Preserving Uru'ngauwit Batik by Applying a Geometry Transformation Approach

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Batik is one of Indonesian culture heritage. Currently, the concern and interest of the young generation towards batik is decreasing, so efforts are needed to preserve and find an attractive method to develop variation on batik patterns. One of the pattern innovations is applied to develop Uru'Ngauwit batik. The Uru'Ngauwit pattern inspired from the seaweed, palm fruits and shields, known as North Kalimantan potential resources. Uru'Ngauwit is derived from Tidung and Dayak languages. The method used in this research comprises several steps; first is identification the basic patterns of Uru'Ngauwit batik, based on the form of seaweed, palm fruits and shields. Second, building a mathematical formula to produce basic pattern. Next transformation (translation, rotation, reflection, and dihilation) of the mathematical formula according to the pattern and finding new patterns from the basic patterns. The analysis results six main shapes, consisting hexagons, line functions, quadratic functions, horizontal parabolas, circles and ellipses. The shield pattern came with two shapes hexagons polygon ((-2,10),(-5 ,16),(-8,10),(-8,-10),(-5,-16),(-2,-10)) and line function x=-5 {y>-16}{y<16}. The seaweed pattern consists of four shapes, namely a quadratic function (y=2(x+1)2 + 0.5 {-1.809<x<-1}), a horizontal parabola -x=2(-y+1) 2 + 0.5 {-2<-y<-1}, a circle $(x+2.5)^2+(y-2.3)2 = 0.1$, and a line function y=-x {-x<1.809}{-x>0781}. The palm fruit patterns comprise a circle (x)2+ (y)2=1.22 and an ellipse (2(x+13))2 + (2(y+5.5)2) = 15. Geometric transformations resulted in Uru'Ngauwit batik patterns without changing the philosophy of Uru'Ngauwit. By geometric transformation process, it is expected that new patterns can easily be obtained in order to preserve the batik heritage.

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