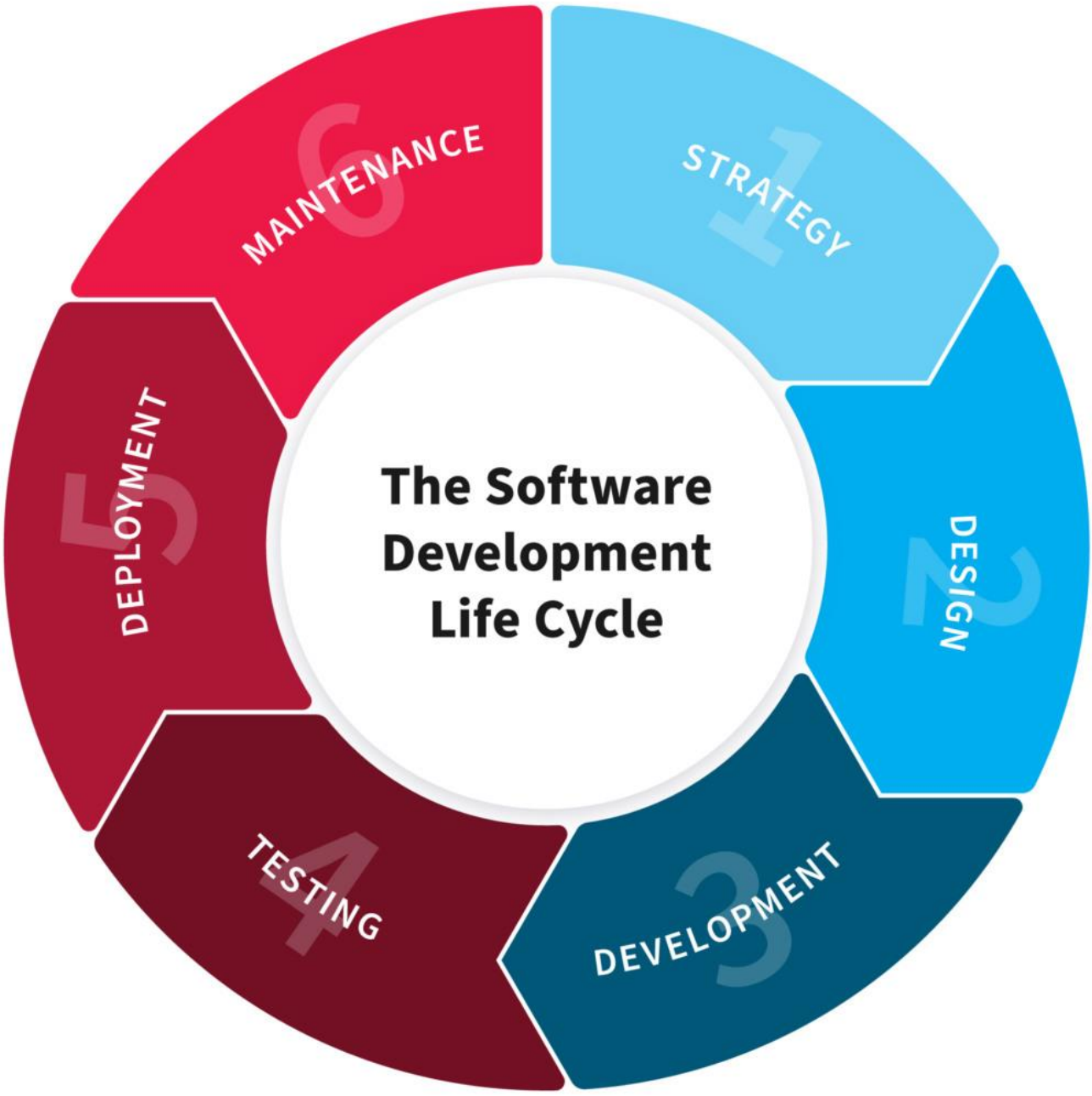
Format to report your ADVANCED JAVA PROGRAMMING PROJECTS



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PLANNING

Our java-based project is an information management system that is designed to assist bookstores in managing their sales, inventory, recording transactions and keeping track of bookstore employees as system users.

DESIGN

• Technical requirements:

 Accessibility: Our system is available and accessible to employees in various regions where our bookstores are located.

 Authentication and Authorization: Users must pass through an authentication process to access data and system functions.

 Maintainability: The system must be able to identify and resolve technical problems within an hour.

 Reliability: The system must be able to operate 24/7 with minimal downtime.

 User-friendly interface: The project's GUI must be easy to use for the users and also understandable.

• Functional requirements:

 Authentication: Users must provide a username and password provided by the admin to access system functionalities.

 Product Availability: All books in the store must be available in the system's database, and the ability to add, edit and delete books in the database.

 Transaction Records: Every transaction made by employees must be recorded in the database.

 Employee Records: Every employee must be recorded in the database, and the ability to delete and edit users.

 Receipts: Every transaction made must be printed and provided to customers as proof of book purchase.

DEVELOPMENT

• Front-end: Netbeans was used to design the front-end of the system, including forms for billing, books, login, user, and a loading splash.

• Back-end:

JAVA: As the project is based on the Java programming language, Java was used as the back-end language and to make the system interactive.

Database: XAMPP was used to create, edit, and modify the necessary database tables for the project, including bill table, book table, and user table.

TESTING

After the back-end and front-end development, the next step was to test if the system was interacting with the database. This included checking if every book added to the database was available to be displayed and if the ability to add, edit, and delete books in the database was successful. A minor error was found in the edit button code, but it was fixed.

Users were also tested to ensure they could bypass the authentication process (login) successfully. Additionally, it was checked if transactions done by users were recorded in the bill table in the database and if receipts could be printed after every transaction, which was successful.

The final test was to restart the whole system and ensure it was working correctly from the splash loading page to the end of the transaction, and the system was fully functional with no bugs.

DEPLOYMENT

After multiple tests, the next and final step was to add the project and databases to other laptops and test if it was working on a local network created to simulate workspace system interaction. The system functioned perfectly.