

# 360 Feedback

## Employee Performance Review System

### Technical Documentation

#### Project Information

<b>Project Name:</b>	360 Feedback
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*A comprehensive performance appraisal and review system  
that streamlines feedback collection across organizational hierarchies.*

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# 1. Executive Summary

360 Feedback is a comprehensive employee performance appraisal and review system designed to streamline the feedback collection process across organizational hierarchies.

The system enables:

- Peer-to-peer feedback collection for holistic employee evaluation
- Manager reviews for direct report assessments
- Lead final appraisals with ratings and promotion decisions
- Self-assessment through the "Know About Me" (KAM) feature
- Admin dashboard for HR to monitor feedback activity and generate reports

The platform supports multiple user roles (Employee, Manager, Lead) with role-based access control, ensuring data privacy and appropriate visibility of feedback information.

## 2. Project Overview

### 2.1 Purpose

The 360 Feedback system addresses the need for a structured, digital approach to employee performance reviews. Traditional paper-based or spreadsheet-driven appraisal systems are time-consuming, prone to data loss, difficult to track, and lack anonymity for peer feedback.

### 2.2 Key Benefits

- Streamlined Process - Automated workflow from feedback request to final appraisal
- Data Security - Role-based access ensures appropriate data visibility
- Real-time Tracking - Monitor feedback completion status in real-time
- Comprehensive Reports - Generate PDF reports with all feedback data
- Email Notifications - Automatic email alerts for feedback assignments
- Self-Service Portal - Employees can view their ratings and submit self-assessments

### 2.3 Technology Stack

Component	Technology
Frontend	React with TypeScript
UI Components	Shadcn/UI + Tailwind CSS
Backend	Express.js with TypeScript
Database	PostgreSQL
ORM	Drizzle ORM
Authentication	Replit Auth (OpenID Connect)
Email Service	Nodemailer with Outlook SMTP
PDF Generation	jsPDF

## 3. System Architecture

### 3.1 High-Level Architecture

The system follows a three-tier architecture:

- Frontend (React) - User interface layer handling all user interactions
- Backend (Express) - Business logic layer processing requests and managing data
- Database (PostgreSQL) - Data persistence layer storing all application data

### 3.2 Request Flow

1. User makes a request from the React frontend
2. Request is sent to Express backend via API
3. Backend validates request and checks authentication
4. Backend queries PostgreSQL database via Drizzle ORM
5. Response is sent back to frontend
6. React updates the UI based on response

## 4. Database Design

### 4.1 Core Tables

- employees - Stores all employee information including role and hierarchy
- appraisal\_cycles - Defines time periods for performance reviews
- feedback\_requests - Tracks peer feedback assignments
- peer\_feedback - Stores submitted peer feedback with ratings
- manager\_reviews - Manager evaluations of team members
- lead\_reviews - Final appraisals with promotion/increment decisions
- know\_about\_me - Employee self-assessments

### 4.2 Key Relationships

The database uses foreign key relationships to maintain data integrity:

- Employees can have a manager (manager\_id) and lead (lead\_id)
- Feedback requests link target employee to reviewer
- All reviews are tied to appraisal cycles for period tracking

## 5. Features & Functionality

### 5.1 Peer Feedback System

Enables employees to provide anonymous feedback about their colleagues. Employees rate colleagues on 5 parameters (1-5 scale): Technical Skills, Communication, Teamwork, Problem Solving, and Leadership.

### 5.2 Manager Reviews

Allows managers to formally evaluate their direct reports. Managers document goals achieved, areas for growth, training needs, and promotion readiness.

### 5.3 Lead Final Appraisals

Leads review all feedback and make final decisions including final rating, increment percentage, promotion decision, and remarks.

### 5.4 Know About Me (KAM)

Employees document their achievements in categories: Projects & Contributions, Learning & Growth, Leadership & Team Building, Problem Solving & Strengths, and Extra Efforts.

### 5.5 Admin Dashboard

Central monitoring hub with Recent Activity view (sorted by feedback recency), All Employees view, detailed reports, and PDF export capability.

## 6. User Roles & Permissions

### 6.1 Role Descriptions

Employee: Can submit peer feedback, view own ratings, fill KAM form. Cannot see others' feedback.

Manager: All employee permissions plus can review direct reports, assign feedback requests, view team feedback.

Lead: All manager permissions plus can provide final appraisals, make promotion/increment decisions, view comprehensive reports.

Admin: Separate login, can view all employee data, monitor feedback activity, download detailed PDF reports.

## 7. API Documentation

### 7.1 Key Endpoints

Method	Endpoint	Description
GET	/api/auth/user	Get current user info
GET	/api/employees	List all employees
GET	/api/feedback-requests/my-t...	Get pending feedback tasks
POST	/api/peer-feedback	Submit peer feedback
GET	/api/my-ratings	Get own ratings
GET	/api/know-about-me	Get employee KAM
POST	/api/know-about-me	Save KAM data
GET	/api/manager/team-members	Get manager's team
POST	/api/manager-reviews	Submit manager review
POST	/api/lead-reviews	Submit lead review
POST	/api/admin/login	Admin login

## 8. Installation Guide

### Prerequisites

- Node.js 18+ installed
- PostgreSQL database
- npm package manager

### Installation Steps

1. Clone the repository from Git
2. Run 'npm install' to install dependencies
3. Run 'npm run db:push' to create database tables
4. Run 'psql \$DATABASE\_URL < scripts/seed-data.sql' to seed data
5. Configure OUTLOOK\_EMAIL and OUTLOOK\_PASSWORD secrets
6. Run 'npm run dev' to start the application

## 9. User Guide

### 9.1 Employee Login

Go to landing page, click 'Sign In', authenticate with Replit. System automatically links account based on email.

### 9.2 Submitting Peer Feedback

Go to 'Feedback Tasks', click 'Give Feedback', rate on all 5 parameters, write feedback, click 'Submit'.

### 9.3 Viewing Ratings

Go to 'My Ratings' to view final rating and lead remarks.

### 9.4 Know About Me

Go to 'Know About Me', fill relevant sections, click 'Save'.

## 10. Admin Dashboard

### 10.1 Access

URL: /admin/login

Credentials: admin / admin

### 10.2 Features

- Recent Activity View - Employees sorted by most recent feedback submission
- All Employees View - Complete employee directory with hierarchy
- Feedback Status - Track completed vs pending assignments
- Detailed Reports - View comprehensive employee reports
- PDF Export - Download professional reports

# 11. Security Features

## 11.1 Authentication

- User Authentication via Replit Auth (OpenID Connect)
- Admin Authentication via separate username/password system
- Secure session management with httpOnly cookies

## 11.2 Data Protection

- Role-based access control (RBAC)
- SQL injection prevention via parameterized queries
- XSS prevention through proper escaping
- TLS encryption for email transport

# 12. Troubleshooting

## Common Issues

Employee account not linked:

- Ensure email in database matches Replit login email
- Linking happens automatically on first login

Database schema changes not applying:

- Run 'npm run db:push' to sync schema

Email notifications not sending:

- Verify OUTLOOK\_EMAIL and OUTLOOK\_PASSWORD secrets
- Check server logs for SMTP errors



# Document Information

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*This document provides comprehensive technical documentation for the 360 Feedback Employee Performance Review System.*

For questions or support, please contact the development team.