Wireless Sensor Networks has been progressing rapidly. Various applications of Wireless Sensor Networks have graced human life. WSN applications such as controlling, tracking, monitoring activities. However, WSN has some shortcoming due to the shortages of energy and not the extent of coverage area of the sensor nodes. In this final project, we studied on distributed average consensus algorithm using probabilistic quantization. Distributed average consensus is an important issue in distributed agreement and the problems of synchronization in ad hoc networks and also an important topic for load balancing on parallel computers, and distributed data fusion in sensor networks. Quantization very effective probabilistic estimates of decentralization because of quantized states is similar to the analog state. Sensor networks will be deployed with the square dispersion model and the value of the power of each sensor will be compared with a value called the threshold value. This threshold value that determines whether the sensor is active or not. The value of power from the active sensors will be quantized using a probabilistic quantization. And the value of active power that will be processed using algorithms consensus A-NC. Using consensus algorithm expected data from each sensor can achieve the highest convergence. If the sensor network has reached convergence, it is expected of each sensor is able to continue with the acquisition of information is continuously

Keywords: distributed algorithms, average consensus, sensor networks, probabilistic quantization.