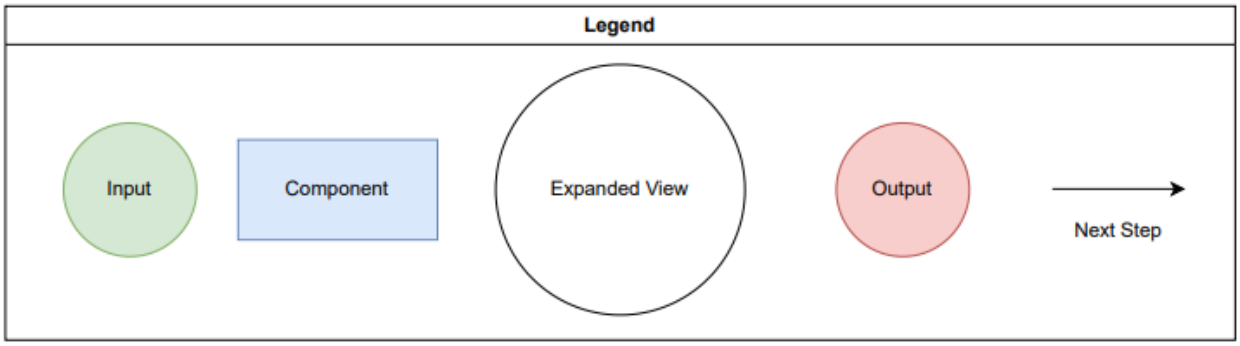
Design Diagrams

Project Title: A workout application for tracking workout information

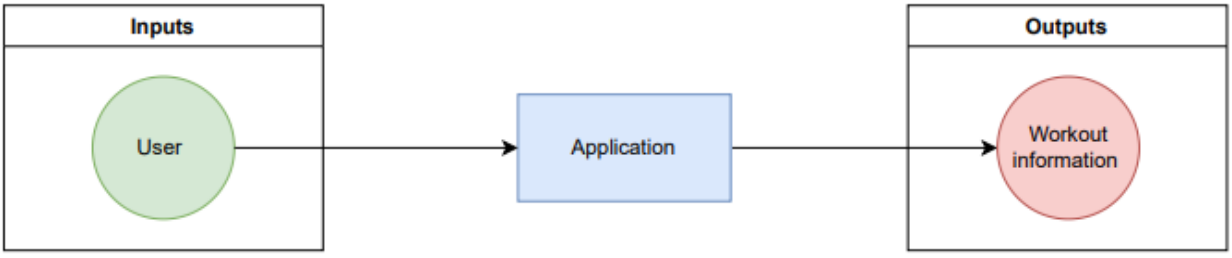
Goal Statement: An application that allows individuals to easily track workout information, along with providing the capability to have hands free tracking of workout information.

Preliminary Design Diagrams Information:

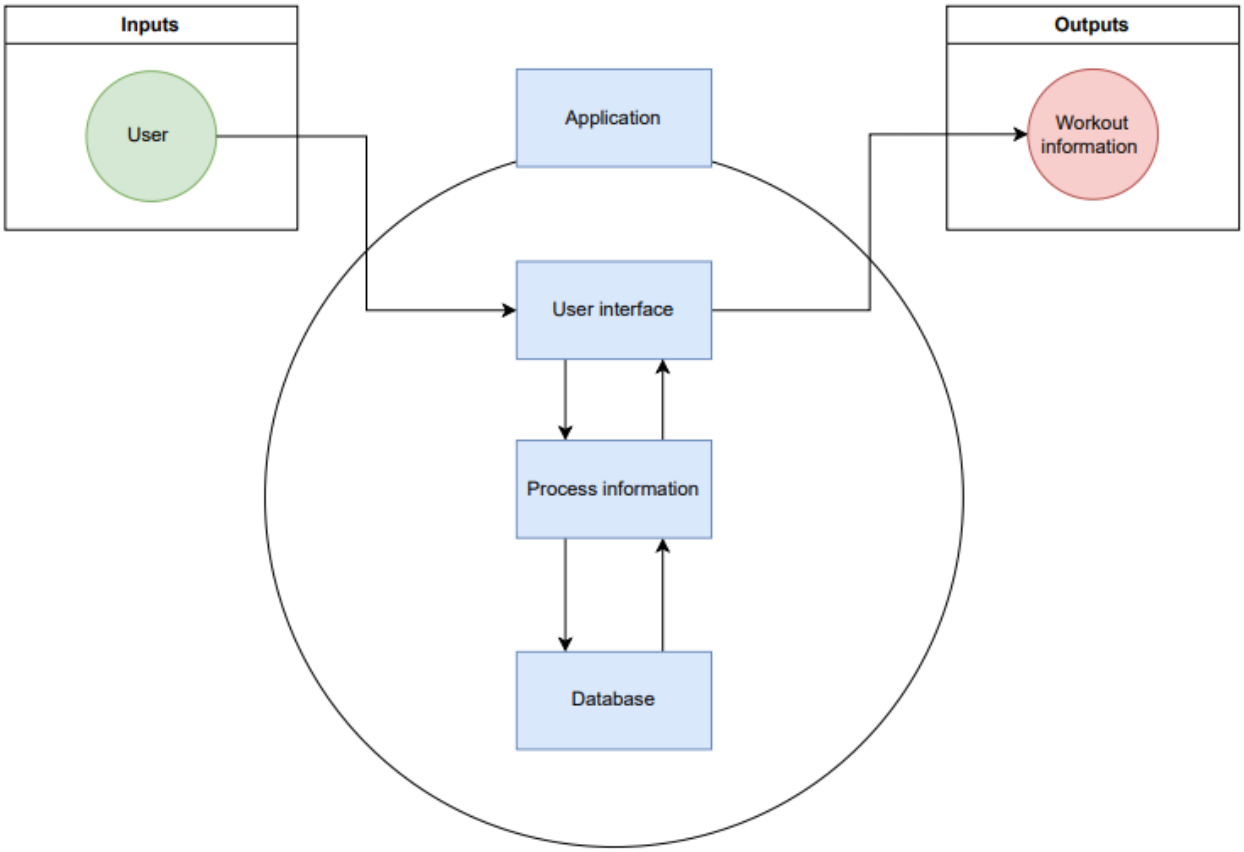


The green circle denotes the inputs to the system. The blue rectangle denotes components of the system. The larger transparent circle shows the expanded view of a given component. The red circle denotes the output of the systems. The arrow denotes the next step in the system.

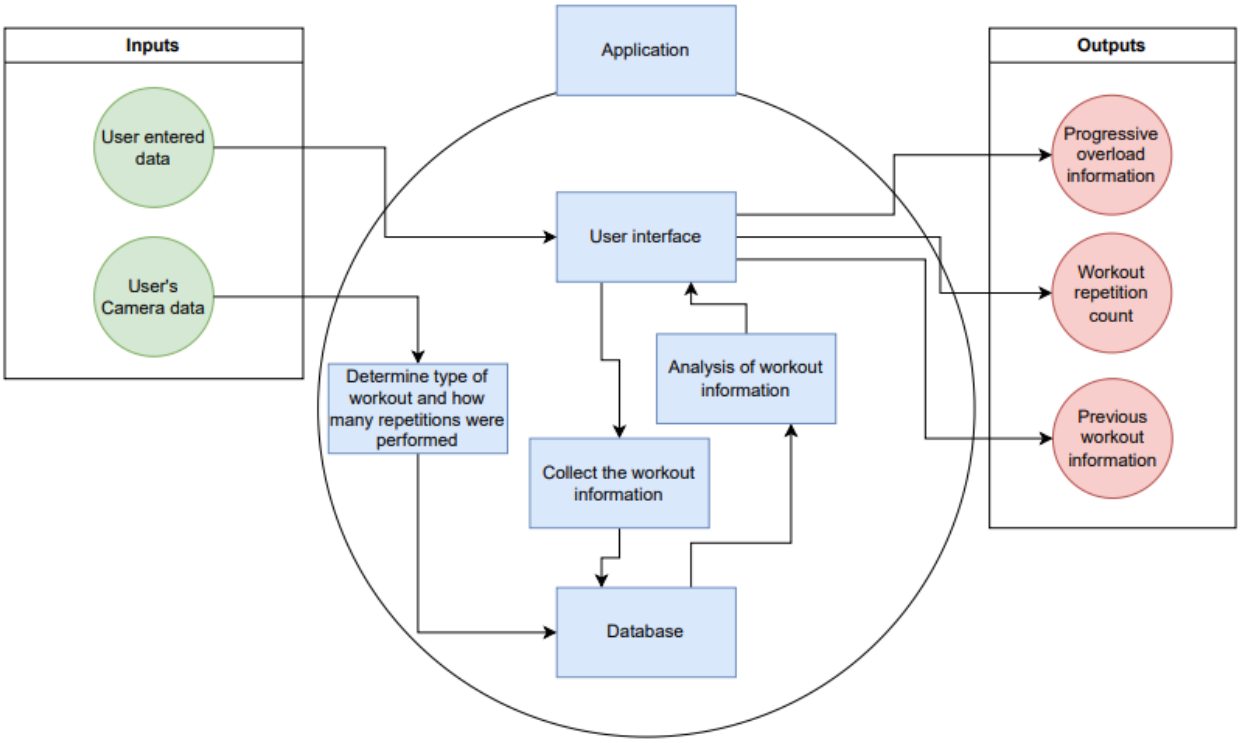
Design D0:



Design D1:


Inputs
User
Application
Outputs
Workout information
User interface
Process information
Database

Design D2:



- **Inputs**:
    - *User entered data*: Data the user enters, whether it be the type of workout, repetitions of a workout, or additional notes.
    - *User's Camera data*: Data from the camera, which is of the user performing a workout.
- **Application**:
    - *User Interface*: The interface the user interacts with to enter the inputs and view the outputs will be developed with the programming language Flutter.
    - *Determine type of workout and how many repetitions were performed*: The computer vision software will detect and count the repetitions to get this

information. The computer vision software the team will develop will include the use of the Open Computer Vision Library (OpenCV).

    - *Database*: The database will be created with the use of ObjectBox to store the user information.
    - *Analysis of workout information*: The workout information stored in the database will be analyzed to help predict the best progressive overload information, graphically show tracked workout information, and provide data for the computer vision software.

- **Outputs:**
    - *Progressive overload information*: The progressive overload recommendations for the user and previous progressive overload recommendations whether it be a pure numerical representation or graphical.
    - *Workout repetitions count*: The workout performed by the user and the number of times the user performed that workout.
    - *Previous workout information*: The workout information that was previously entered into the application whether in the numerical representation or graphical.