Identifikasi Abnormalitas Jumlah Trombosit untuk Deteksi Dini *Myeloproliferative Syndrome* berbasis *K-Nearest Neighbor*

Identification Abnormalities of Platelet Count for Early Detection of Myeloproliferative Syndrome based on K-Nearest Neighbor

Ainun Nurkharima Noviana

Study Program of Informatics Engineering

Majoring of Information Technology

Program Studi Teknik Informatika

Jurusan Teknologi Informasi

ABSTRACT

Essential Thrombocythemia (ET) is part of Myeloproliferative Syndrome which means a type of disorder of the human circulatory system. ET is a disorder that lies in the number of platelets in the blood. Under normal circumstances, the number of platelets in the peripheral blood smear image ranges from 8-20. Abnormalities are known if the number of platelet objects contained in the peripheral blood smear image is less than or more than the normal number range. This study aims to detect abnormalities in this number, which in this study requires peripheral blood smear image data with the specified magnification. The peripheral blood smear image will be classified using a simple k-nearest neighbor algorithm method with 3 different types of circumstances, namely thrombocytopenia, normal and thrombocytosis. Peripheral blood smear image data are taken from three types of feature extraction, namely area, perimeter and platelet count, where the area and perimeter values are derived from the number of areas and perimeters of platelet objects contained in one peripheral blood smear image. The feature extraction value is used to classify the data so that the type of category for the data is obtained. in this study the system gets the highest accuracy value at the value of k = 3 with training data of 98.1% and accuracy of data testing is 100%.

Keywords : Abnormalitas trombosit, Myeloproliferative Syndrome, image processing, K-Nearest Neighbor.