Smart Task Scheduler with Priority Queues

Introduction

The Smart Task Scheduler is a simple productivity application designed to manage and organize tasks based on their priority. This application was developed using Java and JavaFX. It allows users to add, view, and delete tasks through a user-friendly interface while internally prioritizing them using a PriorityQueue.

Abstract

This project demonstrates the use of core Java concepts like Object-Oriented Programming and Priority Queues. The goal was to build a desktop-based task management system that displays tasks in order of urgency. JavaFX was used to develop the graphical user interface, enabling interaction with task data such as task title and priority. Users can add new tasks, display all tasks, or remove the top-priority task using buttons on the GUI.

Tools Used

- Java 17+

- JavaFX SDK 21

- Eclipse IDE

- GitHub

- JDK 17/21

Steps Involved in Building the Project

1. Created Task and TaskManager classes using Java OOP.

2. Used PriorityQueue to sort tasks based on priority values.

3. Designed GUI using JavaFX with text fields, buttons, and a text area.

4. Connected UI actions (Add, View, Delete) to backend logic.

5. Tested functionality and exported as a runnable .jar file.

6. Uploaded project to GitHub with screenshots and README.

Conclusion

This project enhanced my understanding of Java collections, JavaFX GUI development, and object-oriented design. I also learned how to structure and deploy a Java application using real-world tools. The project is useful for managing tasks by priority and can be further enhanced with features like deadlines, reminders, and file persistence.

GitHub Repository

https://github.com/amalasalapati22/SmartTaskScheduler