ABSTRACT

PREDICTION OF APPROACH TO DISEASE PATTERN USING APRIORI ALGORITHM AT PORT MEDICAL CENTER JAKARTA

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The development of the medical and health world at this time began to be much glimsed by the public eye. Awarenerss of the importance of health for the someone body provides an increase in the quality of health itself. Hospital is one área or service that requires data and information that is integrated with one anothe and requires a safe and centralized data storage. The hospital is also one of the health service providers trusted by the community to handle and treat various diseases. Diseases that often suffer by a person are usually stored in the form of medical record data used to store a person's data electonically or in the form of archives. The large number of patient medical records and various types of diseases causes the storage of data space to be full, so that the hospital is difficult to improve health services such as seeing or predicting proximity of disease patterns that occur in the community.

Data mining is a method used to identify, analyzem and pricess a data, and can prevent duplication of data. In data mining there are also tolos that support data processing such as Rapid Miner that functions to analyze and obtain a description of data that is processed. The concept of data mining also aims to make predictions or get picture of the problems being faced or that occur in the future. classification, claster, and association are techniques used in data mining by using several supporting algorithms such as Decision Tree, K-means, Apriori, Naive Bayes, SVm and other. One algorithm that can be uses in determining the proximity of disease patterns that occur in community is to use the assoctiation technique.

Association rule is one technique that aims to look for results by associating the proximity of one ítems with another item, association rule also used as one way that can be used in predicting the closeness of existing disease patterns. One algorithm which is clasified as association rule technique is apriori algorithm. In addition, the asscociation rule and apriori algorithm aslo have a relationship and also have similarities in the calculation of desired results.

Apriori algorithm is an algorithm that can describe the proximity of a data with other data and can provide clear explanations related to determining the pattern to be identified. Apriori algorithm can provide results base on calculations of the amount of data and ítems that occur at one time. In addition, apriori algorithm can

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also see or predict how close patterns of relationship often occur, so that it Will be easy to obtain and identify the proximity of disease patternts throug data such as patien medical record data.

The purpose of this study is to provide a guideline for grouping the prediction of the patients disease patterns found in the Port Medical Center Hospital in Jakarta. The results obtained in this research are to divide the data into three itemset patterns. This first itemset pattern produces a combination of 81 rules, the second itemset pattern produces a combination of 68 rules, and the third itemset pattern produces a combination of 3 rules. The itemset pattern is formed based on the result of the calculation of the support value of 0.005 or 0.5% and the confidence value of 0.2 or 20% with a total of 2691 data used This prdiction is expected to make it easier for the Port Medical Center Jakarta Hospital in dealing with patients in large numbers and can predict the future types of diseases that develop in the community by looking at data about the prediction of the proximity of existing disease patterns.

Keywords: Hospital, medical record, data mining, Rapid Miner, *disease patterns, association rule, apriori algorithm.*