Summary

The problem our team wants to solve is traffic congestion on airport taxiways. We wanted to do this research because we wondered why it is so difficult for air travelers to take off from the departure gate. Here we turned our attention to Fukuoka Airport, which has the busiest runway in Japan and will add one runway in 2025.

To solve this problem, we used the Dijkstra method and queueing theory. By fixing the taxiway to be used from each gate to the runway and keeping the operation interval constant, we made it possible to take off without causing traffic congestion on the taxiway even once.

This allows all aircraft to depart and arrive on time if there are no problems.

We believe that this system will greatly contribute to the reduction of exhaust gas emissions by not having to stop once on the taxiway. And we believe that this system can be applied to other airports by loading airport data.