Proactive attrition system

Executive Summary

Employee attrition is a costly and recurring problem that reduces institutional knowledge and increases recruitment and training costs. This proposal recommends the design and delivery of a Proactive Attrition Risk System that uses predictive analytics and machine learning to identify employees at high risk of leaving, so that targeted retention actions may be applied before turnover occurs. This document contains Project Planning, Stakeholder Analysis, Database Design, and UI/UX Design sections.

1. Project Planning

Our Goals

Find the real reasons why employees leave.

Predict which employees are at high risk of leaving soon.

Give HR dashboards and alerts so they can step in and help.

What We Will Deliver

working prediction model.

A dashboard for HR to see employee risk scores.

The reports and tools to monitor and update the model automatically.

Technology We'll Use

Code: Python (using common libraries like pandas and scikit-learn).

Tools: Docker, cloud services, and standard data warehouses.

2. Stakeholder Analysis Project Roles & Safety

Stakeholders

Sponsor (Exec): Approves the project and budget.

Project Lead: Manages the work.

HR Team: Will use the final product.

Data Teams: Build the model and provide data.

IT & Legal: Support the system and ensure compliance.

Employees: Their data is used and must be protected.

Responsibilities

Do the Work: Data Science & Engineering.

Own the Project: Project Lead & Sponsor.

Give Advice: Legal, IT, and HR.

Get Updates: Leadership and managers.

Privacy & Ethics

Use only the data we need.

Check the system for bias.

Follow all privacy laws and notify employees.

Strictly control who can see the data.

How the Data System Works

3. Database Design

How the Data Flows

We'll gather data from large dataset websites like kaggle.

This data is then cleaned, organized, and sent to the new system to create the predictions and dashboard.

What Data We're Storing

We are organizing the data into a few key categories:

Employee Info: Job title, department, location, and hire/leave dates.

Pay & Performance: Salary, bonuses, and past performance ratings.

Engagement: Survey results, training history, and absences.

The Prediction: The final risk score (who might leave).

How We Keep It Fast & Safe

The system is designed to be fast, even with large amounts of data. All sensitive employee information will be encrypted, and access will be strictly controlled to protect everyone's privacy.

4. UI/UX Design How the Dashboard website Will Look and Work

Who It's For

HR Team: To see which groups are at risk and get recommendations.

Managers: To check their own team's risk and find action plans.

Analytics Leads: To run reports and find the root causes of turnover.

Key Features (What You'll See)

Main Dashboard: A one-glance summary of company-wide risk, top reasons for turnover, and current trends.

Employee Profile: A page for an individual employee showing their risk score, why the score is high (e.g., "low pay," "no promotion"), and suggested actions.

Team View: A screen for managers to see risk across their whole team.

Alerts: Automatic emails or messages when an employee's risk becomes high, so you can act quickly.

The Look and Feel

Simple & Clean: The design will be easy to understand.

Clear Visuals: We'll use colors (like red, yellow, green) to show risk levels.

Easy to Use: The dashboard may be hosted on a secure website, making it work on both computers and mobile phones and accessible to everyone.

Our team of data scientists

Role	Name
Team Leader	Ahmed Fekry Mohamed
Member	Yousif Moaz ELbadry
Member	Mazen Kamal Morsy
Member	Shaimaa Ahmed Fouad
Member	Youssef Ahmed Fouad