Abstract

The growth of the e-commerce industry in Indonesia has increased significantly. This phenomenon cannot be separated from the crucial role of e-commerce applications in the online trading era. This e-commerce application can be said to be a complex application because of the application system architecture. To guarantee the success and quality of this e-commerce application, comprehensive and efficient testing needs to be carried out. However, if testing is done manually, it will take a long time. It is estimated that 80% of software development costs are spent on detecting and fixing defects. Model-based testing (MBT) with the Unified Modeling Language (UML) Statechart model is the right solution to reduce human errors and increase efficiency in the testing process. In this research, MBT with the UML Statechart model is proposed as a research method because UML Statechart can handle complex tasks in handling data, then UML Statechart can also represent features such as parallelism and hierarchy. With the help of the TestOptimal tool, from five trials, the best results were obtained with state coverage of 100%, transition coverage of 97%, and requirements coverage of 100% with an execution time of 11 minutes 43 seconds.