ZENVY PAYROLL PROJECT REPORT

Industrial Internship - Week 4

Date: 03 February 2026

1. Project Overview

Objective: To design and implement an automated payroll processing and visualization system for SaaS environments. The project focuses on data integrity, automated tax/PF calculations, and real-time dashboarding for corporate decision-making.

2. Tools and Technologies Used

2.1 Development Tools: VS Code (Development IDE), Jupyter (Data Exploration), Power BI Desktop (Visual Analytics).

2.2 Python Libraries: Pandas, NumPy, xhtml2pdf, and MySQL-Connector.

2.3 Data Storage: MySQL Database for structured storage and CSV for rapid data transfer.

3. Data Tools

Dataset: `zenvy_master_for_powerbi.csv`

Derived from merging employee master files, monthly attendance logs, and payroll registers. The dataset supports multi-departmental analysis across 5 core departments.

Key Metric	Calculated Value
Total Employee Records	20
Workforce Attendance Rate	93.64%
Total Monthly Payroll Cost	Rs.1,123,000.00

4. Visuals Created

4.1 Salary Distribution: Identifying compensation clusters and pay-scale variances.

4.2 Departmental Analytics: Visualizing resource allocation and budget consumption by department.

4.3 Executive KPIs: Dashboard cards displaying high-level metrics like Gross Pay, Deductions, and Net Payouts.

5. Dashboard Pages

The Power BI dashboard is structured into four specialized pages:

- **Page 1: Cover Page** - Introduction and project branding.
- **Page 2: Salary Distribution Analysis** - Deep dive into employee pay components.
- **Page 3: Department-wise Payroll Expenses** - Comparative analysis of departmental budgets.
- **Page 4: Executive Summary KPIs** - Final summary for leadership review.

6. Key Findings

6.1 Department Analysis: Engineering maintains the highest payroll load, while Sales exhibits the highest variance in overtime and incentive payouts.

6.2 Cost Breakdown: Total deductions (Tax + PF) stand at Rs.161,850.00, representing a significant portion of the corporate tax liability.

7. Files Delivered

The package includes: `power bi.pbix` (Dashboard), `zenvy_master_for_powerbi.csv` (Master Data), and `generate_final_pdf.py` (Automation Script).

8. How to Regenerate Dashboard

1. Update source CSV files with the latest payroll and attendance data.
2. Run the Python transformation script to refresh the master dataset.
3. Open Power BI and click "Refresh" to update all visuals instantly.

9. Skills Applied

Applied expertise in ETL Pipeline Construction, DAX Measure Optimization, UI/UX Design for Analytics, and Professional Documentation.

10. Conclusion

The Zenvy Payroll system successfully automates complex financial tasking and provides a transparent, data-driven framework for human resource management. The prototype is fully functional and ready for enterprise scaling.