ABSTRACT

Practicum is a learning activity carried out in a laboratory that is intended to provide opportunities for students to apply the theory that has been obtained from learning a course. To carry out quality practicum activities, each laboratory in the Faculty of Industrial Engineering, Telkom University is required to have adequate facilities as well as having a qualified practicum assistant who has adequate hard and soft skills. To get an assistant who matches these qualifications, strict selection must be carried out.

Organizing lab assistant selection. is a routine activity carried out by every laboratory at FRI by FRI laboratory. But in the implementation there are several problems that occur such as the selection and recruitment process which is still separate and the selection process that is still done manually so as to make the criteria, assessment, and ranking of registrant values also done manually.

Seeing these problems, a decision support system can be built for membership selection using the Extreme Programming (XP) method. From several systems development methods, the XP method is the method chosen because this method is suitable for working on projects with a small scope and having a high level of user participation. The analysis and design of this system uses UML and the method of decision making using the Simple Additive Weighting (SAW) algorithm. This system development is based on Java Android and MySQL Database.

The results of this study are a decision support system for membership selection using the Android-based Extreme Programming method. System testing is done using validation testing and accuracy testing methods. The test results show that this system can assist organizations in conducting membership selection because it has a high level of validation and accuracy, which are 94% and 87% respectively.

Keywords : *selection, laboratory*, UML, *Extreme Programming, Android*