ABSTRACT

The advancement of digital transformation has brought significant changes to various aspects of life, including education. Telkom University, as one of the private universities, has been affected by these digital transformation changes. One such impact is the emergence of an innovative application known as "SOFI," a web-based software that supports academic activities within the Faculty of Industrial Engineering (FRI) at Telkom University. This application, while offering various advantages, also has some drawbacks, one of which is its limited scalability. This research aims to implement Domain Driven Design (DDD) in the system design phase to assess the granularity of the existing registration and scheduling modules. This approach helps maintain the integrity and consistency of the business domain. Additionally, the Iterative Incremental Development (IID) method is applied in the backend development process of the registration and scheduling modules, which have been broken down into microservices applications to ensure proper development alignment. The results of this study indicate that the application of Domain Driven Design in system design is effective in the migration process of the registration and scheduling modules. This approach aids in breaking down the system into smaller, manageable contexts. The SOFI faculty meeting application, initially built on a monolithic architecture, has been successfully migrated to a microservices architecture by implementing the Iterative Incremental Development method. Six features have been successfully developed. Functional testing of the 35 APIs created showed that load testing results indicate an excellent success rate, with the main features achieving approximately 100% success for user loads ranging from 50 to 300 users.

Keywords— ***backend, domain driven design, iterative incremental, microservice***