

Functional Requirements Document (FRD)

Project: BurnBot – AI-Powered Fitness Bestie

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1. Introduction

Purpose:

This document defines the detailed functional and non-functional requirements for BurnBot, a next-generation fitness application that leverages AI and personalization to help users build sustainable fitness habits. This FRD is aligned with the Business Requirements Document (BRD) and will serve as a blueprint for system design, development, and testing of the MVP (Minimum Viable Product).

Scope:

This document covers the MVP scope, focusing on:

- User Registration and Secure Login
- Personalized Profile Setup
- AI Chatbot for Motivation and Coaching
- Dashboard for Progress Tracking
- Mood & Energy Tracking
- Accountability Buddy System

Future enhancements will be noted but not included in the MVP delivery.

2. Functional Requirements

2.1 User Registration

Description: Enable users to register through multiple platforms.

Requirements:

- FR-01: The system shall provide registration options via:
 - Email and password
 - Phone number with OTP
 - Google login via OAuth
 - Apple ID via OAuth
- FR-02: The system shall validate user input using the following:
 - Email must follow the standard format and be unique
 - Password must include a minimum of 8 characters, 1 uppercase, 1 number, 1 special character
 - Phone number must follow the E.164 international format
- FR-03: The system shall verify users using:
 - OTP sent to phone or email
 - Expiry time of 5 minutes per OTP, with a 3-attempt resend limit
- FR-04: The system shall hash and store passwords securely using bcrypt.

2.2 Secure Login

Description: Enable secure access through authentication and 2FA.

Requirements:

- FR-05: The system shall allow login via:

- Email and password
 - Phone and OTP
 - Google/Apple login
 - FR-06: The system shall implement two-factor authentication (2FA) via:
 - OTP sent to verified device/email
 - TOTP via authenticator app
 - FR-07: The system shall lock the user out after 5 failed login attempts in 15 minutes.
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2.3 Personalized Profile Setup

Description: Gather user data to generate tailored fitness plans.

Requirements:

- FR-08: The system shall prompt new users to enter:
 - Full Name
 - Date of Birth (DOB must ensure the user is at least 13 years old.)
 - Gender identity (Male, Female, Non-binary, Prefer not to say)
 - Height (inches/cm), Weight (lbs/kg)
 - Fitness goal (Lose Weight, Gain Muscle, Maintain Health, Increase Endurance)
 - Fitness level (Beginner, Intermediate, Advanced)
 - Workout time preference (Morning, Afternoon, Evening)
 - Dietary preferences (Vegan, Vegetarian, Keto, None)
 - FR-09: The system shall store this data and generate a suggested routine plan.
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2.4 AI Chatbot Coaching

Description: Act as a smart motivational coach and daily assistant.

Requirements:

- FR-10: The system shall include a chatbot accessible from the home tab.
 - FR-11: The chatbot shall support free text input and provide:
 - Custom workout suggestions
 - Meal/snack suggestions based on dietary preferences
 - Daily reminders (drink water, move, log food)
 - Fitness tips, mindset coaching, motivational check-ins
 - FR-12: The chatbot shall personalize replies using user profile data.
 - FR-13: The chatbot shall allow users to:
 - Set recurring daily reminders
 - Ask questions (e.g., “What’s a quick 10-minute ab workout?”)
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2.5 Progress Dashboard

Description: Provide users with a visual breakdown of performance.

Requirements:

- FR-14: The dashboard shall show:
 - Daily activity log
 - Streaks (consecutive days of check-in)
 - Calories burned (manual or synced)
 - Milestones (first 7 days, 1-month streaks, etc.)

- FR-15: The system shall allow filtering by:
 - Date range (7/30/90 days)
 - Workout type
 - Goal category
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2.6 Mood & Energy Tracking

Description: Log user mood and energy to improve personalization.

Requirements:

- FR-16: After each workout, the system shall prompt the user to rate:
 - Mood (scale of 1 to 5 with emojis)
 - Energy level before and after workout
 - FR-17: The system shall use these inputs to suggest future workout adjustments.
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2.7 Accountability Buddy Mode

Description: Users can invite and track progress with a friend.

Requirements:

- FR-18: The system shall allow users to:
 - Invite a friend via phone or email
 - Share streaks and performance data
 - Receive nudges (e.g., “Your buddy skipped today — send encouragement?”)
 - FR-19: Users shall have the option to chat or send reactions within the app.
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3. Non-Functional Requirements (NFRs)

- NFR-01: System uptime must exceed 99.9% monthly.
 - NFR-02: All personal and fitness data must be encrypted (AES-256) and protected via HTTPS (TLS 1.2+).
 - NFR-03: App must load main dashboard in under 3 seconds.
 - NFR-04: App must be compatible with iOS 14+ and Android 10+.
 - NFR-05: Chatbot response time must not exceed 1.5 seconds.
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4. Assumptions & Constraints

- Users have smartphones with internet access.
 - Users consent to notifications and health data processing.
 - Initial launch limited to U.S. users.
 - Only the English language is supported in MVP.
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5. Out of Scope (MVP)

The following features are planned but excluded from the MVP:

- Photo-based calorie scanner using food recognition
- Syncing with wearable devices (Apple Watch, Fitbit, Whoop)
- 3D workout visuals using smart glasses
- Advanced habit-building AI with emotional analysis
- Multi-language support