

ABSTRACT

The use of electricity in Indonesia is increasing, this is due to the increase in population every year with an increase in the number of houses, buildings, educational institutions, businesses, and industries that require electrical devices every day. The use of electrical energy has become a serious problem in society, global demand for electrical energy has doubled over the past 40 years and is expected to double again in 2030. Savings in electricity consumption for households, offices, and industry need to be timed. in use, with the aim of reducing the cost of the estimated expenditure required per month.

This final project research discusses the scheduling system of electrical devices. Scheduling of electrical devices is applied by optimizing electrical devices in a room. Optimizing the use of electrical devices can reduce the duration of the use of used electrical devices. Scheduling electrical devices can limit the cost of using electrical devices.

In the electrical device scheduling system, the house class is used as a reference for calculating the price per kWh of electricity. In determining the priority of electrical devices, the user determines and will be forwarded to the optimization algorithm, for system efficiency, genetic algorithm and database methods are used to store user electrical devices data. To obtain the optimal fitness value, it is obtained from the generation that matches the mutation rate, crossover rate and evaluation percentage. With a mutation rate of 0.05-0.5, a crossover rate of 0.3-1 and an evaluation percentage of 8%, the best fitness results are 89,542 in the 70th generation. When doing web functionality testing (alpha testing) the value is 100%. This shows that the designed system is running properly.

Kata Kunci: *electrical devices, Genetic algorithms, scheduling, websites.*