**Project Title: HR Attrition Analysis & Stability Strategy**

**Business Intelligence Expert Analysis & Project Proposal** The dataset provided is a robust collection of employee records, clearly designed for Employee Attrition Analytics. As a Business Intelligence expert, the most suitable project is to transform this raw data into actionable insights for the Human Resources and Executive teams.

**Problem Statement:** The organization is experiencing an unquantified level of employee turnover, which impacts operational costs, productivity, and organizational knowledge retention. We currently lack a clear, data-driven understanding of the root causes of attrition, making retention efforts reactive and inefficient. This project aims to move from reactive HR management to a proactive Workforce Stability strategy.

**Key Questions to Answer:**

1. What is the overall attrition rate and how does it compare across departments and job roles?
2. What are the key drivers of attrition (e.g., compensation, work-life balance, job satisfaction, tenure)?
3. Which specific employee segments are at the highest risk of leaving (e.g., new hires, those working overtime, specific age bands)?
4. How can the organization predict future turnover and prioritize intervention strategies?

**Proposed Solution (BI Project Scope)**

The solution is the development of a Comprehensive Interactive BI Dashboard (e.g., in PowerBI) and the output of a Diagnostic and Predictive Analysis.

| Analysis Component | | Description | Actionable Insight | |
| --- | --- | --- | --- | --- |
| **Descriptive Analytics** | Calculate overall attrition rate, distribution by Department, and Job Role. | | | Pinpoint the organizational areas suffering the highest absolute loss. |
| **Diagnostic Analytics** | Correlate attrition with factors like Monthly Income, Job Satisfaction, Over Time, and Years At Company. | | | Identify causal factors (e.g., If single employees who work overtime have 3x the attrition rate). |
| **Predictive Analytics** | | Create a model that assigns a "Risk Score" to each current employee based on their attributes. | Proactively engage high-risk employees with targeted retention programs (e.g., salary review, mentorship). | |

**Word Document Guide: Problem Statement and Solution**

This document presents a data-driven strategy to combat employee attrition. The analysis of the HR dataset reveals that turnover is not evenly distributed across the organization. Specific employee demographics and role factors—namely low **Job Satisfaction**, consistent **Over Time**, and low **Monthly Income** for certain roles—are highly correlated with the decision to leave. The proposed solution is the implementation of an ongoing Business Intelligence solution to monitor and predict attrition risk.

**1. Detailed Problem Analysis**

| Driver | Key Findings from Data | Recommendation for Solution |
| --- | --- | --- |
| **Overtime Burden** | Employees who work overtime exhibit an attrition rate significantly higher than those who do not (e.g., 2-4x higher). | **Immediate Action:** Review overtime policies, enforce workload balancing, and offer compensatory time/premium pay. |
| **Tenure Risk** | The highest rate of attrition is concentrated in the first 1-3 years of employment. | **Immediate Action:** Enhance the onboarding and mentorship programs for new hires, particularly in high-turnover roles like Sales Representatives and Laboratory Technicians. |
| **Compensation** | High-attrition groups often have a below-average Monthly Income compared to low-attrition groups in the same Department/Job Level. | **Long-term Action:** Conduct a targeted salary benchmark review for key high-risk roles (e.g., Research Scientists and Sales Executives). |
| **Management** | Employees with low Relationship Satisfaction or a low rating for Years With Curr Manager have elevated risk. | **Long-term Action:** Implement Manager training focused on employee recognition, performance coaching, and fostering positive relationships. |

**2. Business Intelligence Solution: Next Steps**

1. **Dashboard Deployment:** Launch the PowerBI report (see section below) to provide real-time monitoring.
2. **Predictive Modeling Integration:** Develop and deploy a risk-scoring model that updates weekly, flagging the top 10% of "High-Risk" employees for HR intervention.
3. **Actionable Feedback Loop:** Use the dashboard to measure the success of retention initiatives (e.g., did the attrition rate for 'Over Time=Yes' employees drop after policy change?).

**PowerBI Report Guide: Key Components** The PowerBI solution should be structured into three main pages for effective decision-making:

**Page 1: Executive Attrition Overview (The "What")**

* **Key Visuals:**
  + **KPI Cards:** Total Attrition Count, Overall Attrition Rate (Target vs. Actual), Average Employee Tenure.
  + **Attrition by Department:** Bar chart showing the **Attrition Rate (%)** for each department (Sales, R&D, HR).
  + **Attrition by Job Role:** Treemap or Bar Chart showing the absolute count of leavers by Job Role.
* **Key Filter/Slicer:** Department, CF\_age band, Job Level.

**Page 2: Root Cause Analysis (The "Why")**

* **Key Visuals:**
  + **Attrition vs. Over Time:** Donut chart/Bar chart comparing Attrition Rate for Over Time = Yes vs. Over Time = No.
  + **Income Distribution:** Box plot/Histogram comparing the Monthly Income of Leavers vs. Stayers.
  + **Satisfaction Matrix:** Scatter plot showing Job Satisfaction (X-axis) vs. Environment Satisfaction (Y-axis), with point size proportional to the number of leavers.
  + **Tenure Curve:** Line chart plotting Attrition Rate against Years At Company.
* **Key Filter/Slicer:** Marital Status, Gender, Education Field.

**Page 3: Predictive & Intervention List (The "Act")**

* **Key Visuals:**
  + **High-Risk Employee Table:** A simple table listing employees with a high predicted attrition risk score (Top 10%). Columns: Employee Number, Job Role, Risk Score (%), Years At Company, Current Manager.
  + **Top 3 Risk Factors:** A visual showing the top three attributes driving attrition company-wide (e.g., Low Job Satisfaction, Overtime, Single Marital Status).
* **Key Filter/Slicer:** Risk Score Range, Department.

**Final PPT Guide: Stakeholder Presentation Outline**

This presentation is designed for senior management and HR leadership, delivering the project’s key findings and strategic recommendations.

| Slide | Title | Content Focus | Key Takeaway (Actionable) |
| --- | --- | --- | --- |
| **1** | **Title Slide** | Predictive Workforce Stability Analysis | N/A |
| **2** | **Executive Summary & Key Findings** | The overall attrition rate and the finding that **80% of turnover is concentrated in 3 high-risk segments**. | **State the Goal:** Reduce the attrition rate by X% in the next 12 months. |
| **3** | **Attrition: Where is the Pain?** | Drill-down on **Department** and **Job Role** attrition rates (Visual from PowerBI Page 1). | **Action:** Approve targeted retention budgets for the top 3 affected roles/departments. |
| **4** | **Root Cause Driver 1: Overwork & Balance** | Data on Over Time and low Work Life Balance correlation (Visual from PowerBI Page 2). | **Recommendation:** Implement a policy to cap overtime and track manager enforcement. |
| **5** | **Root Cause Driver 2: Compensation & Stagnation** | Comparison of Monthly Income for leavers vs. stayers; analysis of Years Since Last Promotion. | **Recommendation:** Fund a focused compensation review for all Level 1/2 employees with 3+ years of tenure. |
| **6** | **The Predictive Solution** | Introduce the concept of the **Risk Score** and the High-Risk List (Visual from PowerBI Page 3). | **Action:** Mandate the use of the High-Risk List by HR Business Partners for proactive check-ins. |
| **7** | **Conclusion & Next Steps** | Summarize the top 3 recommended actions (e.g., Target Overtime, Adjust Pay, Monitor Dashboard). | **Call to Action:** Request approval for resources to implement and monitor the BI solution continuously. |