

ABSTRACT

AIR QUALITY CLASSIFICATION OF DKI JAKARTA USING K-NEAREST NEIGHBOR ALGORITHM

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The growth and development of a city and the large use of energy and industrial fuels can cause changes in components of the air which results in air pollution. Air pollution can be caused by the growth of motorized vehicles, the growth which increases every year will cause an increase in air pollution produced by exhaust gases from motorized vehicles. Air pollution can have a negative impact on the environment and living things. Decreased air quality can also endanger human health, such as causing asthma attacks, damage to the lungs, and can cause damage to the brain. The Air Pollution Standard Index (ISPU) is a number that describes the air quality conditions at a certain location and time of an area. The parameters for the Air Pollution Index include particulates (PM10), carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃). Based on the existing problems, research was carried out in classifying air quality to determine the air quality every day. This study uses a data mining approach to obtain information from large data using the K-Nearest Neighbor classification algorithm. Classification is the process of analyzing and determining a data object into a certain class from the available classes. The K-Nearest Neighbor algorithm is a method for object classification based on the data that is closest to the object. In this study the authors followed the data mining process using the K-Nearest Neighbor Algorithm in classifying air quality in DKI Jakarta. The results of this study indicate that the K-Nearest Neighbor algorithm has an accuracy rate of

96.95% with air quality output, namely the categories of Good, Medium, Unhealthy, and Very Unhealthy.

Keywords: Air Pollution, Classification, Data Mining, ISPU, K-Nearest Neighbor.