INTERNATIONAL UNIVERSITY OF APPLIED SCIENCES

92133053 – ORIBHUNUEBHO, HAPPINESS

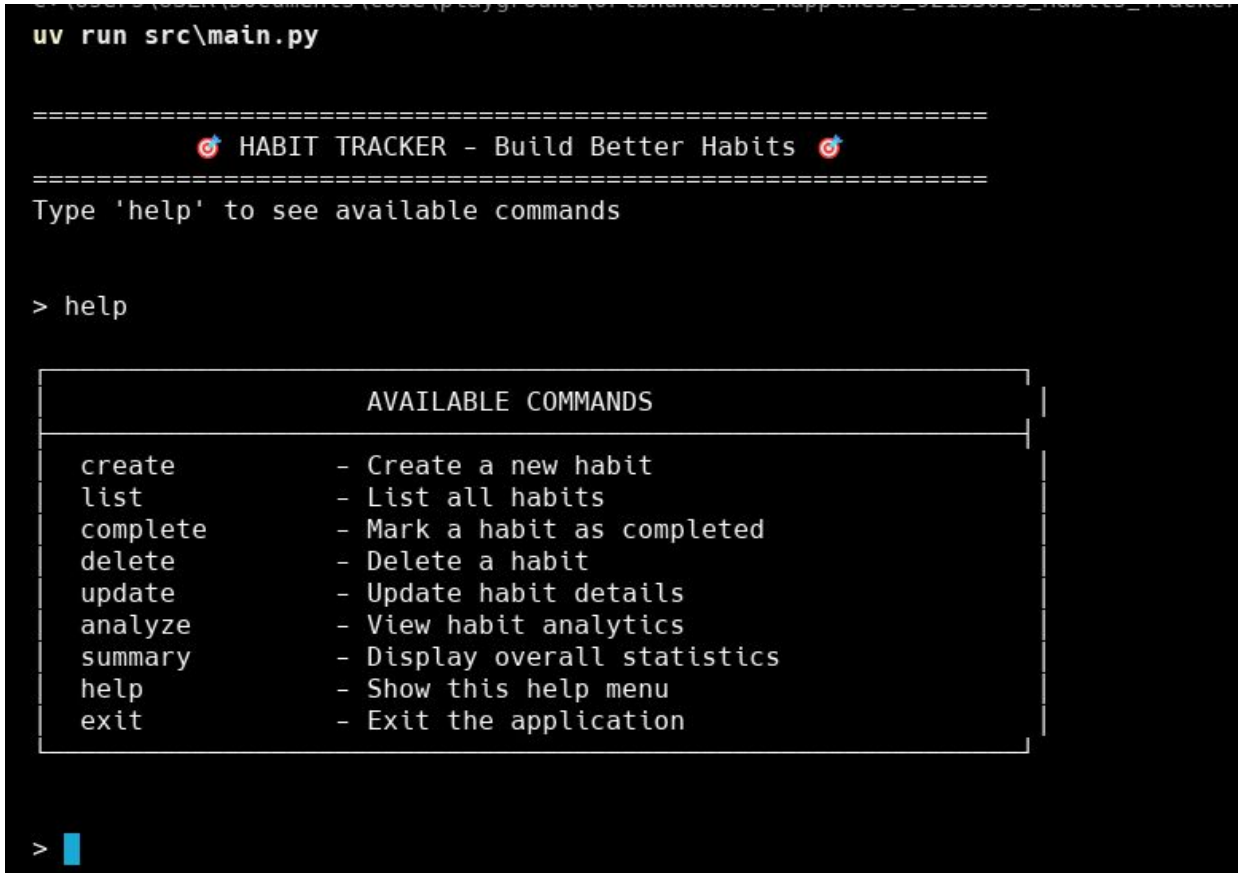
OOFPP DEVELOPMENT PHASE

PROJECT OVERVIEW

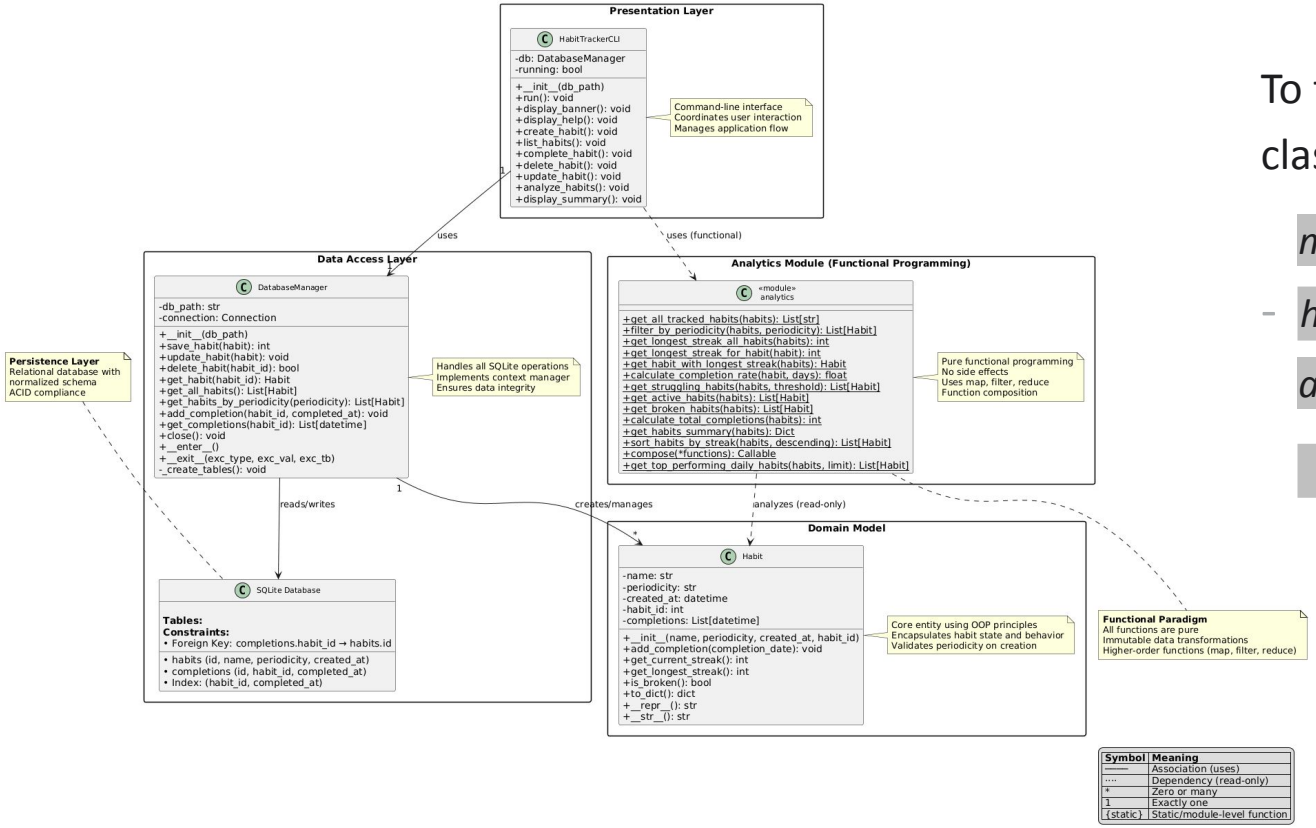
The created application is a CLI based backend that handles multiple features for habit tracking:

- Create habits
- Read/list habits
- Update habits
- Delete habits
- Analyze habit streaks

All features are implemented using Object-oriented and functional programing in Python v3.13 with a database as data storage mechanism.



ARCHITECTURE/DESIGN



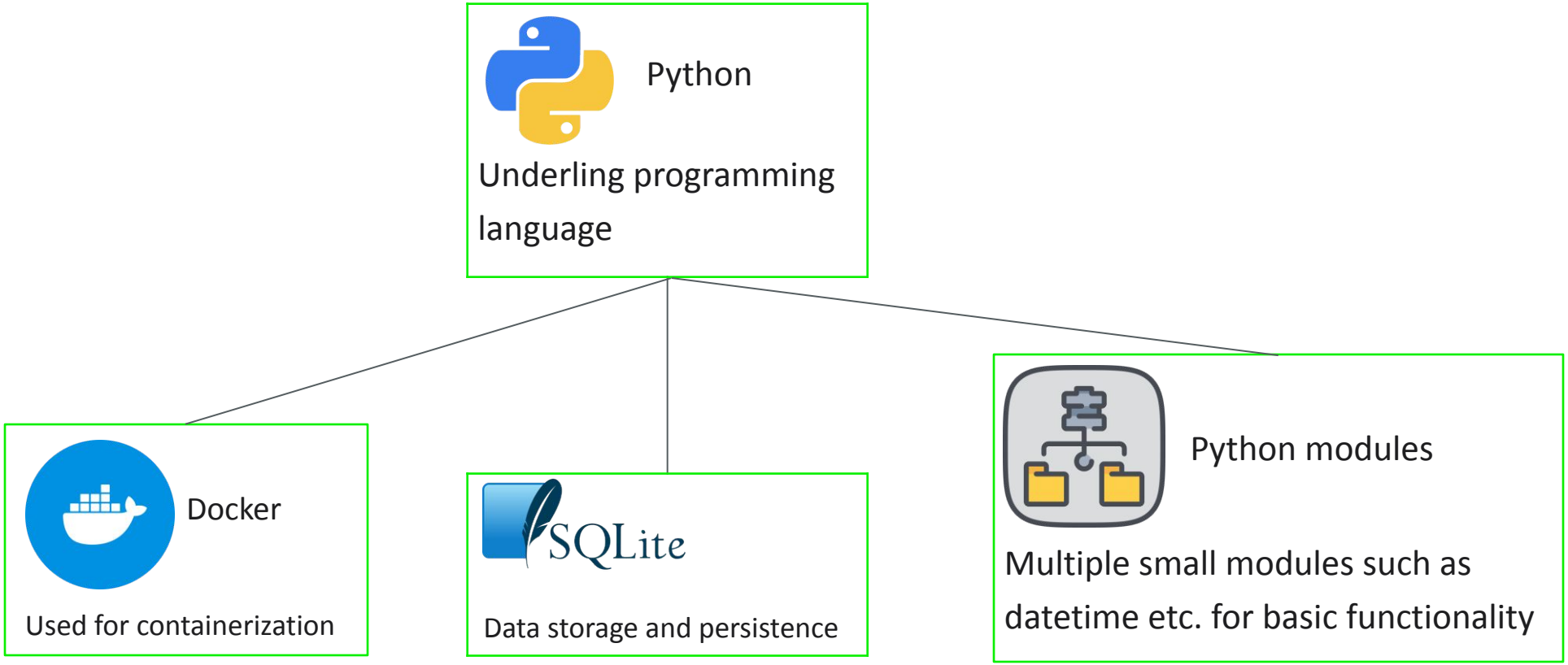
To follow the object-oriented principle, I implemented multiple classes which are represented by the following files:

- *main.py* – used for CLI interaction
- *habit.py* – defines the Habit class
- *analytics.py* – used for the analytics functions
- *database.py* – enables database integration

Separation of concerns enables independent development and testing of each component.

TOOLS & FRAMEWORKS

Multiple tools and frameworks were used which allowed a quick and efficient design and implementation:



USER INTERACTION - BASICS

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Start and help menu

```
uv run src\main.py

============================================================
          🎯 HABIT TRACKER - Build Better Habits 🎯
============================================================
Type 'help' to see available commands

> help

┌──────────────────────────────────────────────────────────┐
│                    AVAILABLE COMMANDS                    │
├──────────────────────────────────────────────────────────┤
│  create          - Create a new habit                    │
│  list            - List all habits                       │
│  complete        - Mark a habit as completed             │
│  delete          - Delete a habit                        │
│  update          - Update habit details                  │
│  analyze         - View habit analytics                  │
│  summary         - Display overall statistics            │
│  help            - Show this help menu                   │
│  exit            - Exit the application                  │
└──────────────────────────────────────────────────────────┘

> create

📝 Create New Habit
----------------------------------------
Enter habit name: Read two pages of a book every night during bedtime

Periodicity options:
  1. Daily
  2. Weekly
Select periodicity (1 or 2): 1

✅ Habit 'Read two pages of a book every night during bedtime' (daily) created successfully!
```

```
uv run src\main.py

📋 Your Habits
================================================================================
ID    Name                      Period     Streak   Status
--------------------------------------------------------------------------------
1     Read two pages of a book every night during bedtime daily      0        ✓ Active
================================================================================
Total habits: 1


Enter habit ID to update: 1

Updating habit: Read two pages of a book every night during bedtime
New name (press Enter to keep 'Read two pages of a book every night during bedtime'):

Periodicity options:
  Current: daily
  1. Daily
  2. Weekly
Select new periodicity (or press Enter to keep current):

✅ Habit updated successfully!

> complete

📋 Your Habits
================================================================================
ID    Name                      Period     Streak   Status
--------------------------------------------------------------------------------
1     Read two pages of a book every night during bedtime daily      0        ✓ Active
================================================================================
Total habits: 1


Enter habit ID to mark as complete: 1

✅ Habit 'Read two pages of a book every night during bedtime' marked as complete!
🔥 Current streak: 1 daily period(s)

>
```

List, create, and mark habit(s)

List and delete habit(s)

```
Select periodicity (1 or 2): 1

✅ Habit 'Drink 1 gallon of water' (daily) created successfully!

> list

📋 Your Habits
================================================================================
ID    Name                      Period     Streak   Status
--------------------------------------------------------------------------------
2     Drink 1 gallon of water   daily      0        ✓ Active
1     Read two pages of a book every night during bedtime daily      1        ✓ Active
================================================================================
Total habits: 2


> delete 2
❌ Unknown command: 'delete 2'. Type 'help' for available commands.

> delete

📋 Your Habits
================================================================================
ID    Name                      Period     Streak   Status
--------------------------------------------------------------------------------
2     Drink 1 gallon of water   daily      0        ✓ Active
1     Read two pages of a book every night during bedtime daily      1        ✓ Active
================================================================================
Total habits: 2


Enter habit ID to delete: 1
⚠️  Are you sure you want to delete 'Read two pages of a book every night during bedtime'? (yes/no): yes
✅ Habit 'Read two pages of a book every night during bedtime' deleted successfully!

>
```

- Every interaction (create, delete, edit) can be done with either the initial letter or the whole word.

USER INTERACTION - ANALYTICS

Show analytics of habits

Shows the longest streak of all habits

Lists each habit by its corresponding periodicity

View all habits with each current streak

Show the streak for a defined habit

View top 5 performing habits

Currently, there is only one habit

```
> analyze

📊 Habit Analytics
------------------------------------------------------------
1. List all tracked habits
2. List habits by periodicity (daily/weekly)
3. Show longest streak across all habits
4. Show longest streak for specific habit
5. Show struggling habits (completion rate < 50%)
6. Show top performers
7. Back to main menu

Select option (1-7): 1

📋 All tracked habits (1):
  1. Drink 1 gallon of water

> analyzw
❌ Unknown command: 'analyzw'. Type 'help' for available commands.

> analyze

📊 Habit Analytics
------------------------------------------------------------
1. List all tracked habits
2. List habits by periodicity (daily/weekly)
3. Show longest streak across all habits
4. Show longest streak for specific habit
5. Show struggling habits (completion rate < 50%)
6. Show top performers
7. Back to main menu

Select option (1-7): 6

🌟 Top 5 performers:
  1. Drink 1 gallon of water - 0 daily streak
```

APPENDIX

- The software is licensed under the MIT license which allows everyone with a copy to modify, merge, publish, distribute, etc. copies of the software.
- The source code can be found in the public GitHub repository: https://github.com/Herthigal/Oribhunuebho_Happiness_92133053_OOFPP_Habits_Submission_Final
- Documentation is available as a “README” and comments in the code itself.