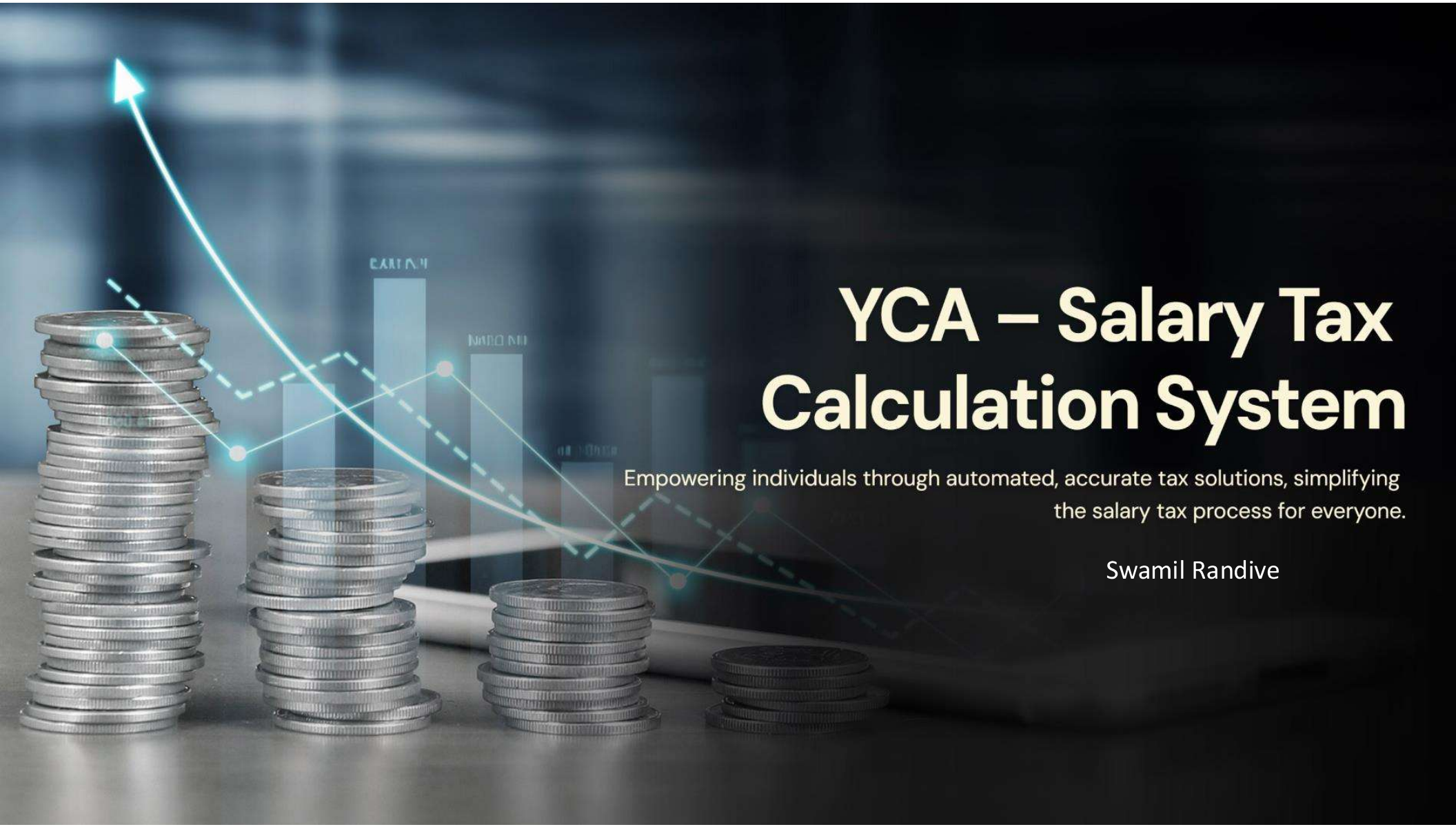

YCA – Salary Tax Calculation System
Empowering individuals through automated, accurate tax solutions, simplifying the salary tax process for everyone.
Swamil Randive

# OBJECTIVES

•**Salary Input and Calculation**
Implement calculations to determine taxable income, deductions, and net salary based on predefined tax slabs.

•**Efficient Tax Calculation**
This allows users to customize and see the impact of their salary details on their tax obligations.

•**Multithreading for performance**
Implement multithreading to handle multiple salary calculations simultaneously, improving system performance when processing bulk salary data or user requests.

•**Database Integration for Record Keeping**
Implement JDBC with MySQL/MongoDB to store and retrieve salary records, tax slabs, and calculation history.

•**Detailed output and reporting**
Provide detailed breakdowns of the salary, including taxable income, deductions, and final tax amount.

•**Error Handling and Validation**
Ensure robust input validation and error handling for accurate and secure data processing.

# APPLICATIONS

•**Employees:** Calculate tax liabilities and track salary history.
•**Employers/HR:** Streamline payroll and maintain salary records.
•**Tax Consultants:** Generate accurate tax reports and assist with filings.
•**Financial Analysts:** Analyze salary trends and tax impacts.
•**Personal Use:** Manage finances and ensure accurate tax calculations.

# Libraries & Dependencies

- java.sql. – JDBC for database access
- javax.swing. – GUI components
- java.io. – File handling (for exporting ITRs and salary slips)
- java.util.– Collections and utilities
- java.awt. – GUI and event handling
- org.apache.maven – Project management via pom.xml

# Why Swing? & What is EDT?

## Why Swing?

-Lightweight GUI toolkit for Java.
-Part of Java Standard Library (no external dependencies).
-Platform-independent.
-Rich set of components (JFrame, JButton, JTable, etc.).
-Customizable UI elements using Pluggable Look & Feel (PLAF).

---

## What is the Event Dispatch Thread (EDT)?

Swing is single-threaded – all GUI updates must happen on the EDT.

EDT handles all->
- User actions (button clicks, mouse/keyboard input).
- Painting and GUI rendering.
- Component updates and event processing.

---

# Key GUI Components Used

- JFrame: Main windows like ITRFilingWindow, TaxHistoryWindow.

JButton: Used for actions like "Submit", "Calculate Tax".

JTextField, JTextArea: For user input.

JTable: For displaying salary and tax history.

JPanel: Grouping UI elements.

JOptionPane: For pop-up messages and alerts.

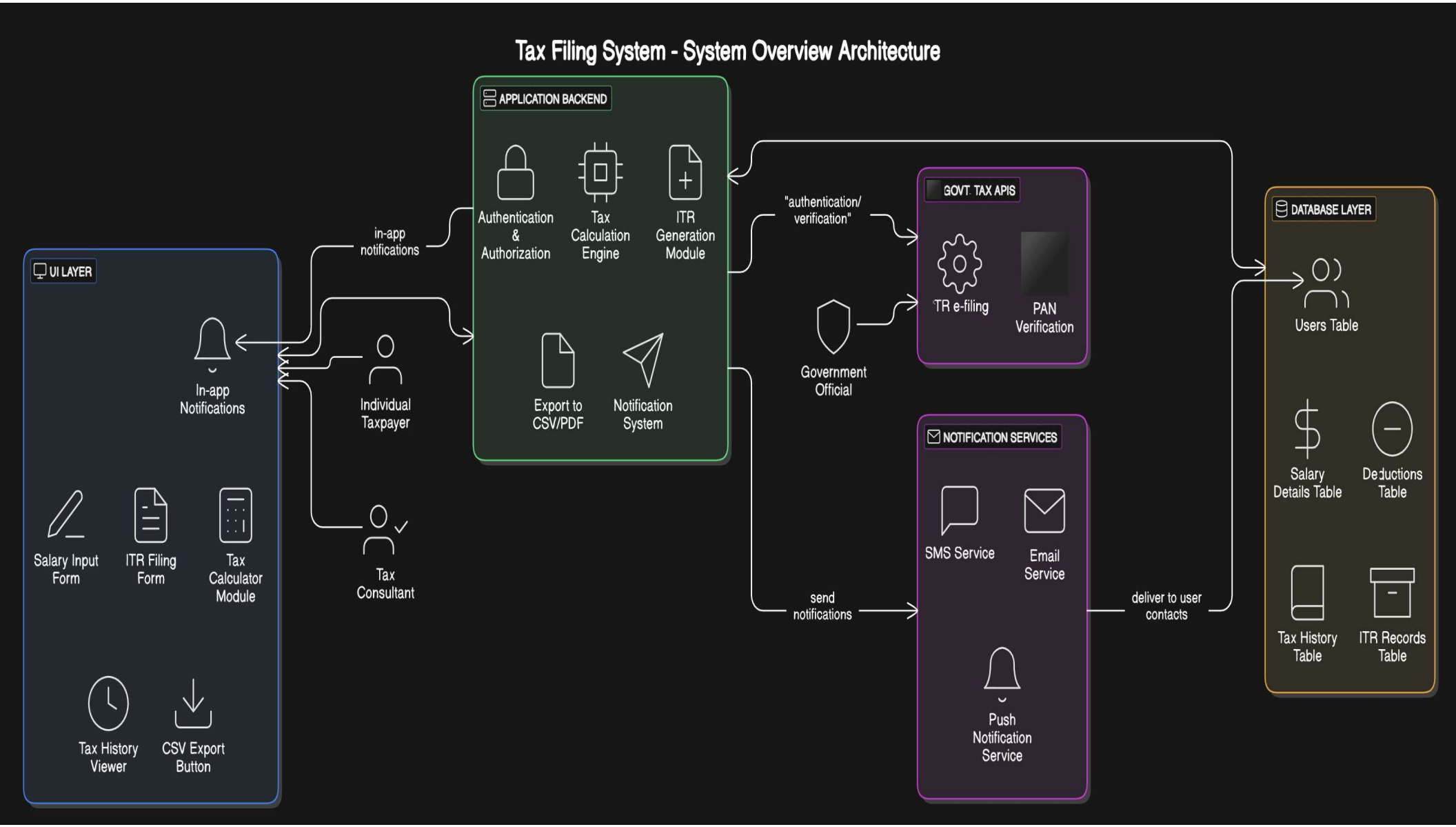
## New Tax Regime

| Tax Slab for FY 2020-21 | Tax Rate | Tax Slab for FY 2023-24 | Tax Rate | Tax Slab for FY 2024-25 | Tax Rate |
|---|---|---|---|---|---|
| Up to ₹2.5 lakh | NIL | Up to ₹3 lakh | NIL | Up to ₹3 lakh | NIL |
| ₹2.5 lakh - ₹5 lakh | 5% | ₹3 lakh - ₹6 lakh | 5% | ₹3 lakh - ₹7 lakh | 5% |
| ₹5 lakh - ₹7.5 lakh | 10% | ₹6 lakh - ₹9 lakh | 10% | ₹7 lakh - ₹10 lakh | 10% |
| ₹7.5 lakh - ₹10 lakh | 15% | ₹9 lakh - ₹12 lakh | 15% | ₹10 lakh - ₹12 lakh | 15% |
| ₹10 lakh - ₹12.5 lakh | 20% | ₹12 lakh - ₹15 lakh | 20% | ₹12 lakh - ₹15 lakh | 20% |
| ₹12.5 lakh - 15 lakh | 25% | More than ₹15 lakh | 30% | More than ₹15 lakh | 30% |
| More than ₹15 lakhs | 25% | NA | NIL | NA | NIL |

# Challenges in Manual Tax Calculation

Understanding the Burdens of Tax Management

- **Complexity of Manual Calculations**
  Manual tax calculations require intricate knowledge of tax laws and regulations.
- **High Error Rate**
  Human error can lead to inaccurate tax filings, resulting in penalties and stress.
- **Reliance on Consultants**
  Many individuals depend on tax consultants, increasing costs and complexity.
- **Confusing Software Options**
  Multiple software options can overwhelm users, leading to poor decisions.
- **Stressful Experience**
  The pressure of tax season can cause significant stress for individuals and businesses.


Tax Filing System - System Overview Architecture
APPLICATION BACKEND
Authentication & Authorization
Tax Calculation Engine
ITR Generation Module
Export to CSV/PDF
Notification System
UI LAYER
In-app Notifications
Salary Input Form
ITR Filing Form
Tax Calculator Module
Tax History Viewer
CSV Export Button
in-app notifications
Individual Taxpayer
Tax Consultant
"authentication/ verification"
Government Official
GOVT. TAX APIS
ITR e-filing
PAN Verification
NOTIFICATION SERVICES
SMS Service
Email Service
Push Notification Service
send notifications
deliver to user contacts
DATABASE LAYER
Users Table
Salary Details Table
Deductions Table
Tax History Table
ITR Records Table

# Dynamic Salary and Tax Calculation System

- **Java-Based Console Application**
  Utilizes Java programming for a responsive console application.
- **Object-Oriented Programming**
  Employs OOP principles for modular and reusable code.
- **Multithreading Capabilities**
  Incorporates multithreading to enhance performance and responsiveness.
- **MySQL Database Integration**
  Manages data storage and retrieval using MySQL for historical data.
- **Dynamic Calculations**
  Calculates salary, tax, and deductions in real-time based on user input.
- **Historical Data Management**
  Maintains records of past calculations for reference and analysis.

# Essential Components of Salary Tax System

Explore the key modules of the salary tax calculation system

- **Salary Input Module**

  Allows users to enter various salary details for accurate tax assessment.

- **Tax Calculation Engine**

  Automates the calculation of taxes based on input salaries and applicable rates.

- **Multithreading Capability**

  Enhances performance by allowing multiple calculations to occur simultaneously.

- **Database Integration**

  Seamlessly connects to databases for storing and retrieving salary-related data.

- **Output and History Management**

  Tracks previous calculations and generates detailed reports for user access.

# Essential Features of Java Programming

Explore the fundamental aspects of Java programming

### Scanner Class

Utilized for obtaining input from various sources, enhancing user interaction.

### ArrayList Implementation

A dynamic array that grows as needed, facilitating flexible data management.

### Multithreading Support

Java supports multithreading via Thread and ExecutorService for concurrent execution.

### Encapsulation Principle

Encapsulates data and methods within classes, promoting data security and integrity.

### Inheritance in Java

Allows classes to inherit properties from other classes, fostering code reuse.

### Polymorphism Feature

Enables methods to perform in different ways based on the object invoking them.

### Abstraction Concept

Hides complex implementation details and exposes only essential features.

# Innovative Features for Future Enhancements

Expanding functionality for better user experience

- **Cloud Hosting Integration**

  Implementing cloud hosting for enhanced scalability and accessibility.

- **SMS/Email Notifications**

  Automated SMS and email notifications for timely updates.

- **Tax Analytics Dashboard**

  A comprehensive dashboard for real-time tax analytics and insights.

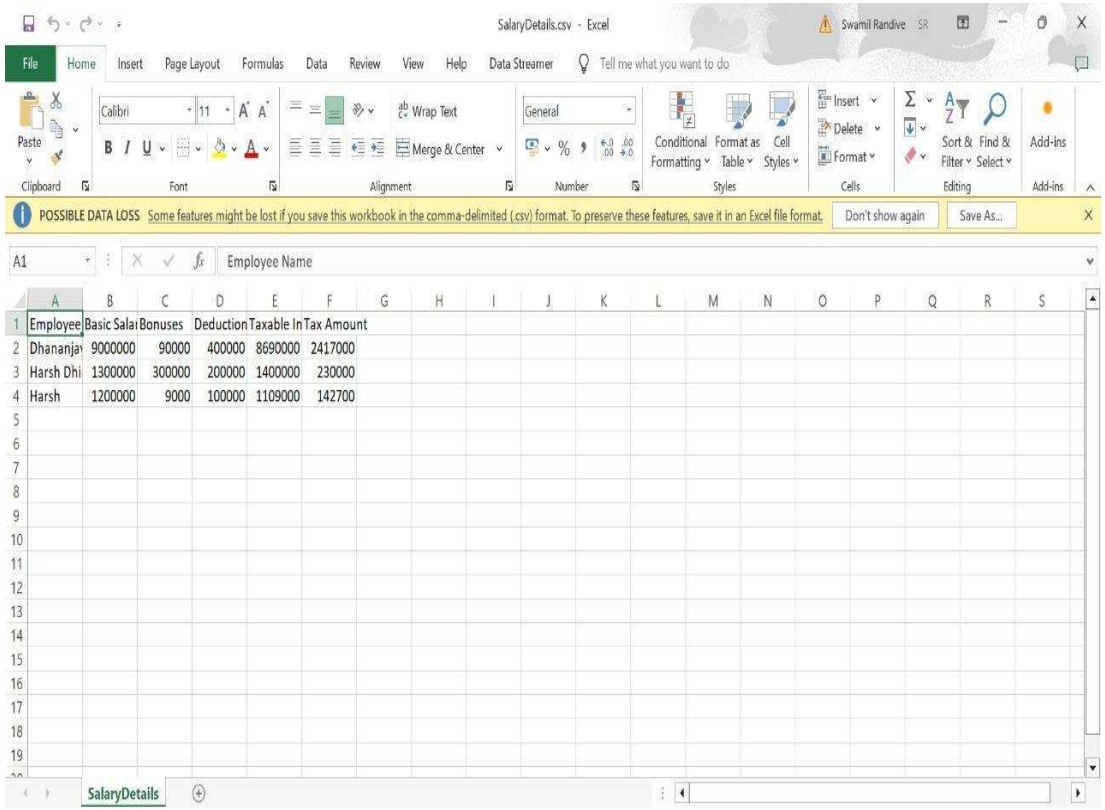
- **Multi-Currency Support**

  Enabling transactions in multiple currencies to enhance global reach.


A GUI based application was developed to automate employee salary processing and tax calculation. The interface allows user to input employee financial details and compute corresponding tax liabilities based on defined formulas.


The application includes a dedicated form for filling ITR. When the “File ITR” button is clicked, a new window labeled “ITR Filing Form”
appears. This form collects essential user details required for tax filling including :

- PAN Number
- Aadhaar Number
- Residential Address


The user has filled in salary details for an employee named “Harsh” - with a basic salary of Rs 12,00,000 and bonuses of Rs 9,000.

- Popup Message – A confirmation dialog shows :
  “Data exported to SalaryDetails.csv successfully” which means that the data has been successfully saved in a CSV (Comma-separated-values) file.