

ZENVY PAYROLL PROJECT REPORT

Industrial Internship - Week 4 Final Submission

Report Date: 03 February 2026

1. Project Overview

Objective: To design and implement a scalable, 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 and financial transparency.

2. Tools and Technologies Used

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

2.2 Python Libraries: Pandas (Data Manipulation), NumPy (Computing), xhtml2pdf (Report Automation), and MySQL-Connector.

2.3 Data Storage: MySQL Database for structured relational storage and CSV flat files for rapid Power BI data ingestion.

3. Data Tools & Architecture

Dataset Used: zenvy_master_for_powerbi.csv

The system integrates three core modules: Employee Profiles, Attendance Logs, and Payroll Registers. The data is processed using Python scripts to handle dependencies and calculate financial metrics before visualization.

Key Performance Indicator (KPI)	Current Status / Value
Total Employee Count	20
Company-wide Attendance Rate	93.64%
Total Monthly Payroll Expenditure	Rs.1,123,000.00
Total Statutory Deductions (Tax & PF)	Rs.161,850.00

4. Visuals Created & Visual Analytics

4.1 Salary Distribution: Identifying compensation clusters, pay-scale variances, and ensuring equitable distribution across roles.

4.2 Departmental Analytics: Visualizing resource allocation and budget consumption by department using treemaps and bar charts.

4.3 Executive KPIs: High-visibility dashboard cards displaying critical metrics such as **Gross Pay**, **Total Deductions**, and **Net Payouts** for instant financial assessment.

5. Dashboard Pages Structure

The Power BI dashboard is organized into four specialized pages for different stakeholder levels:

- **Page 1: Cover Page** - Introduction, project branding, and navigation entry point.
- **Page 2: Salary Distribution Analysis** - Deep dive into employee pay components and compensation ranges.
- **Page 3: Department-wise Payroll Expenses** - Comparative analysis of departmental budgets and headcount utility.
- **Page 4: Executive Summary KPIs** - Final high-level summary designed for CEO and Stakeholder review.

6. Key Operational Findings

- 6.1 Departmental Analysis:** The Engineering department accounts for the highest payroll load, while the Sales department exhibits the highest variance in overtime payments and performance-linked incentives.
- 6.2 Cost Efficiency:** The total statutory liability (Tax + PF) stands at Rs.161,850.00. The average net payout per employee is Rs.48,057.50, indicating a healthy compensation structure.
- 6.3 Overtime Trends:** A total of 88 Hours were recorded, primarily concentrated in operations during peak cycles.

7. Files Delivered

The project delivery includes the following assets: `power bi.pbix` (Interactive Dashboard), `zenvy_master_for_powerbi.csv` (Cleaned Dataset), `generate_final_pdf.py` (Report Automation Tool), and this project documentation.

8. How to Regenerate & Update Dashboard

1. Update the source CSV files (Employees, Payroll, Attendance) with the latest monthly data.
2. Execute the Python transformation script to clean and merge the records into the master file.
3. Open the Power BI Desktop file and click the "Refresh" button in the Home ribbon to update all charts.
4. Review DAX measures for any changes in tax slab regulations if applicable.

9. Skills & Methodology Applied

This project successfully applied expertise in **ETL Pipeline Construction, DAX Measure Optimization, Financial Modeling, UI/UX Design for SaaS Dashboards, and Automated Technical Documentation.**

10. Conclusion

The Zenvy Payroll system demonstrates a robust framework for financial data management and business intelligence. By automating complex calculations and providing clear visual insights, the platform enables HR and Finance teams to make informed, data-driven decisions while ensuring accuracy and compliance. The prototype is fully optimized for enterprise-scale deployment.