

ABSTRACT

The development of batik has so many patterns and varieties, this is due to the diversity of ethnicity and culture in Indonesia. The creation of batik's patterns usually are influenced by the surrounding environment and it's inspired from various forms and objects such as plants and animals. Indonesia has a lot of biodiversity, and one of it is coral reef which considerable wide as 50875 km², and there are 574 coral species that recorded in Indonesia.

In this Final Project, the designed technology that can be applied in accelerating the process of producing new batik patterns is by applying a web-based batik application using the L-System method with the type of *Coeloseris mayeri* coral motif. L-systems are mathematical theories that are applied in graphic applications on computers. The main areas of the development included in generating fractal patterns and realistic plant modeling. .

There are three tests carried out in this Final Project. First is The Alpha Test, by changing the coral color and size, background color, number of tentacle branches, distance between corals, waves on hexagons, and the position of the kawung patterns to produce shapes according to the user input parameter based on the system that has been made. The second test is The Beta Test are appraisal from two expert judgments stating that similarities of motifs made in terms of composition, color, and shape are 50% and 75%. The third test is The Quantitative Test. The test performed by observing the change of average tentacle's length by changing the parameter value of the tentacle angle. The result is changes in the deviation of tentacle angles will affect the length of the tentacles formed.

Key Word: Batik, *Coeloseris mayeri*, L-System, Web Application