Requirements Sheet – Object Oriented 2 Project

General Requirements

- Develop a **fully functional Desktop Application** (front-end & back-end).

- Application must have **4–6 scenes**.

- Must use at least **one external database** (MySQL or other RDBMS).

- The application should be:

    - **Responsive** (layouts, styles, UI controls).

    - **User-friendly** and visually attractive.

- Must apply **all tools, libraries, and techniques** learned in Object-Oriented Programming 2.

Functional Requirements

1. Login Page

- User authentication against database records.

- Error handling for:

    - Incorrect username or password.

- ○ Empty fields.

- Secure login with validation before accessing the application.

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2. Home Page

- Accessible only after successful login.

- Display user-related data:

  - ○ Username, profile picture, or recent activity.

- Features:

  - ○ Navigation buttons to other scenes.

  - ○ Notifications, settings, or task initiation options.

  - ○ User customization (themes, stage properties).

  - ○ Dynamic content (news feeds, calendar events, to-do list, appointments).

- Event handling for mouse clicks, key presses, mouse movements, and window resizing.

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3. Dashboard / Services Page

- Present products or services with details, images, and pricing (if applicable).

- Layout should display key information clearly (task lists, financial summaries, analytics).

- Interactive elements:

  - Buttons, charts, tables.

  - Direct actions (create, update, reports).

- Dashboard customization (widgets, displayed data).

- Include **different event types** for interactivity.

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4. Database Requirements

- Proper database schema design (tables, columns, relationships).

- Database connectivity using **JDBC**.

- Implement **CRUD operations**:

  - Create: Insert new records.

  - Read: Query existing data.

  - Update: Modify existing records.

  - Delete: Remove records.

- Error handling for database operations to ensure stability.

Non-Functional Requirements

- Application should be **responsive and consistent** across different layouts.

- Ensure smooth **user experience** with no crashes during common operations.

- Must follow **clean coding practices** with clear structure and comments.

- Submission deadline: **30/08/2025 (via Edugate)** .

Deliverables

1. Fully functional desktop application (JavaFX-based).

2. Database schema and connection setup.

3. Documentation (optional but recommended).

4. Submission to Edugate before deadline.