

COMP2130 Assignment 2 (15%) (Group Assignment)

Due: Sunday, December 7st, 2025 (by 11:59 p.m. sharp)

Group size: 3 or 4 persons

JavaFX Human Resource Management and Payroll System

Assignment Overview:

This project involves the development of a comprehensive Human Resource Management (HRM) and Payroll System using JavaFX. This application will enable HR personnel to manage employee records, handle payroll calculations, and generate payroll reports. It will challenge your skills in GUI development, data management, object-oriented programming, and financial calculations within a software application.

Objectives:

- Develop an advanced JavaFX application for HR management and payroll processing.
- Implement robust object-oriented design for managing employee data.
- Create a payroll calculator to process and generate employee payrolls.
- Utilize Java serialization for persistent data storage.
- Incorporate features for generating detailed payroll reports.

Assignment Details:

1. Team Composition

- Work in groups of three to four members.
- Assign specific roles within the team (e.g., lead developer, UI/UX designer, database manager).

2. Application Specifications

- GUI Design: Design a user-friendly JavaFX interface with sections for employee management, payroll processing, and reporting.
- Data Models: Develop classes such as `Employee`, `Payroll`, `Department`, etc., with relevant attributes and methods.
- Employee Management: Include features to add, update, view, and delete employee records.
- Payroll Processing: Implement a payroll system that calculates salaries, taxes, and other deductions, considering various factors like hours worked, overtime, bonuses, etc.
- Data Storage: Use serialization for storing and retrieving employee and payroll data.
- Reporting: Generate and display payroll reports for individual employees and departments.

3. Documentation

- Thoroughly comment your code to explain complex logic.
- Prepare a detailed report outlining your system design, implementation approach, and any challenges encountered.

4. Submission Components

- All source code files of the project.
- Screenshots demonstrating the functionality of your application and GUI.
- A project report explaining your approaches.

5. Advanced Features

- Implement user authentication and role-based access controls.
- Include features for tracking employee attendance and leave.
- Add data visualization elements for payroll and employee analytics.

Evaluation Criteria:

- Functionality and Complexity** (40%): Does the application fulfill all the specified requirements and handle complex scenarios?
- Code Quality and OOP Practices** (30%): Is the code well-written, efficient, and following object-oriented principles?
- GUI Design and Usability** (20%): How effective, intuitive, and aesthetically pleasing is the user interface?
- Documentation and Reporting** (10%): Quality and comprehensiveness of the documentation and final report

Deadline:

- Project Submission: Sunday, December 7, 2025 (by 11:59 p.m.)

Additional Notes:

- Ensure equitable contribution and collaboration within the team.
- Regularly back up your work to prevent data loss.

CAREFUL NOTE:

All submissions must be on D2L Brightspace.

The full names of all group members must be clearly specified in the code.

Please safeguard your code work.

- If two or more assignments are the same (or very much alike) they will all get 0 marks, so be cautious not to share your application with others.

- Mobi-Help members are NOT supposed to do or help you with your assignment code.