BAB I

INTRODUCTION

The development of information and communication technology has made the internet a primary necessity in various sectors such as education, business, government, and public services. Good internet signal quality greatly affects Quality of Service (QoS) and user satisfaction. Problems such as high latency, packet loss, and throughput instability still occur frequently and have a direct impact on service quality. As the main telecommunications service provider in Indonesia, Telkom has a big responsibility in maintaining network quality. Therefore, an effective and easy-to-understand analysis method is needed to evaluate internet signal quality.

The machine learning approach, particularly the Decision Tree algorithm, offers a solution that is not only accurate but also produces decision rules that are easy for network technicians to interpret. Based on this, this study examines the analysis of internet signal quality on Telkom's infrastructure using the Decision Tree algorithm.

1.2 Problem Formulation

1. How to classify internet signal quality on Telkom's infrastructure using the Decision Tree algorithm?
2. What network parameters have the most influence on internet signal quality?
3. How accurate is the Decision Tree model in classifying internet signal quality?

1.3 Research Objectives

1. Classify internet signal quality into Good, Fair, and Poor categories.
2. Identify the dominant network parameters that affect signal quality.
3. Measure the performance of the Decision Tree algorithm in analysing internet signal quality.

1.4 Research Benefits

1. Academic: To add to the body of research in the field of data mining and computer networks.
2. Practical: To provide rule-based technical guidance for Telkom technicians.