Project sheet

Objective of the project :

Develop a station counter application using Java language with a Swing based Graphical User Interface (HMI).

Project description

The application aims to automate on-site counter operations at stations, thereby reducing the**waiting time**travelers station agents and efficiently manage ticket sales.

Main Features:

For the administrator:

1. **Journey Management:**Adding, editing, and deleting trip information, including timetables and fares.
2. **Management of Discount Cards:**management of information on eligible reduction cards and their beneficiaries. customers to facilitate future transactions.
3. **Reports**:Generating reports to track sales, reservations and other box office activities.

For a traveler

1. **Sale of Tickets:**Ticket sales process based on criteria specified by the traveler, including class (1e, 2$_e$) seat and destination.
2. **Print ticket**

Technologies Used

Programming Language: Java for business logic and backend.
User Interface: Swing for HMI development.
Database: Using a database (e.g. MySQL, SQLite) to store information on trips, sales etc.

HMI modeling (balsamiq, figma, etc.) Git/
github version management

Project Stages

1. Needs analysis:detail the needs that the system must meet using UML diagrams (use cases, activity)

2. Application design:using UML diagram (classes, packages.), relational model of the database generated from the class diagram

- Creation of models and design of the HMI using Swing. (balsamiq, figma, etc.)
- Structure the HMI tree and navigation logic

3. Realization

- Implementation of business logic in Java.
- Creation of HMIs and the logic between them
- Database Integration: Configuration and integration of a database to store system data.
- Unit Tests: Carrying out unit tests for each component of the application.

Planning project stages is essential with a Gantt chart (very easy)

Report structure

The structure of the reports must comply with the standard:

Cover page
R**ésumé (fr)/abstract (en) (**very succinctly present the context of the project, presentation and objectives, stages of resolutions adopted and results obtained) key words/keywords
Contents
list of Figures
list of paintings
list of abbreviations

General Introduction
        Present thecontext of the project followed by a presentation of the project then list the objectives of the work and at the end present the structure of your report (brief info on the chapters)
chapter 1 general context of the project
        1.1 Presentation of the host organization
        1.2 presentation of the project
                1.2.1 project problem
                1.2.2 project objectives
        1.3work methodology
                1.3.1 Development methodology
                1.3.2 project planning (gantt chart)
Chapter 2 Requirements analysis and specification

        2.1 Analysis of the existing situation
        2.2 Requirements specification
Chapter 3 Design
Chapter 4 Realization

        4.1 work tools

4.2 Technical architecture

4.3...

conclusion and perspectives

Remind the objectives and results:

Interpret the resultsobtained, present the difficulties encountered, etc. **At the end, present the envisaged perspectives**work.

Each chapter should have an introduction and a conclusion.

Chapters should be balanced in terms of number of pages.

Do not exceed 30 pages