

Smart Step Milestone #1 Requirements

This document describes the requirements for the **first development milestone** (Milestone #1) of the **Smart Step** application.

Milestone #1 is focused on establishing the basic structure of the app and creating the initial user experience. At this stage, the foundation for the interface, navigation, and state management is laid, which will be gradually expanded in the following milestones.

The mockups define the overall appearance and expected behavior of the interface. Specific technical decisions (component structure, state handling, animation implementation) are left to the participants, as long as the final result follows the described logic and interaction patterns.

You can find the Smart Step **mockups here**:

<https://www.figma.com/design/aTiGCCavPLtgZNGXcV23H6/Smart-Step?node-id=0-1>

Milestone #1 Goal

- Implement the initial app launch flow with a Splash Screen
- Create the Profile Setup Screen for collecting basic user information
- Prepare the UI and navigation foundation for future activity tracking features

Icons

You may use Material Design icons where appropriate. If a suitable Material icon is not available, use the custom icons provided in the Figma mockups.

In Figma, any icon or image can be **exported** by selecting the element and clicking “Export” in the **right-hand panel**. In this panel, you can also choose the desired format (PNG, SVG, etc.).

Adaptive Layouts

The app must support two breakpoints:

- **Up to 840 dp** → mobile layout.
- **From 840 dp and above** → wide-screen layout.

Technical Requirements

Splash Screen

- Background: solid light blue color, without gradients.
- Center: a minimal walking person icon (app logo).

My Profile Screen (First Launch)

This screen is used to collect the user's basic physiological parameters required for accurate activity calculations (steps, distance, calories, etc.).

The screen is shown **only once** — on the very first app launch.

After the user completes or skips this step, the data is saved locally and the screen **must not appear again** on subsequent launches.

Screen Display Conditions

- The screen appears **immediately after the Splash Screen** on the first app launch.
- If the user has already completed or skipped this screen (profile data exists), it is **automatically skipped**.
- Profile data must be stored locally (DataStore / SharedPreferences or equivalent).

Top Bar

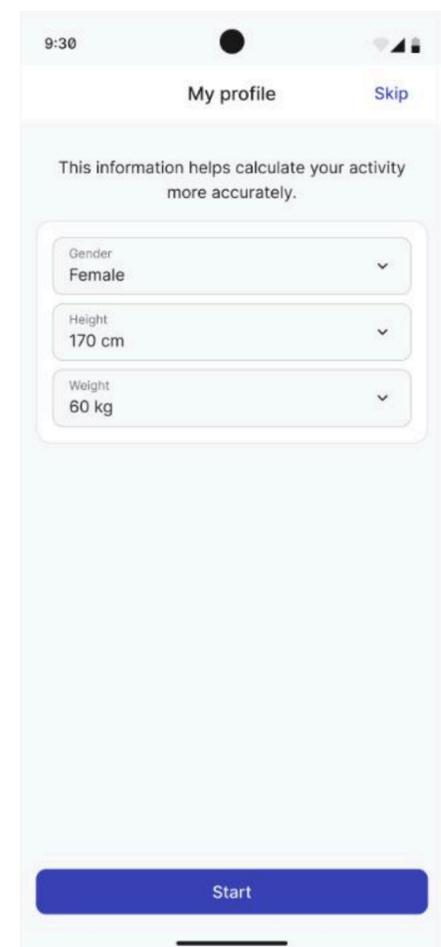
- Center — title: *My Profile*
- Top-right corner — **Skip** button

Skip button behavior:

- Allows the user to skip profile setup.
- Default profile values are applied.
- The user proceeds to the next step of the app flow.
- The My Profile screen must not be shown again automatically.

Subtitle

Below the title, display the following static text: *This information helps calculate your activity more accurately.*



Profile Fields

The screen contains three vertically stacked fields, grouped inside a single container.

1. Gender

- Type: Dropdown selector
- Default value: **Female**
- Available options:
 - Male
 - Female



Dropdown behavior:

- Tapping the field opens a dropdown menu anchored to the field.
- The dropdown displays all available gender options in a vertical list.
- The currently selected value is visually highlighted and marked with a check icon.
- Selecting an option immediately updates the field value and closes the dropdown.
- The selected value is used for further activity calculations.

2. Height

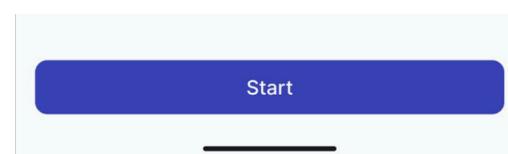
- Tapping the field opens the **Height Picker Dialog**.
- The field displays the currently selected value with the appropriate unit.
- Default value: 170 cm

3. Weight

- Tapping the field opens the Weight Picker Dialog.
- The field displays the currently selected value with the appropriate unit.
- Default value: 60 kg

Primary Action Button

- Positioned at the bottom of the screen
- Button text: *Start*



Start button behavior:

- Saves all selected profile values.
- Marks the onboarding step as completed.
- Navigates the user to the next screen of the app.
- The My Profile screen must not be shown again on future app launches.

General Behavior Notes

- UI state should be preserved across configuration changes.
 - If a picker dialog or dropdown was open before the configuration change, it should remain open after recreation.
 - Previously selected values must not be reset.
- Profile data must be accessible for future activity calculations.

Height Picker Dialog

This dialog is used to select the user's height value, which is required for distance calculation and other activity metrics.

The dialog opens when the user taps the **Height** field on the My Profile screen.

Dialog Structure

- Modal dialog displayed above the current screen
- The background behind the dialog is dimmed
- The dialog must not be dismissible by tapping outside of its bounds

Header

- Title: *Height*
- Subtitle: *Used to calculate distance*

Unit Selector

- Unit switcher with two options: **cm**, **ft/in**
- The active unit is visually highlighted and marked with a check indicator
- Switching units must not reset the actual height value
- Only the representation format changes

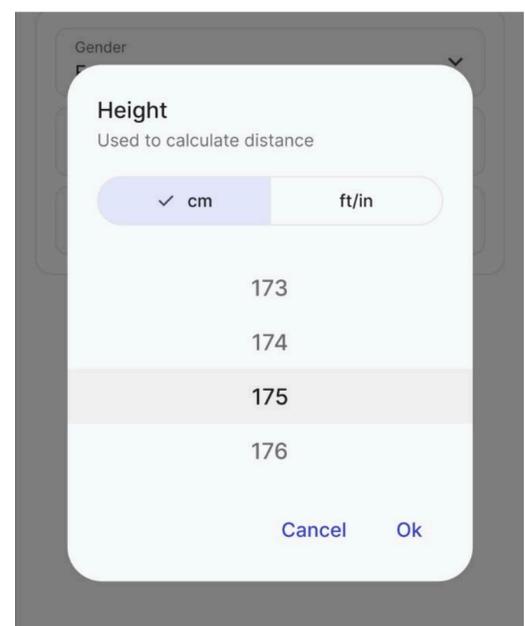
Height Selection — cm

- Displays a single vertical scrollable column of numeric values
- The selection indicator (highlighted center area) remains fixed
- Only the list of numbers scrolls vertically
- The value aligned with the selection indicator is considered selected
- Height is changed by scrolling the numeric column

Default value: 175 cm

Height Selection — ft/in

- Displays two separate vertical scrollable columns:
 - left column — feet (ft)
 - right column — inches (in)
- Each column:
 - scrolls independently
 - contains its own numeric values



- The selection indicator remains fixed for both columns
- Only the numeric values inside each column scroll
- The final height value is determined by the combination of ft + in

Default value (must match 175 cm): 5 ft 9 in

Conversion Rules

- Height values must be converted consistently between **cm** and **ft/in**
- The exact conversion formulas and examples can be found in the following references:
 - [Convert centimeters to feet and inches](#)
 - [Convert feet and inches to centimeters](#)
- Close values (e.g. 174 cm and 175 cm) may result in the same ft/in representation
- Minor rounding differences (± 1 inch) are acceptable

Action Buttons

- Cancel:
 - Closes the dialog
 - Discards all changes made inside the dialog
- Ok:
 - Confirms the selected value
 - Closes the dialog
 - Updates the Height field on the My Profile screen

State Handling

- The currently selected values must not be reset after configuration changes
- If the dialog was open before a configuration change, it must remain open afterward

Weight Picker Dialog

This dialog is used to select the user's weight value, which is required for calorie calculation.

The dialog opens when the user taps the **Weight** field on the My Profile screen.

Header

- Title: *Weight*
- Subtitle: *Used to calculate calories*

Unit Selector

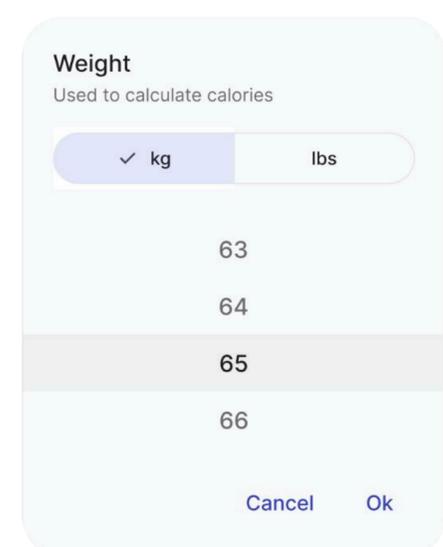
- Measurement units: **kg, lbs**

Default Values

- kg: 65
- lbs: 143 (Values must match after conversion)

Weight Selection

- A single vertical scrollable column with whole numeric values
- Interaction and behavior are identical to the Height Picker Dialog



Conversion Rules

- Conversion between kg and lbs is performed using the following formulas:
 - $\text{lbs} = \text{kg} \times 2.20462$
 - $\text{kg} = \text{lbs} \div 2.20462$
- Values are rounded to the nearest whole number
- Minor rounding differences are acceptable

Measurement System Synchronization

- Height and Weight pickers share the **same** measurement system.
- When the user switches units in one picker (e.g. from cm to ft/in or from kg to lbs), the other picker must **automatically switch** to the corresponding unit system.
- Existing values must be **recalculated** to the new units so that height and weight remain logically consistent.
- Unit switching affects only the representation; the actual physical values must stay equivalent after conversion.

Wide Screen Layout (840dp+)

On screens with a width of **840dp and above**, the overall structure of the My Profile screen remains the same as in the mobile layout.

The layout must not appear as a stretched version of the mobile UI.

Main Content

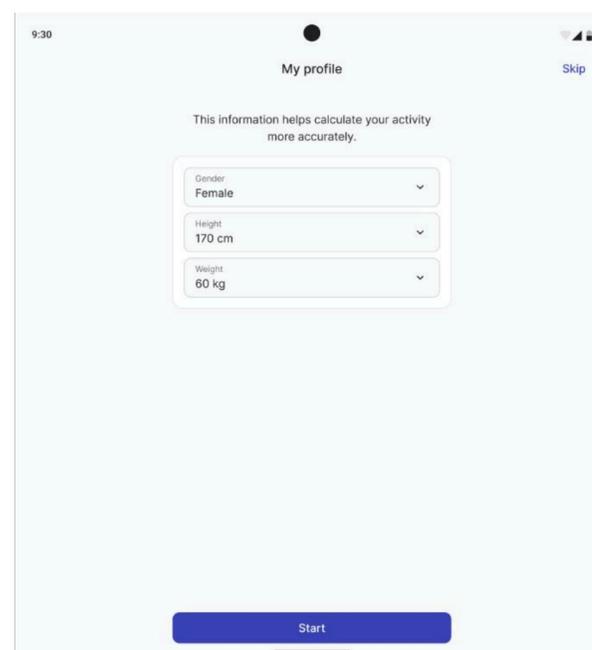
- The profile content block is centered horizontally on the screen.
- The content block (subtitle + Gender / Height / Weight fields) has a **fixed width of 394dp**.

Primary Action Button (Start)

- On wide screens, the Start button must not stretch across the entire screen width.
- The button width matches the content width (**394dp**).

Dialog Behavior

- The Height Picker and Weight Picker dialogs do not receive separate wide-screen adaptations.
- Dialog size and appearance remain the same as in the mobile layout.
- Dialogs are displayed centered on the screen over a dimmed background.



Main Screen (Home)

The Main Screen is the primary screen of the application, where the user can see their current daily activity progress.

The screen is focused on displaying the step count and progress toward the daily goal.

Top Bar

- A menu (hamburger) icon is placed on the left.
- The app name Smart Step is displayed in the center.
- Tapping the menu icon opens the Navigation Drawer.

Step Counter Card

- A large numeric value displaying the number of steps taken today.
- Below the number, the daily goal is shown in the format:
 - /6000 Steps

Progress Indicator

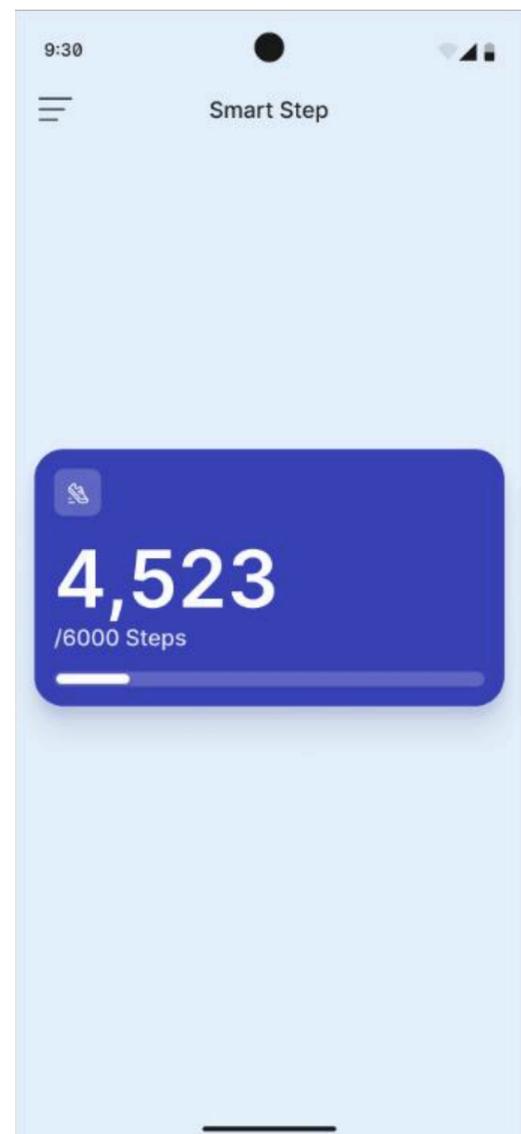
- A horizontal progress bar is displayed below the goal text.
- The progress bar represents the ratio of the current step count to the daily goal.
- The progress bar fill updates according to the step count value.

Decorative Element

- A decorative icon (e.g. a sneaker icon) is displayed in the upper area of the card.
- The icon has no functional behavior and does not respond to user interaction.
- The element is used purely as a visual accent.

Behavior

- The step count value and progress bar update according to the latest available data.
- At this stage, the screen does not include any additional metrics or control elements.



Permission Flow (Bottom Sheets)

Overall Flow

1. On the first app launch, after completing (or skipping) the Profile Setup Screen, the user is navigated to the Main Screen (Home).
2. Immediately after the Main Screen is shown for the first time, the app requests Physical Activity / Motion Sensors permission via a system dialog.

3. If the permission is denied, explanatory Bottom Sheets are shown according to the user's actions.

Without this permission, step counting is not possible.

Requested Permissions

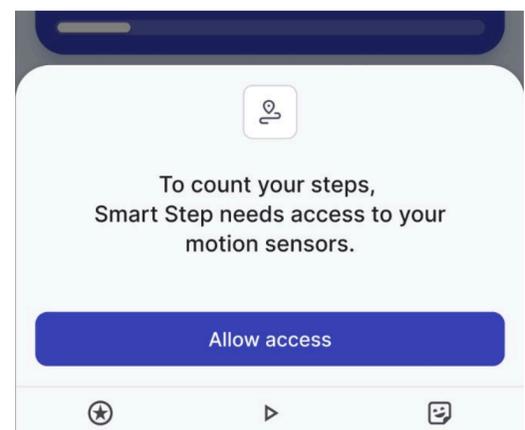
- **Physical Activity / Motion Sensors** — required.
- **Background activity access** — optional, but recommended.

General Rules

- All permissions are requested via **system dialogs**.
- Bottom Sheets are used only to explain the consequences and guide the user.
- Bottom Sheets do not replace or imitate system permission dialogs.
- Bottom Sheet 1 and Bottom Sheet 2 must not be dismissible until the required permission is addressed.

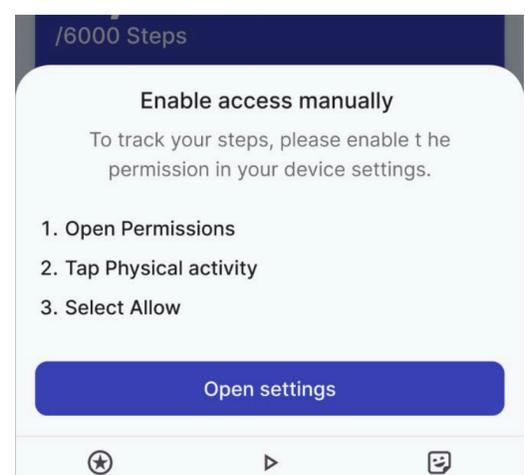
Bottom Sheet 1 — After First Denial

- Shown after the user denies the physical activity permission for the first time.
- Explains that step counting requires access to motion sensors.
- Primary action: **Allow access**
- Tapping the button opens the system permission dialog again.
- If denied again, Bottom Sheet 2 is shown.



Bottom Sheet 2 — Manual Permission

- Shown after the user denies the permission twice.
- Explains that the permission must now be enabled manually via system settings.
- Primary action: **Open settings**
- Opens the system settings screen.
- If the permission is not granted manually:
 - step counting does not work,
 - this Bottom Sheet is shown again on every app launch.



Bottom Sheet 3 — Background Access Recommended

This Bottom Sheet is shown after the user has granted the physical activity permission.

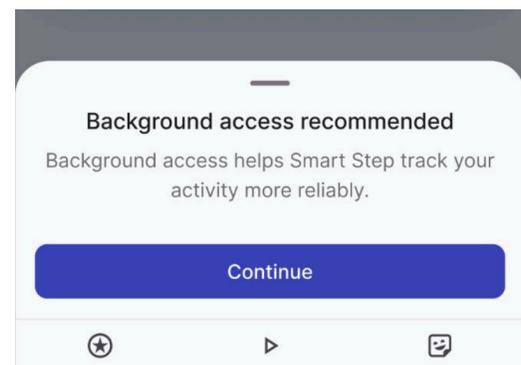
The purpose of this step is to explain that allowing the app to run in the background helps Smart Step perform background tasks more reliably when the app is not open.

This permission controls whether the app is allowed to continue background execution. Since Android may restrict background activity to save battery, granting this permission reduces such limitations and improves continuity of step tracking and updates.

User Action

Tapping Continue opens the standard Android system dialog for allowing background execution.

- If the user grants the permission:
 - background step tracking works more reliably.
- If the user denies the permission:
 - the app continues to work,
 - background activity may be limited by the system.



Implementation Note

When Continue is tapped, the app should trigger the following system intent:

`ACTION_REQUEST_IGNORE_BATTERY_OPTIMIZATIONS`

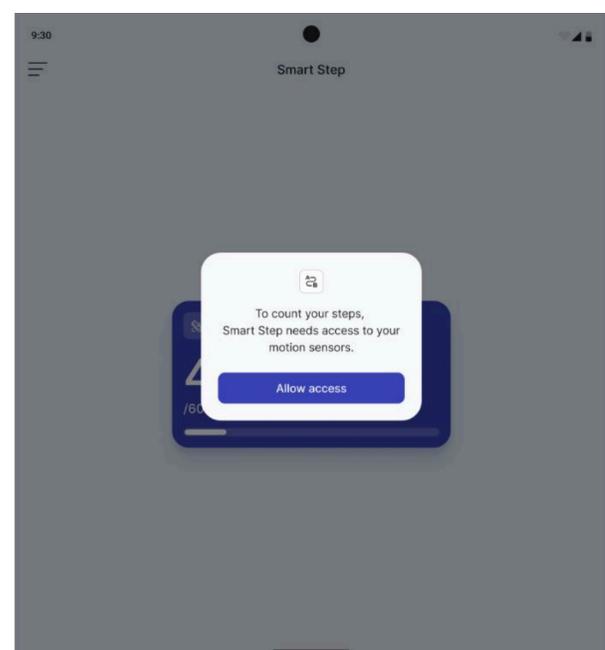
This intent opens the system dialog that allows the user to permit the app to run in the background with fewer system restrictions.

Permission Flow — Wide Screen Adaptation (840dp+)

- All permission messages (Bottom Sheet 1, Bottom Sheet 2, Bottom Sheet 3) are displayed as **modal dialogs** on wide screens.
- The dialog is shown centered on the screen over a dimmed background.

Behavior

- The permission logic, sequence, and display conditions remain **exactly the same** as on mobile devices.
- Only the presentation format changes:
 - Mobile devices → Bottom Sheets
 - Wide screens (840dp+) → Dialogs
- Blocking and non-blocking behavior follows the rules defined in the main Permission Flow section.



Navigation Drawer

The Navigation Drawer provides access to the main sections of the app and actions related to user settings and the current step tracking state.

The drawer opens when the user taps the **menu (burger) icon** on the **Main Screen (Home)**.

General Behavior

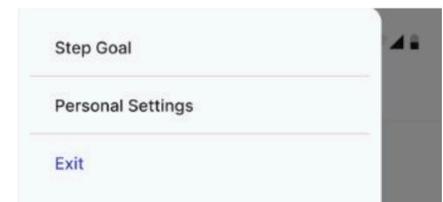
- The Navigation Drawer slides in from the left side of the screen.
- It is displayed above the main content.
- The drawer can be closed by:
 - swiping it back,
 - tapping outside the drawer area,
 - selecting a menu item.

State 1 — Default State

This is the standard state displayed under normal app conditions.

Menu Items

- Step Goal - opens the screen for configuring the daily step goal.
- Personal Settings - opens the user's personal settings screen.
- Exit - Opens an exit confirmation dialog.

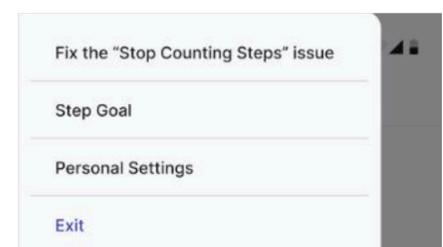


State 2 — Background Access Issue State

This state is shown only when the user has not granted background execution access to the app.

Additional Menu Item

- Fix the *“Stop Counting Steps”* issue
 - Displayed **at the top** of the Navigation Drawer.
 - Has higher priority than the default menu items.
 - Opens the existing **Bottom Sheet 3 — Background Access Recommended** to explain and request background step tracking.



Item Behavior

- Tapping the item opens Bottom Sheet 3 — Background Access Recommended that explains why background access is needed for proper step tracking.

After Permission Is Granted

- The Fix the *“Stop Counting Steps”* issue item is no longer displayed.
- The Navigation Drawer returns to the Default State.

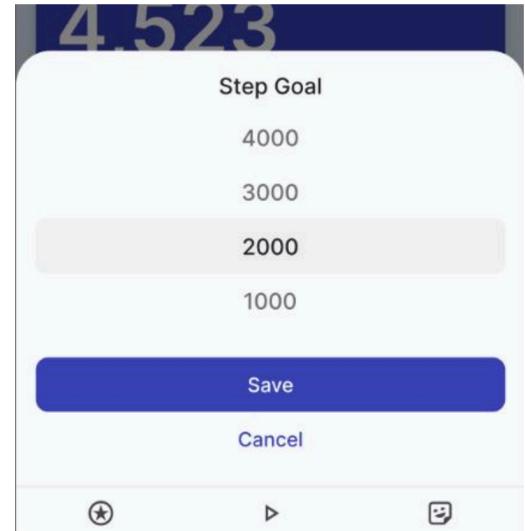
Step Goal Bottom Sheet

This Bottom Sheet is used to configure the **daily step goal**. The goal defines the value against which the current step count is compared on the Main Screen (Home).

The Bottom Sheet opens when the user selects **Step Goal** from the Navigation Drawer.

Presentation

- The Bottom Sheet slides up from the bottom of the screen over the current content.
- The underlying screen is dimmed.
- The content inside the Bottom Sheet can scroll vertically if it does not fit within the available screen space.
- A centered title is displayed at the top: *Step Goal*.



Goal Selection

- A vertical scrollable column of numeric values is displayed below the title.
- The column contains daily step goal values in the range:
 - from **1000** to **40000** steps.
- Values change via vertical scrolling.
- The selection indicator remains fixed, while only the list of numbers scrolls.
- The value aligned with the selection indicator is considered selected.
- The currently saved goal is preselected when the Bottom Sheet is opened.

Actions

- **Save**
 - Saves the selected value as the new daily goal.
 - Closes the Bottom Sheet.
 - Updates the goal display on the Main Screen (Home).
- **Cancel**
 - Closes the Bottom Sheet.
 - Discards all changes and keeps the previous goal value.

Behavior And State Handling

- The Bottom Sheet does not close automatically when the value changes.
- The user must explicitly confirm or cancel the changes.
- Closing the Bottom Sheet without saving behaves the same as the **Cancel** action.
- The selected value must not be reset after configuration changes (e.g. screen rotation) while the Bottom Sheet is open.
- If the Bottom Sheet was open before a configuration change, it must remain open afterward.

My Profile (Personal Settings Screen)

The My Profile screen is used to edit the user's personal data after the initial app setup.

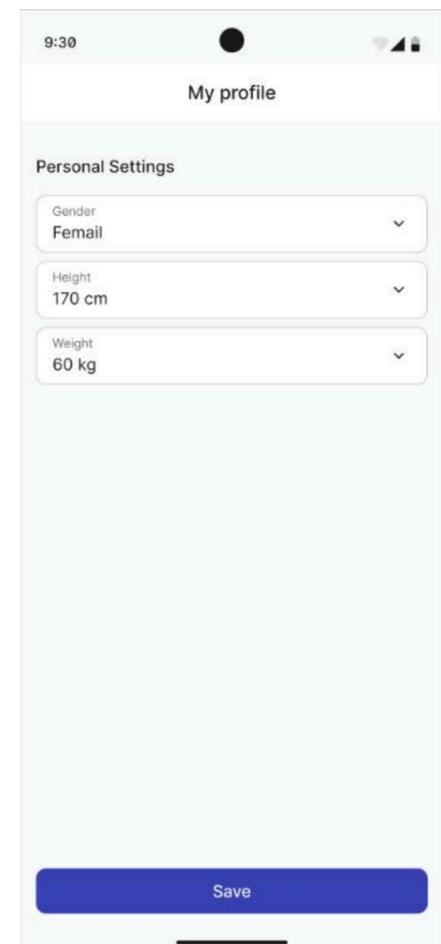
The screen is opened from the Personal Settings item in the Navigation Drawer.

Relation to Onboarding My Profile

This screen fully reuses the logic, structure, and behavior of the **My Profile Screen (First Launch)** described earlier in the document. All fields, pickers, dialogs, and interaction rules remain unchanged.

Relation to Onboarding My Profile

- The **Skip** button is not displayed.
- The informational text *"This information helps calculate your activity more accurately"* is **not shown**.
- Instead of the description, a simple title **Personal Settings** is displayed.



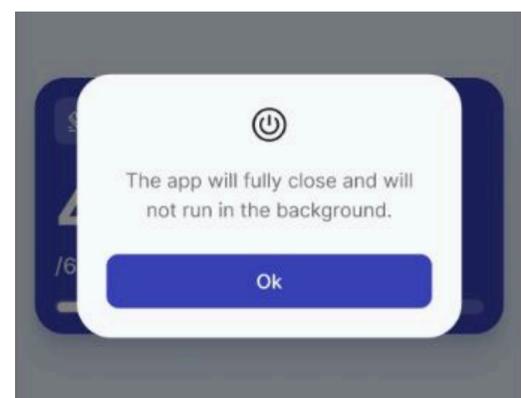
Exit Confirmation Dialog

This dialog is used to confirm a **full app exit**. It informs the user that after exiting, the app **will not run in the background** and step counting will stop.

The dialog is shown when the user selects **Exit** from the Navigation Drawer.

Content

- An icon visually associated with power off or app termination.
- A confirmation message: *"The app will fully close and will not run in the background."*
- **Ok** button:
 - Confirms the user's intent to exit the app.
 - Initiates full application termination.
- After confirmation:
 - all active app processes are stopped,
 - background execution is not maintained,
 - step counting stops until the app is launched again.
- The app must not continue running in the background after this action.
- The app must not attempt to restart background processes after an explicit user exit.
- The next app launch is treated as a new session.



Useful Links for This Challenge

- [Guide to app architecture](#)
- [Create a Splash Screen](#)
- [UX With Material3](#)
- [Full Guide to Material3 Theming](#)
- [Request runtime permissions](#)
- [Bottom sheets](#)
- [DataStore](#)
- [Physical Activity Permission](#)
- [Ignore Battery Optimization](#)
- [Save data in a local database using Room](#)
- [The Full Jetpack Compose Responsive UI Crash Course](#)
- [How to Save & Restore the Scroll Position of a LazyColumn Persistently](#)
- [Stateful vs. Stateless Composables](#)
- [State Hoisting in Compose](#)
- [Managing State in Jetpack Compose \(Codelab\)](#)