

## ABSTRACT

*In educational world, it is important for an educator to know the ability of his students. By knowing the ability of his students, an educator can take appropriate action in educating his students. One way to determine the ability of the students is by performing an adaptive testing. Adaptive testing is a testing method in which examinees will be given different set of questions according to their abilities. Thus, each of the examinees do not have to answer all the questions available. Adaptive testing can be automated using computer which is called Computerized Adaptive Testing (CAT). In this Final Project, a CAT system and a item parameter estimation system to estimate the item parameter used by the CAT system based on Item Response Theory with 1 and 2 parameter logistic model is constructed. Test results shows that the CAT system has high efficiency and reliability.*

**Keywords:** *Computerized Adaptive Testing, Item Response Theory, efficiency, reliability*