1. Introduction

Smart City can not be separated from its environment, one of which is Smart Parking, Parking has become one of the main issues for people in urban areas. According to data released by the Bandung City Transportation Agency as of October 2018, four-wheeled vehicles in the city of Bandung amounted to 536,973 units, this number increased by 11% annually with the dominance of 98% of private vehicles and 2% of public vehicles. With this increase in parking lot users and the availability of parking, lots in the city of Bandung will continue to increase.

The manual parking system was initially a solution in public places such as malls or other indoor parking spaces that could not meet expectations in the demand for parking users, this was less efficient, the ticket system was just a parking vehicle synchronization and how long they used the parking lot to determine how much the amount required.

Many discussions about Smart Parking One of them in [1] is discussed about the implementation of a parking lot system but there is no recommendation for the arrangement of the closest address in an order. This shows that parking slot settings are less effective. Many efficient values are wasted starting from the time until wasted energy can even discourage consumers from visiting the center because of the difficulty of getting parking. In this study, a data processing modeling system was built to get the closest recommendation to the building door using the A-Star Algorithm and Dijkstra Algorithm to get a comparison of recommended parking locations with the closest distance to the building door location where the parking recommendations are listed on the user's parking ticket. The algorithm used is a popular method for solving optimization problems.

Background

Giving recommendations for parking lots through parking tickets that have been processed using the A-Star Algorithm and Dijkstra Algorithm can work optimally both in terms of time and resources so as to provide information to facilitate users in obtaining parking spaces that are still available and closest to the building entrance. In addition to a sophisticated system, the desires of users expected from Smart Parking Recommendation according to a survey taken from Bandung City residents 67% of users want the closest parking location to the building entrance, so that this is the basis for modeling the closest parking recommendations to the building door, besides The main thing in Smart Parking is the effectiveness of the algorithms used, requiring algorithms that can work optimally in real-time.

Problem Identification

The input of this modeling is a parking lot that will be simulated using an algorithm both the A-Star Algorithm and the Dijkstra Algorithm to get the best parking recommendations for users.

In order for the discussion to be more directed in accordance with the objectives and the formulation of the problems described earlier, it is necessary to limit the problem. The limitations that must be considered in the design of Smart Parking this time include:

1. It is assumed that all Smart Parking users are obedient and orderly.
2. The vehicle used is only for Group I (*Golongan I*).
3. The distance between vertices, the initial state, and the final state is measured manually.
4. Objects inside the parking slot will be considered as vehicles.
5. Indoor Parking Environment.
6. Parking Access using Tickets.

Objective

The purpose of this Final Project is to model and analyze the performance and level of accuracy of the parking system built using the A-Star Algorithm and the Dijkstra Algorithm which can provide optimal recommendations in terms of time and resources, through parking tickets automatically so as to facilitate users in obtaining a place parking is still available and is closest to the building. So that users can save time and energy in finding a parking space. The following Figure 1 is a dependency diagram between objectives, testing, and conclusions:

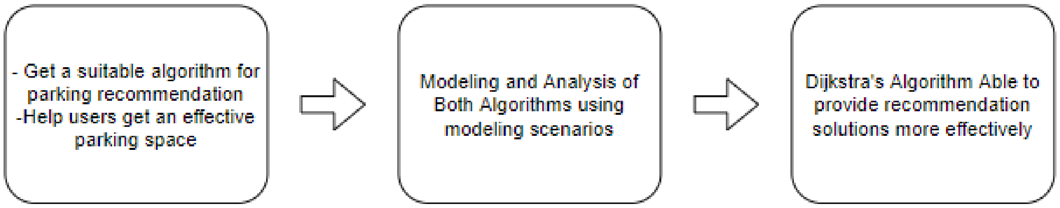
- Get a suitable algorithm for parking recommendation
-Help users get an effective parking space
Modeling and Analysis of Both Algorithms using modeling scenarios
Dijkstra's Algorithm Able to provide recommendation solutions more effectively

Figure 1: Dependency between goals, testing, and conclusions