In Bangladesh, Railway transportation is considered a comfortable, cheapest, environment-friendly, and efficient mode of transport. The Bangladesh Railway system has a total length of 3,600 kilometres of rail network connecting 44 districts. In 2014, Bangladesh Railway carried 65 million passengers and 2.52 million tons of freight.[1] According to **ADB** (2000), about 20% of the passengers in all transport sectors in Bangladesh travel by train. But train schedule disasters, delays and accidents are the common issues in the railway system. There are some opportunities to optimize the train trip time, route choice, and meeting-crossing between trains.

In this work, we focused on developing automated schedules and plans for the Bangladesh Railway (BR) system in order to optimize the train schedules. We constructed a scheduling model that generates automated schedules also known as plans. We applied these generated automated plans to the **BR** system to minimize the trip time of the train and improve the passenger's service and ease their suffering. In our strategy, to simultaneously execute multiple actions parallelly we are using automated temporal planning to generate the plans as a sequence of actions with duration. To model our domain using automated temporal planning, we used **PDDL2.1** and **PDDL2.2** as modelling languages.

We develop our model with a simple railway system, to test the effectiveness of automated temporal planning. automated planners give a good result on optimization of train drive time and route choice conditions. Then we work on the Bangladesh Railway system. we almost cover all main routes of the Bangladesh Railway map. PDDL domain and problem files of our model successfully generate the optimized plan. Evaluating the experiment result, we can assure that, our model gives optimal train schedules.

(1) Wikipedia Bangladesh Railway, https://en.wikipedia.org/wiki/Bangladesh\_

Railway/, [Online; accessed 21-November-2021], 2021.