Nowadays the issue of global warming is considered by the world. One cause of global warming is the Urban Heat Island (UHI). While Java is an island with the densest population in Indonesia. Density is supported by a wide range of facilities available including the industrial area compared to other islands, causing the hot air is concentrated in urban areas in Java. Therefore UHI research can be applied to Java and the effort to overcome the UHI can be done by reforestation in areas that have the highest temperature or the exact location of reforestation with image analysis satellites TERRA and AQUA Moderate Resolution Imaging Spectroradiometer (MODIS).

This study conducted by combining data from extraction of Land Surface Temperature (LST) and vegetation index (VI). Algorithms used in image processing for extraction of MODIS data by using three algorithms SPT calculation, namely algorithms Price (1984), Li & Becker (1991), and Coll et. al. (1994). As for the extraction of IV values, extracted from MODIS data using 4 algorithms ie NDVI, SAVI, SARVI and EVI. Using several algorithms can be obtained by determining the value approach and the algorithm SPT IV which have a better correlation.

The results of this study indicate that the best correlation is reached by calculation algorithm SPT Col., et. al. with the calculation of EVI algorithm IV. In this study produce 3 regional
groups, namely the area of reforestation advice I (recommended immediately reforested) there are 38 district/municipality, regional advice reforestation II (recommended after area of reforestation advice I) there are 47 district/municipality, local Anomalies (deviations regional areas with high LST and high VI) there are 12 district/municipality.

Keywords: TERRA, AQUA, MODIS, Urban Heat Island, Land Surface Temperature, Vegetation Index, Reforestation, Anomalies.