The aims of this study are to find variogram or semivariogram estimator for spatial data, and to discuss the characteristics of estimator obtained by Universal Kriging. If the mean of the sample is constant or stationary, then the method used Ordinary Kriging (OK) and if the mean of the sample to form a trend or nonstationary, then Universal Kriging (UK) method can be used. This study shows that the characteristics of the Ordinary Kriging and Universal Kriging estimator are unbiased and variance minimum of estimator (BLUE). For computation purposes of the application of the Universal Kriging algorithm graphs, this study develops R software language.

**Keywords:** Spatial Data, Variogram, Semivariogram, Kriging, Ordinary Kriging, Universal Kriging, BLUE (Best Linear Unbias Estimation), Unbiased, Variance Minimum.