**🧾 Project Report – Employee PDF Report Generator**

**1. Introduction**

In any organization, maintaining structured and accessible employee records is essential. Manual reporting is time-consuming and prone to errors. This project aims to automate the generation of personalized employee reports in PDF format using Java, providing a reliable and scalable solution for HR and administrative tasks.

**2. Abstract**

The project, *Employee PDF Report Generator*, reads employee data from a CSV file and produces individual PDF documents for each employee using Apache PDFBox. Each report contains key information such as employee ID, name, department, designation, salary, contact information, and a generation timestamp. The tool formats these details into a structured tabular layout with consistent styling, custom fonts, word wrapping, and automatic column scaling for optimal readability. The reports are generated in batch and organized into date-based folders for archival.

**3. Tools Used**

* **Programming Language:** Java
* **PDF Library:** Apache PDFBox 3.0.5
* **Font:** Times New Roman (TrueType font file)
* **Input Format:** CSV
* **Editor:** VS Code
* **Version Control:** Git & GitHub (for project hosting)

**4. Steps Involved in Building the Project**

1. **Reading CSV Data**  
   Implemented a custom CSV parser to read employee details, accounting for quoted commas and irregular formatting.
2. **Designing PDF Layout**  
   Created a clean tabular format using PDFBox's drawing tools with margin control, headers, and table borders.
3. **Dynamic Column Scaling**  
   Calculated column widths based on actual content width (both headers and data), then scaled to fit within the page.
4. **Word Wrapping**  
   Implemented a word wrapping method to split long text (like emails or job titles) into multiple lines within table cells.
5. **Font Integration**  
   Embedded custom .ttf font to enhance readability and maintain consistency across systems.
6. **Batch Generation & Archiving**  
   Generated one PDF per employee and stored them in a folder named by the current date (yyyy-MM-dd).
7. **Timestamping**  
   Added generation timestamp to each PDF for traceability.

**5. Conclusion**

The Employee PDF Report Generator project successfully demonstrates how Java and Apache PDFBox can be used to automate document generation with dynamic formatting and data-driven layouts. This tool is scalable, efficient, and easily integrable into larger HR or ERP systems. It streamlines employee documentation while ensuring consistent presentation and accuracy.