

CHAPTER 3

RESEARCH METHODOLOGY

3.1. Literature Study

The results of the performance data will be stored in the database. Moreover, the testing process will be carried out with several classifications based on the amount of data sent in one second during a certain period. After getting the performance results from the two message brokers, the results will be searched for the average value based on the classification of the amount of data sent. These averages will be compared with each other and determine which message broker is the most suitable for use in the E-Ticketing System.

3.2. Dataset

The data used in this study is data created within a certain time and has variations in the amount of data created simultaneously. Variations of the data are 1, 100, 1000, and 10000 data sent every second. The data will be stored in latency, CPU usage, and memory usage, which will eventually be compared with one another.

3.3. Programs

The programming language that will be used in the research is Go Language version 1.15.1. The database used to store the data generated by the two message brokers is Postgres version 13.0. The Redis used in this project is Redis version 6.2. RabbitMQ used in this project is version 3.8.13.

3.4. Implementation and analysis

This study will implement data transmission with a message broker. The implementation of message broker performance will be carried out alternately with variations in the amount of data sent. After the data is sent and successfully received by the message broker, the program will calculate the time interval between when the data is sent and when the data is received. In addition, the program will also record the performance of the CPU and memory during the message broker delivery process for a certain period.

