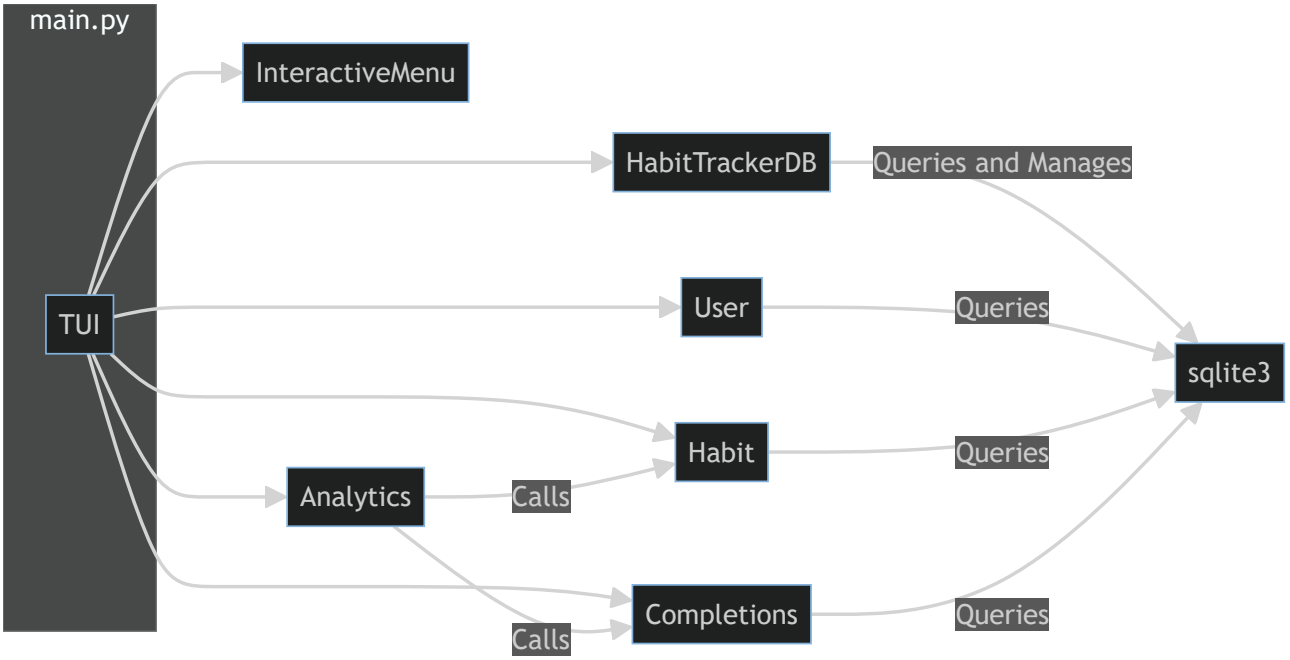
Command Line Habit Tracker - Design Document

1. Project Overview

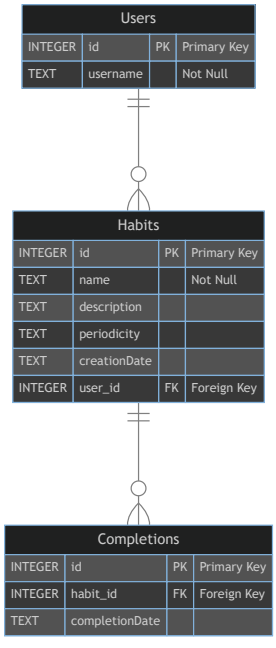
This CLI Habit tracker is a Python-based app that allows users to track their habits through a text-based user interface (TUI). Users can create habits, mark them as complete, and view analytics about their progress.

2. Core Components



3. Database

SQLite3 is used as the database for this project. It's a lightweight, serverless, and self-contained relational database engine that doesn't require a separate server process or configuration.



4. Class Attributes and Methods

4.1 InteractiveMenu

Attributes:

- `title: str`
- `options: list`
- `selected: int`

Methods:

- `__init__(self, title, options)`
- `get_formatted_options(self)`
- `create_layout(self)`
- `create_style(self)`
- `create_keybindings(self)`
- `run(self)`

4.2 HabitTrackerDB

Attributes:

- `conn: sqlite3.Connection`

Methods:

- `__init__(self, db_name='habit_tracker.db')`
- `create_tables(self)`
- `clear_tables(self)`
- `fill_tables(self)`
- `close(self)`

4.3 Analytics

Attributes:

- `habit: HabitModule`
- `completions: CompletionsModule`

Methods:

- `__init__(self, db)`
- `getAllHabits(self, user_id)`
- `getHabitsByPeriodicity(self, user_id, periodicity)`
- `getLongestStreakAllHabits(self, user_id)`
- `getLongestStreakForHabit(self, habit_id)`
- `getLongestStreaksForAllPeriodicities(self, user_id)`

4.4 Completions

Attributes:

- `db: HabitTrackerDB`

Methods:

- `__init__(self, db)`
- `add_completion(self, habit_id, completionDate)`
- `get_completion(self, completion_id)`
- `get_longest_streak(self, habit_id)`
- `update_completion(self, completion_id, habit_id, completionDate)`

- `delete_completion(self, completion_id)`

4.5 Habit

Attributes:

- `db: HabitTrackerDB`

Methods:

- `__init__(self, db)`
- `add_habit(self, name, description, periodicity, creationDate, user_id)`
- `get_habit(self, habit_id)`
- `get_habits(self, user_id)`
- `get_habits_by_periodicity(self, user_id, periodicity)`
- `get_habits_by_user(self, user_id)`
- `update_habit(self, habit_id, name, description, periodicity, creationDate)`
- `delete_habit(self, habit_id)`

4.6 User

Attributes:

- `db: HabitTrackerDB`

Methods:

- `__init__(self, db)`
- `add_user(self, username)`
- `get_user(self, user_id)`
- `get_users(self)`
- `update_user(self, user_id, username)`
- `delete_user(self, user_id)`

5. External Libraries

- **SQLite3**: Included in Python, used for database operations
- **Colorama**: Used for easier terminal coloring
- **prompt_toolkit**: Used for interactive arrow-key oriented TUI

6. Installation and Usage

To install the Command Line Habit Tracker:

1. Ensure Python 3.7+ is installed on your system
2. Clone the repository or download the source code at https://github.com/alonsoburon/habit_tracker.git
3. Install required libraries: `pip install colorama prompt_toolkit`
4. Run `main.py` to start the application

To use the application:

1. Navigate menus using *arrow keys*
2. Select options with the *Enter* key
3. Follow on-screen prompts to manage *users*, *habits*, and view *analytics*
4. Use the debug menu for clearing and filling the db with fake data