

# Taka Dorkar Pro: AI-Driven Finance & Business Management System

This document outlines the functional and non-functional requirements for **Taka Dorkar Pro**, an AI-powered finance and business management application that combines personalized finance tracking with multi-user, business-centric features.

## 1. Functional Requirements (FR)

These requirements describe the specific actions and services the system must be able to perform.

### 1.1 Core Personal Finance Management

FR ID	Requirement Description	Source/AI Component
FR 1.1.1	The system must automatically scan and detect transactions from user SMS messages and emails <sup>111111</sup> .	NLP/ML Models (spacy/HuggingFace <sup>2</sup> )
FR 1.1.2	The system must be able to process localized Bangladeshi financial patterns, including Bangla-English mixed messages and mobile wallet transactions (bKash, Nagad, Rocket) <sup>3333</sup> .	Localized NLP
FR 1.1.3	The system must categorize and record transactions instantly without manual entry <sup>4444444444</sup> .	AI Analytics Engine <sup>5</sup>

<b>FR 1.1.4</b>	The system must provide weekly, monthly, and yearly financial insights and identify spending trends.	AI Analytics Engine
<b>FR 1.1.5</b>	The system must predict next month's spending based on historical data.	Facebook Prophet/LSTM
<b>FR 1.1.6</b>	The system must detect suspicious messages, identify fake transaction alerts, and warn the user immediately.	Anomaly/Fraud Detection Models
<b>FR 1.1.7</b>	The system must allow users to create and adjust personal budgets with AI-suggested adjustments to stay on track	Smart Budgeting Assistant

## 1.2 Business/Workplace Management (Extended Features)

<b>FR ID</b>	<b>Requirement Description</b>	<b>Source/AI Component</b>
<b>FR 1.2.1</b>	Users must be able to create a <b>Business/Workplace</b> and invite other users to join with specific roles (Owner, Manager, Employee, Accountant).	Backend/API (FastAPI)
<b>FR 1.2.2</b>	The system must allow the creation of <b>Departments</b> and assign users to them.	Backend/API
<b>FR 1.2.3</b>	Users in a department must be able to submit their <b>departmental expenses</b> for tracking.	Mobile/Web Dashboard

<b>FR 1.2.4</b>	The system must allow the business to <b>record employee salaries</b> (record-only, no payroll calculation).	Database (PostgreSQL)
<b>FR 1.2.5</b>	The system must calculate and display <b>Profit and Loss</b> (P&L) statements for the business/departments.	AI Analytics Engine

### 1.3 AI-Powered Inventory & Data Input

FR ID	Requirement Description	Source/AI Component
<b>FR 1.3.1</b>	The system must support <b>Inventory Management</b> , tracking stock, COGS, and suppliers.	Database
<b>FR 1.3.2</b>	The system must allow users to <b>upload spreadsheets/documents</b> , and the AI must automatically parse and extract necessary inventory or expense data.	NLP/ML & API
<b>FR 1.3.3</b>	The AI must forecast the <b>next month's inventory needs</b> based on current sales, historical trends, and <b>seasonal events</b> (e.g., Eid, Puja, Pahela Baishak).	Forecasting Models (Facebook Prophet/LSTM )
<b>FR 1.3.4</b>	The AI must identify and report which specific <b>products are underperforming or not selling</b> based on set sales expectations.	Anomaly/Trend Detection Models

<b>FR 1.3.5</b>	The AI must provide recommendations for <b>optimizing departmental budgets</b> and overall business spending.	GPT-based Models / AI Analytics Engine
-----------------	---	--

#### 1.4 User Roles and Access Control

FR ID	Role	Key Permissions
<b>FR 1.4.1</b>	<b>Owner</b>	Full administrative control. Can create/delete business, set salary records, invite/remove any user, and view all P&L/data.
<b>FR 1.4.2</b>	<b>Manager</b>	Can invite/remove Employees/Accountants, view department P&L, and approve departmental expenses. Cannot delete the business or set salaries.
<b>FR 1.4.3</b>	<b>Accountant</b>	Can input/update inventory data, record salaries, and view all business P&L/financial reports. Cannot invite users.
<b>FR 1.4.4</b>	<b>Employee</b>	Can only submit and view their own departmental expenses. Cannot view P&L, salaries, or inventory.

## 2. Non-Functional Requirements (NFR)

These requirements specify criteria that can be used to judge the operation of the system, rather than specific behaviors.

### 2.1 Security & Privacy

NFR ID	Requirement Description	Related Component
NFR 2.1.1	All user data must be protected using <b>AES-256 Encryption</b> .	Security
NFR 2.1.2	Sensitive data processing must utilize <b>On-device ML (TensorFlow Lite)</b> to keep personal financial information on the user's device.	On-device ML
NFR 2.1.3	Access to SMS and email data must be strictly <b>consent-based and permission-based</b> .	Permission-based Access Control
NFR 2.1.4	Secure access for Gmail APIs must use the <b>OAuth 2.0 protocol</b> .	Secure Gmail access

## 2.2 Performance & Scalability

NFR ID	Requirement Description	Related Component
NFR 2.2.1	The application must maintain high speed and reliability using a high-performance backend (FastAPI <sup>28</sup> ) and a scalable database (PostgreSQL <sup>292929</sup> ).	FastAPI <sup>30</sup> , PostgreSQL <sup>31</sup>
NFR 2.2.2	The backend must support effortless scaling using <b>Docker and Kubernetes</b> for containerized deployment <sup>32</sup> .	Deployment <sup>33</sup>

<b>NFR 2.2.3</b>	AI-driven insights and reports (e.g., monthly P&L, inventory forecast) must be generated within <b>5 seconds</b> of the user requesting them.	AI Models
------------------	---	-----------

### 2.3 Usability & Maintainability

<b>NFR ID</b>	<b>Requirement Description</b>	<b>Related Component</b>
<b>NFR 2.3.1</b>	The mobile application must be a <b>responsive cross-platform app</b> (optimized for Android) built with Dart (Flutter).	Programming Language
<b>NFR 2.3.2</b>	The UI must be localized and intuitive for Bangladeshi users, requiring no change in their existing behavior for transaction tracking.	Practicality
<b>NFR 2.3.3</b>	All code must be well-documented and follow standard Python, Dart, and JavaScript practices for ease of maintenance.	Programming Languages
<b>NFR 2.3.4</b>	The system must provide reliable user authentication and push notifications via <b>Firebase/FCM</b> .	AI Tools