

Let O and G be the two algorithms; optimal and greedy respectively.

G is to spend max fuel to reach a station and then after would only fill enough to reach the next station.

- If O stops at a station before G would, that would make it non-optimal as fuel would be added even though the car can travel further.
- If O stops after G, then it would incur more time in filling the tank and henceforth increasing the time, instead of maximizing it.

This proves G is the optimal algorithm.