Invalidate caches (File > Invalidate Caches / Restart) and re-sync.
* **Test Failures**: Check mock setups in PlayerTest.java and ensure Paint is mocked.