**Problem Definition**

Can Tho University is one of the most reliable universities in the Mekong Delta. The school's Learning Resource Center strives to provide learners with the best learning and working space. However, traditional operating procedures are significantly affecting the user experience.

The center has almost hundreds of thousands of books and electronic archives available, all of which are regularly updated. Every day, tens to hundreds of students come to study in groups, borrow documents, look up information, and meet in groups in the discussion room. During the exam season or midterm exams, students come to study in large numbers, sometimes up to thousands of people. Therefore, book management, borrowing, returning activities, etc. also face many difficulties. Although the number of personnel has been increased and some simple systems have been integrated, this situation has not yet been overcome. Faced with that situation, the center must consider changing its management.

One solution to this problem is to build a more complete library management system. This system will be a desktop application designed with Java SE 18 and using related technologies. Readers (students) are individuals who have registered to use the library's services, including borrowing and returning books. They can log in to the application and perform the following actions: (1) Search for documents or books; (2) view borrowed documents and renew them; (3) register to borrow group discussion rooms; and (4) provide feedback and suggestions. The librarian will be responsible for: (1) managing readers; (2) managing discussion rooms; and (3) managing the borrowing and returning of books. Managers can: (1) manage the catalog of books and books; (2) manage the bookshelf; (3) manage employees (including the librarian); and (4) compile statistics of activities in the library. A database stores information concerning readers, librarians, managers, and library operations. The database will be located on a central server, and applications can access it to retrieve data.