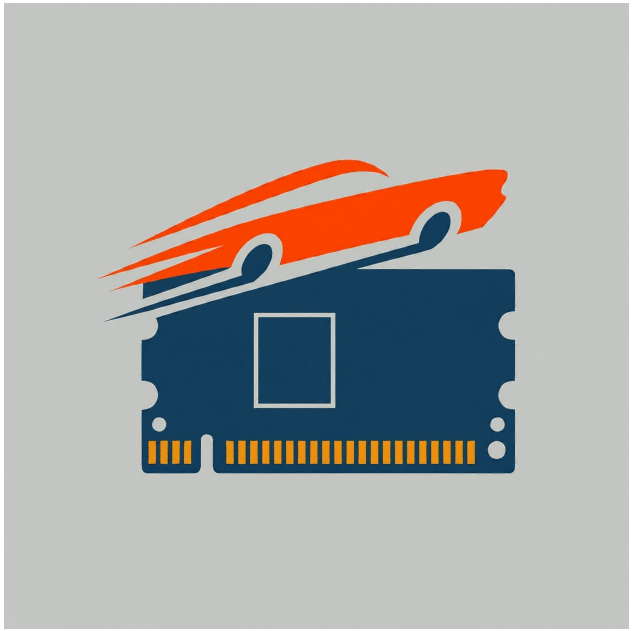
# Project Report

Team Name:

char_junkies



Members:

- Adriean Lemoine
- Chris Smith
- Nicholas Burgo

*GitHub: https://github.com/arlemoine/CS340_F_24_char_junkies*

# Goal of the Project

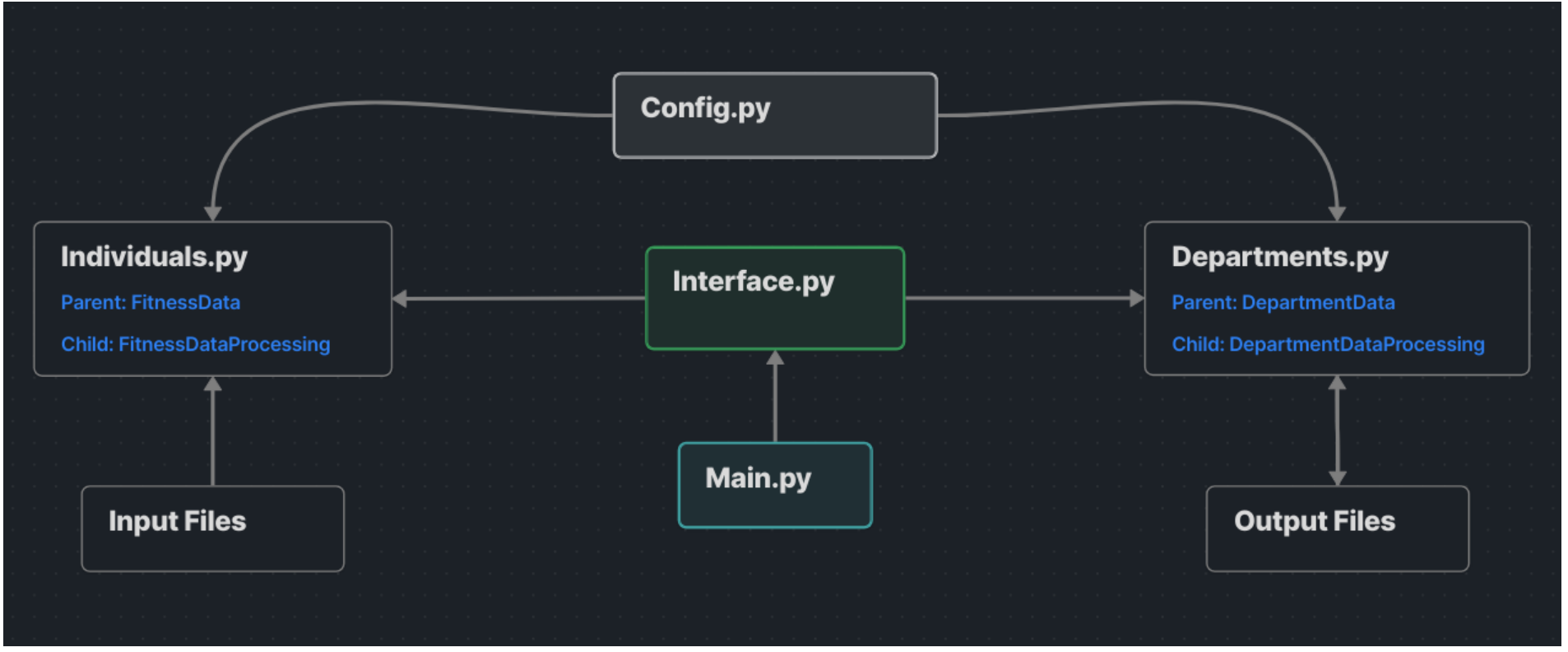
It is believed that the methods of ensuring police officer fitness level are inadequate to guarantee a proper police force. More specifically, it is not enough to give a fitness test to each officer once a year, as an annual fitness test does not guarantee an active lifestyle and overall indicator of officer health.

We attempt to solve this problem by the utilization of **Fitbits** in the department. Each officer has their **steps**, **heart rate variability** (HRV), and **heart rate** continuously monitored and assessed to calculate a **fitness score**. The heart rate is used to clean the heart rate variability data. The average steps and HRV are used to calculate a fitness score for each officer.

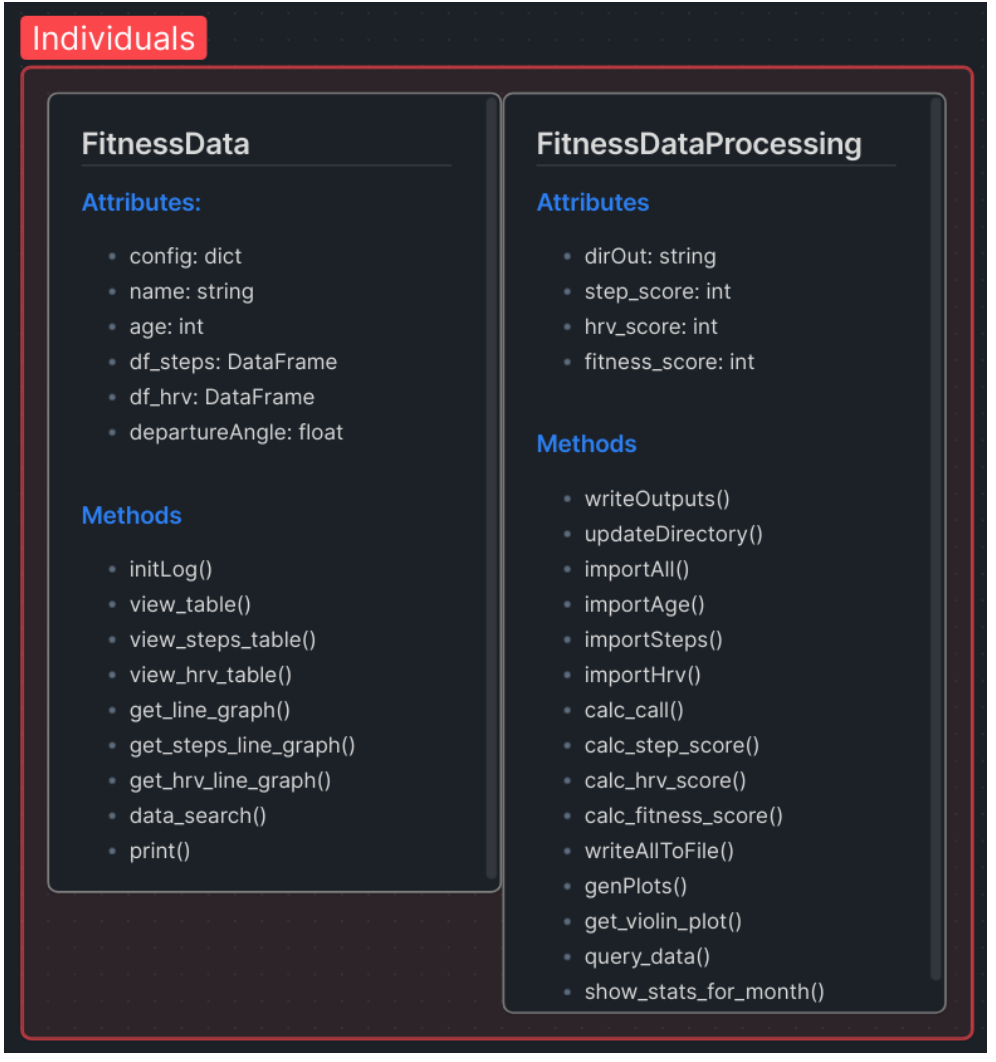
The fitness score determines whether or not the officer meets fitness standards, lands in probation, or fails fitness standards. We can also examine the officer's data as well as graphs to visualize this data, as the data and graphs are generated automatically.

This information can be used to determine how far from the fitness standard each officer is. It can also be used to project future fitness statistics, including the likelihood that a new officer would meet the fitness standards.

# Module Communication Flow

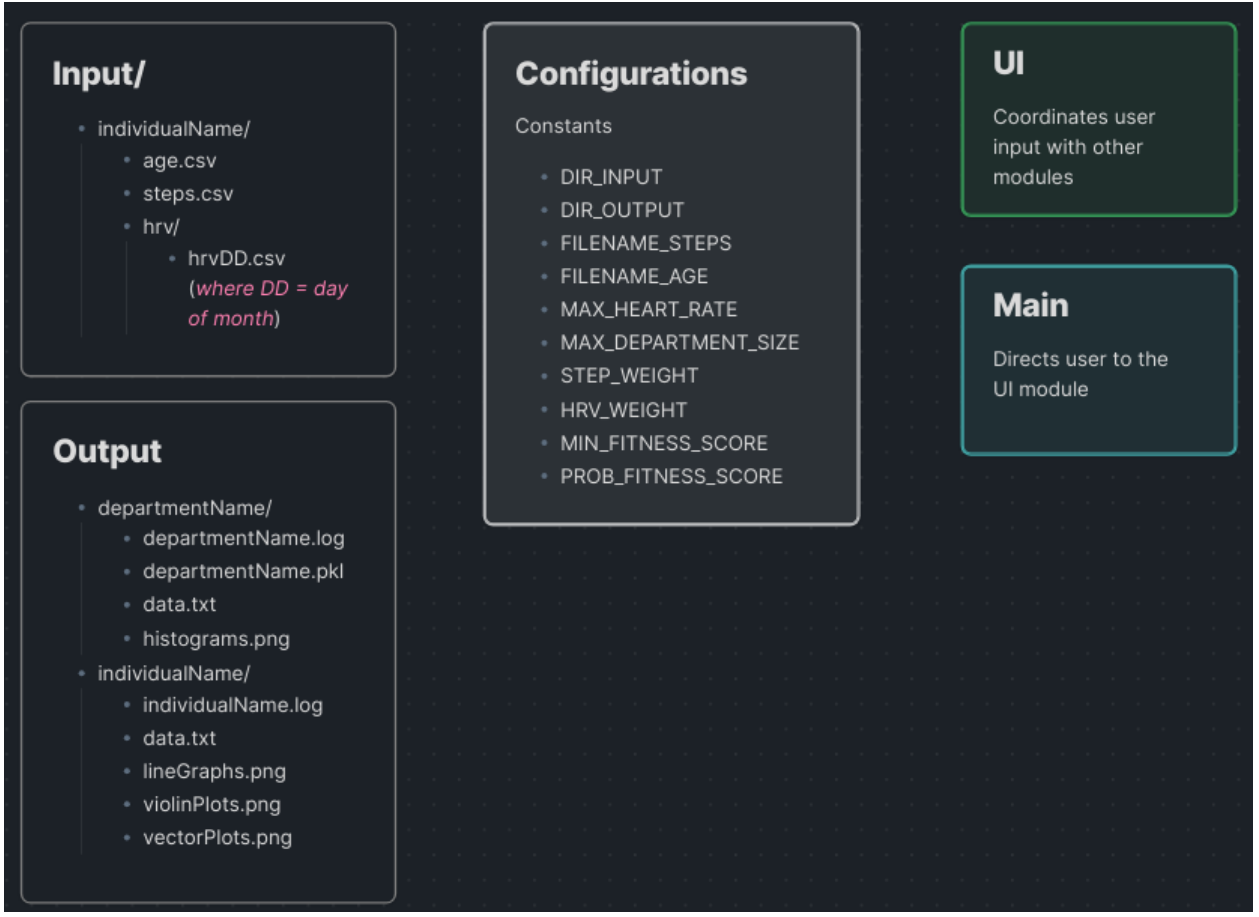


# Class Diagrams: Individuals.py



# Class Diagrams: Departments.py

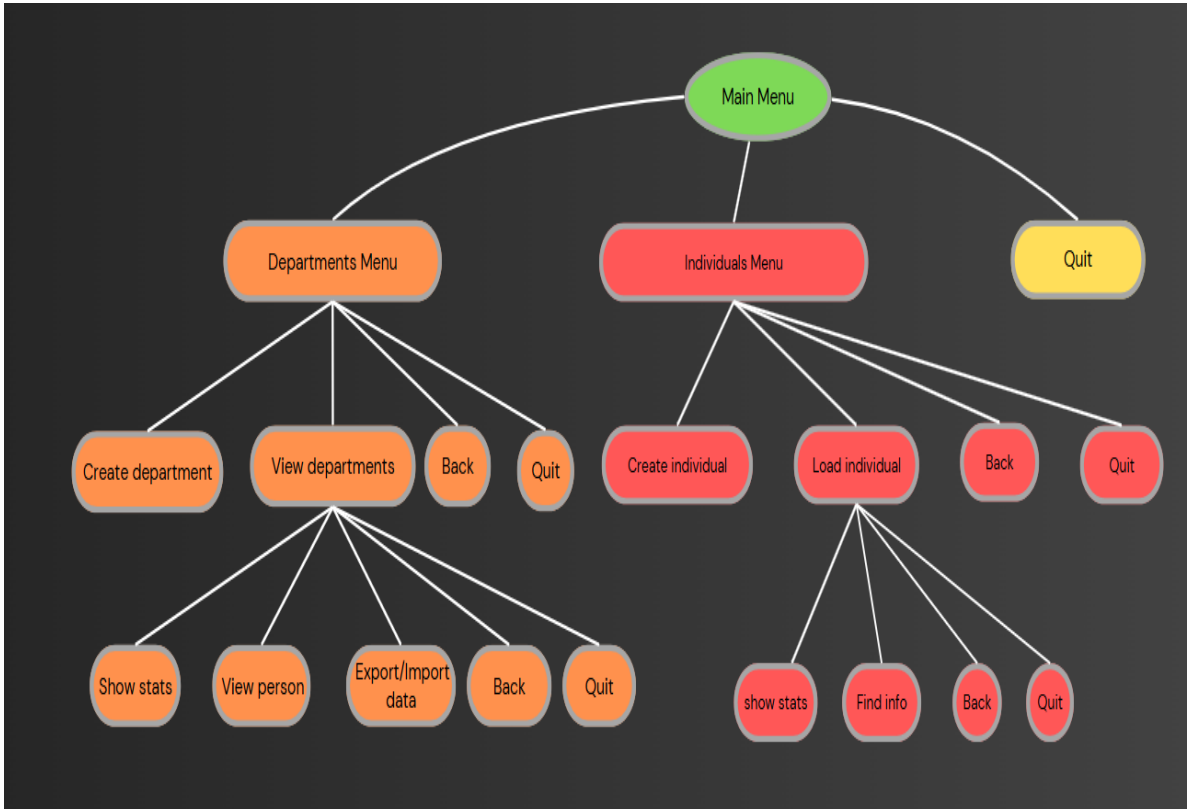
# Class Diagrams: Data Formats and Other



# User Manual

Main Menu

1. Individuals - *Access the *Individuals Menu* to create or manage individual profiles.*
2. Departments - *Access the *Departments Menu* to create or manage department data.*
3. Quit - *Exits the application.*



# User Manual

Individual Menu

1. Create Individual - *Use this option to create a new individual profile.*
2. Load Individual - *Lists all created individuals. Goes to the sub menu*
3. Back - *Returns to the *Main Menu*.*
4. Quit - *Exits the application.*

Individual Sub-Menu (intfInd3)

1. Show Stats - *Displays monthly statistics for the selected individual.*
2. Find Info - *Allows queries to find specific information.*
3. Back - *Returns to the *Individuals Menu*.*
4. Quit - *Exits the application.*

# User Manual

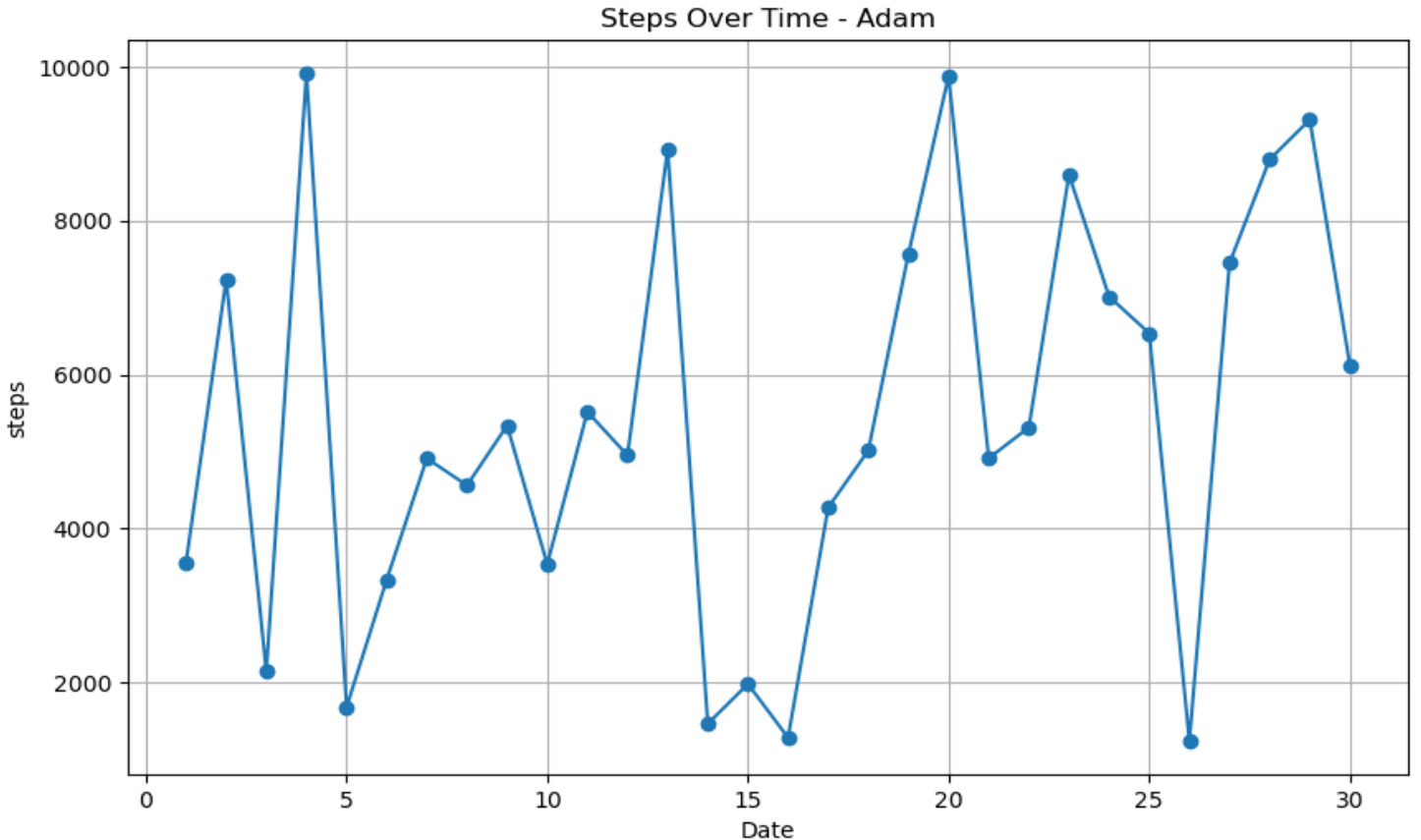
Department Menu

1. Create Department – *Use this option to create a new department.*
2. View Departments - *Lists all created departments. Directs you to the *Department Sub-Menu*.*
3. Back - *Returns to the *Main Menu*.*
4. Quit- *Exits the application.*

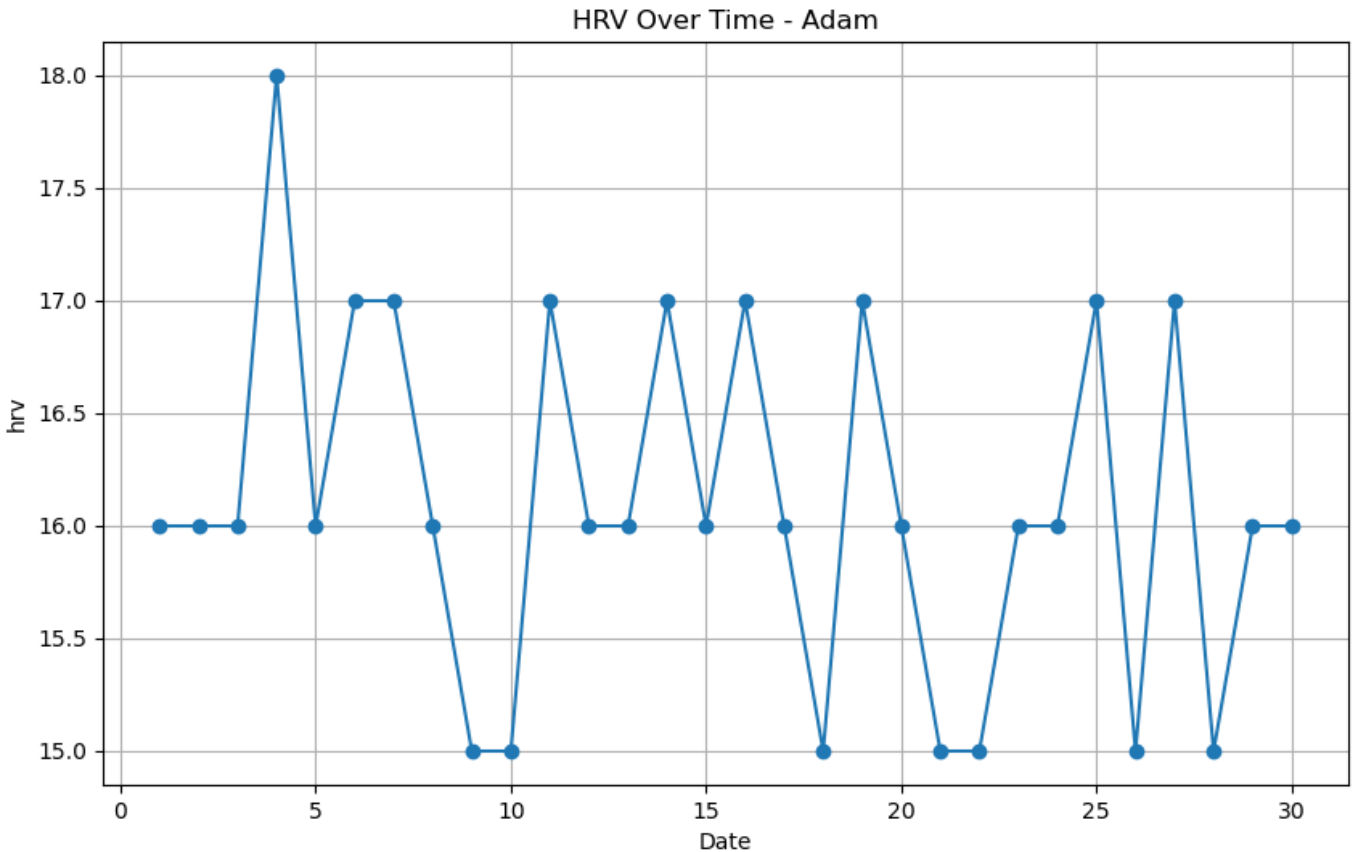
Department Sub-Menu (intfDept3)

1. Show Stats - *Displays department statistics.*
2. View Person – *Navigates to the * Individual Sub-Menu*.*
3. Export/Import Data - *Provides options for saving or loading department data using Pickle.*
4. Back - *Returns to the *Departments Menu*.*
5. Quit - *Exits the application.*

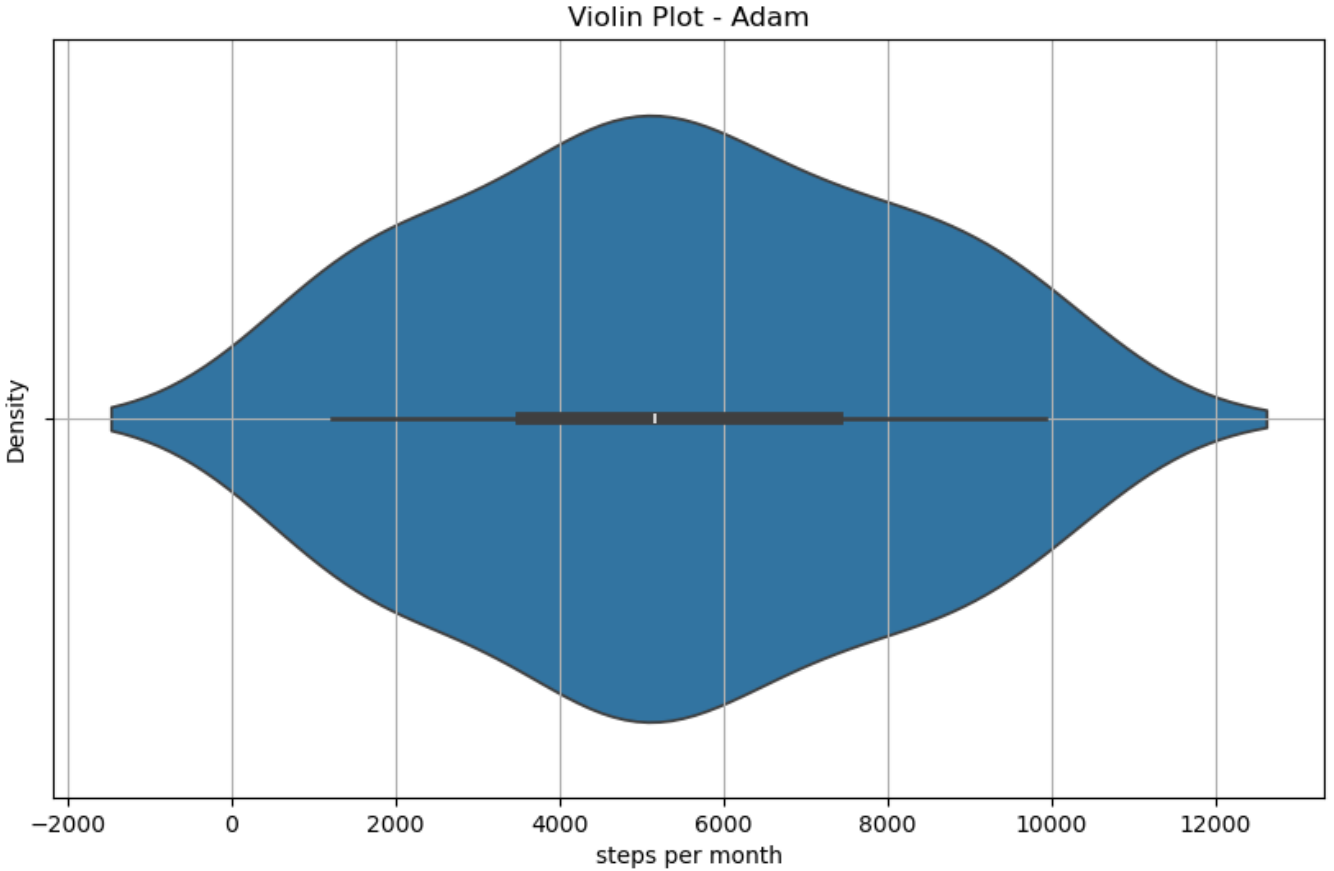
# Plots: Line


Steps Over Time - Adam
steps
Date
10000
8000
6000
4000
2000
0
5
10
15
20
25
30

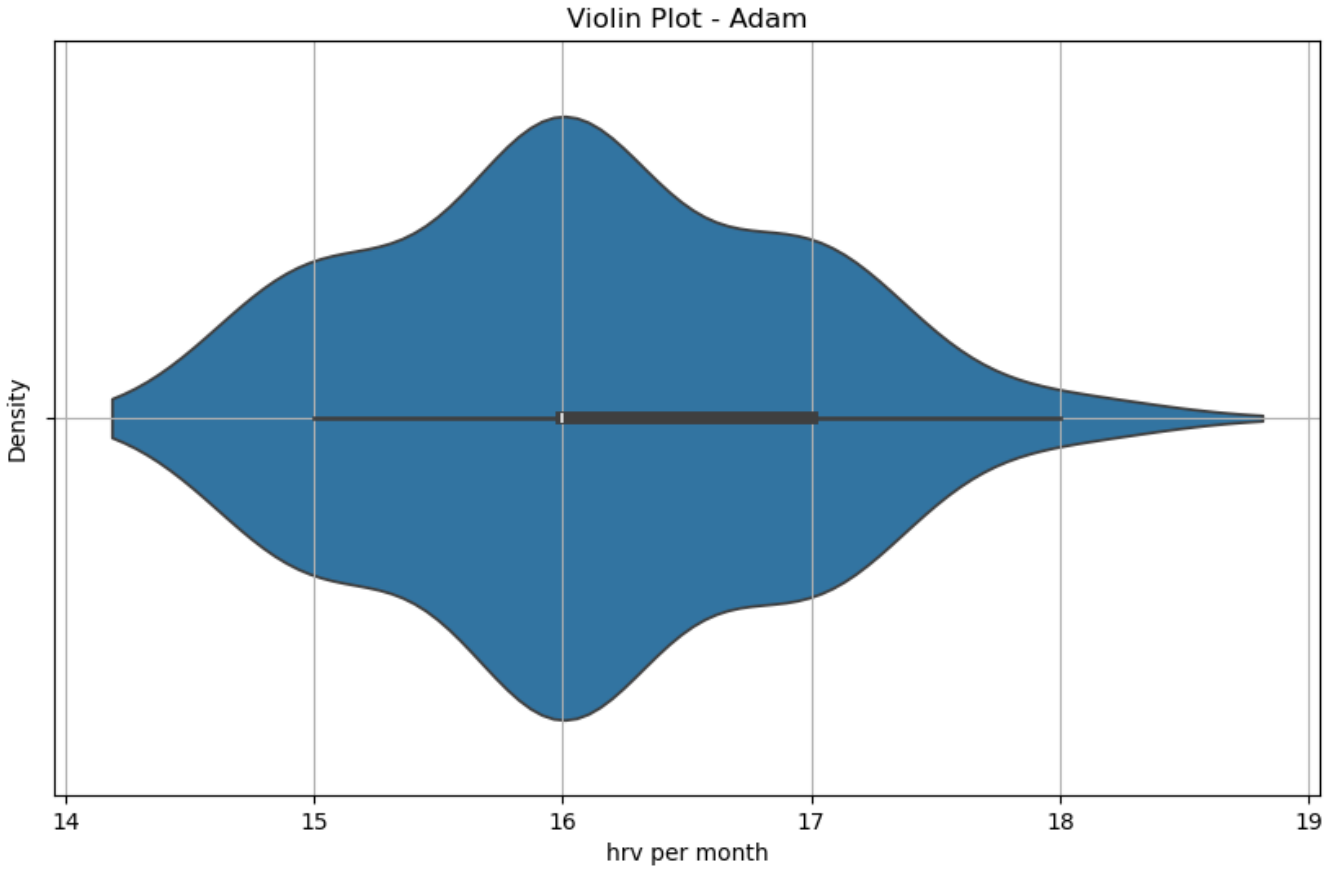
# Plots: Line


HRV Over Time - Adam
hrv
Date
18.0
17.5
17.0
16.5
16.0
15.5
15.0
0
5
10
15
20
25
30

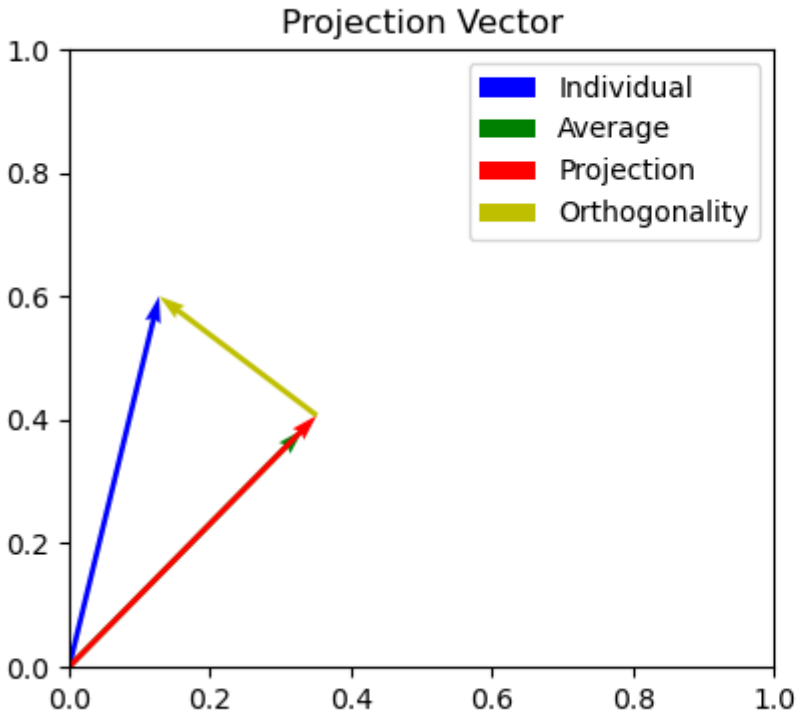
# Plots: Violin

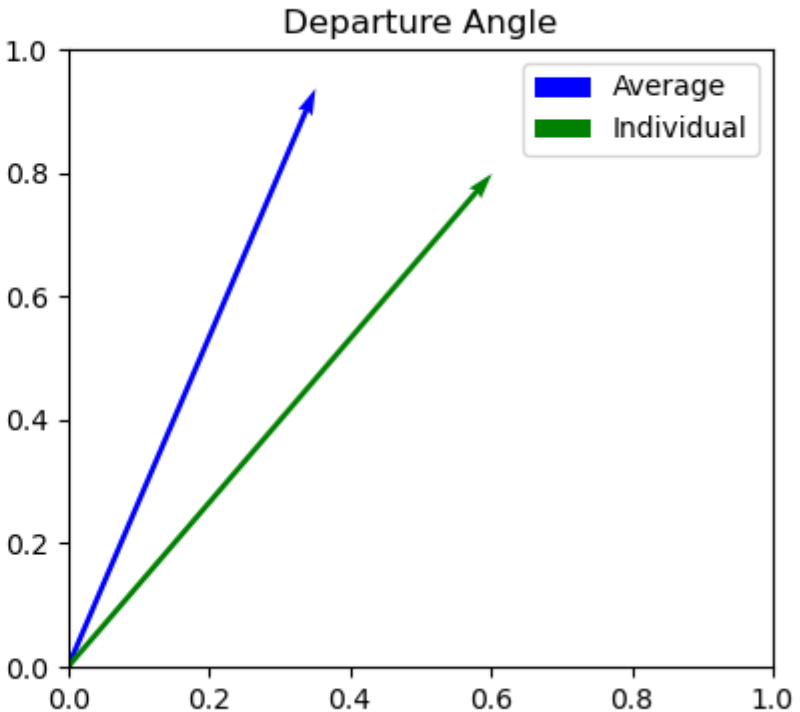


# Plots: Violin

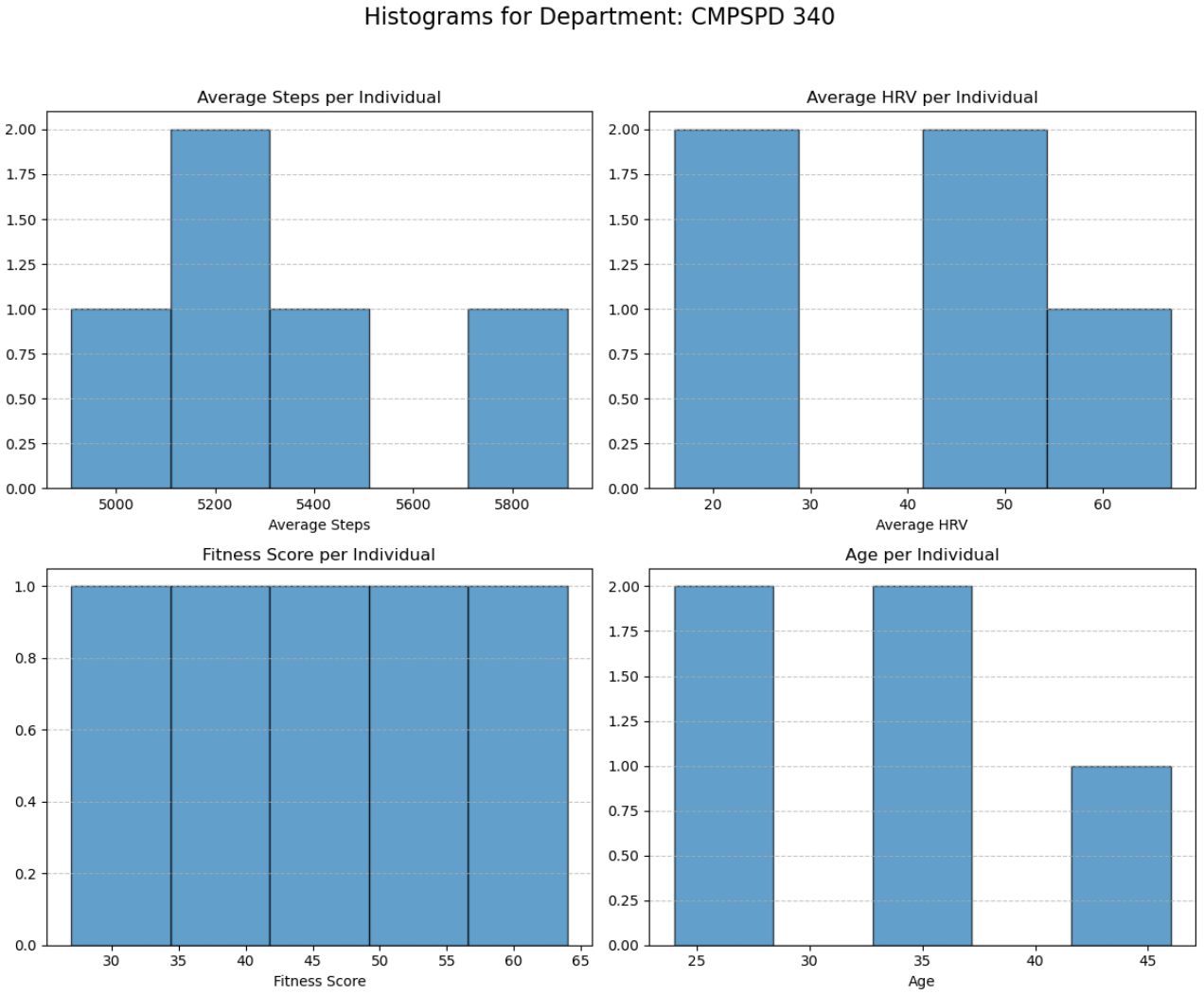


# Plots: Vector



# Plots: Histogram



# Team Issues

- None