Presentation Layer

The presentation layer is responsible for the user interface and user experience, ensuring the application is visually appealing, intuitive, and easy to navigate.

Components:

- **Main Screen**: This is the starting point of the app, where tasks can be added, viewed, and managed.
- **Task Details**: These screens allow users to input task details, including the task name, importance level, and date. Users also set the Pomodoro timer duration here.
- **Leaderboard**: Displayed via a connection to Firebase, this screen shows a ranked list of users based on their reward points.
- **Settings Screen**: Allows users to customize the application, such as opting out of notifications or making their scores private on the leaderboard.
- **Help Screen**: Provides users with assistance and information on how to use the app.

Application Layer

The application layer houses the core logic of the application. It processes user input, manages data, and enforces business rules.

Components:

- **Task Management**: This involves the handling of tasks, including creating, completing, and deleting tasks, and managing their associated timers.
- **Reward System**: This system calculates the points to award to a user upon task completion.
- **Notifications**: Local and remote notifications are managed here to alert the user when a task's timer is nearing its end.
- **Leaderboard Management**: This involves communicating with Firebase to update and retrieve leaderboard data.

Hardware Abstraction Layer

The hardware abstraction layer interacts with the device's hardware and operating system, abstracting those details away from the rest of the application. This allows the app to be compatible with various Android devices and versions without needing to be specifically tailored to each one.

Components:

- **SQLite Databases**: Used to store user data, task details, and reward points on the device.
- **Firebase**: A cloud-based NoSQL database used for real-time leaderboard updates and remote notifications.
- **Android OS Services**: These services include notifications, networking, and data storage.
- **Device Hardware**: Interactions with device hardware, such as the vibration motor for notifications, the screen for displaying the user interface, and possibly the speakers for audible notifications.

Note: The lines between these layers are not strictly separated. For instance, while notifications may be processed in the application layer, they may rely on both the presentation layer (to display notifications while the app is running) and the hardware abstraction layer (to interact with Android's notification system when the app isn't running)