ComfortRoute
CSE 3311 – Iteration 1

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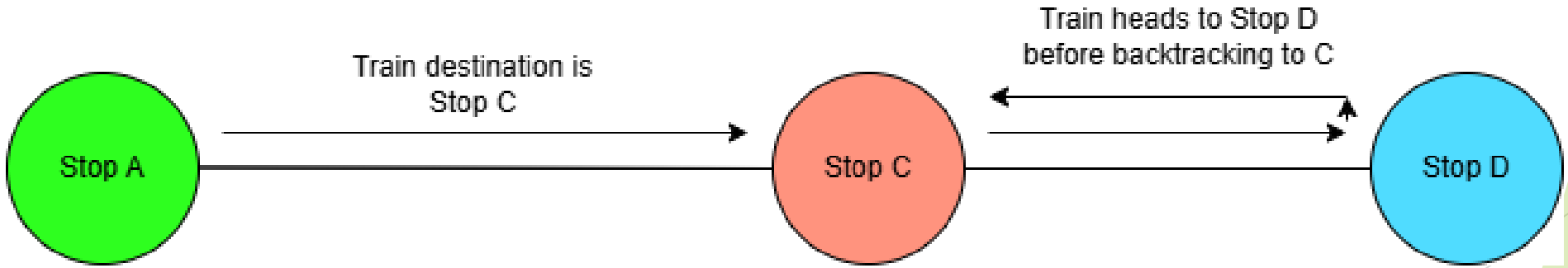
GitHub Repository: https://github.com/Kass-ii/CSE-3311-

Version: iteration 0.1

Iteration 1-Backtracking on Same Rail Line

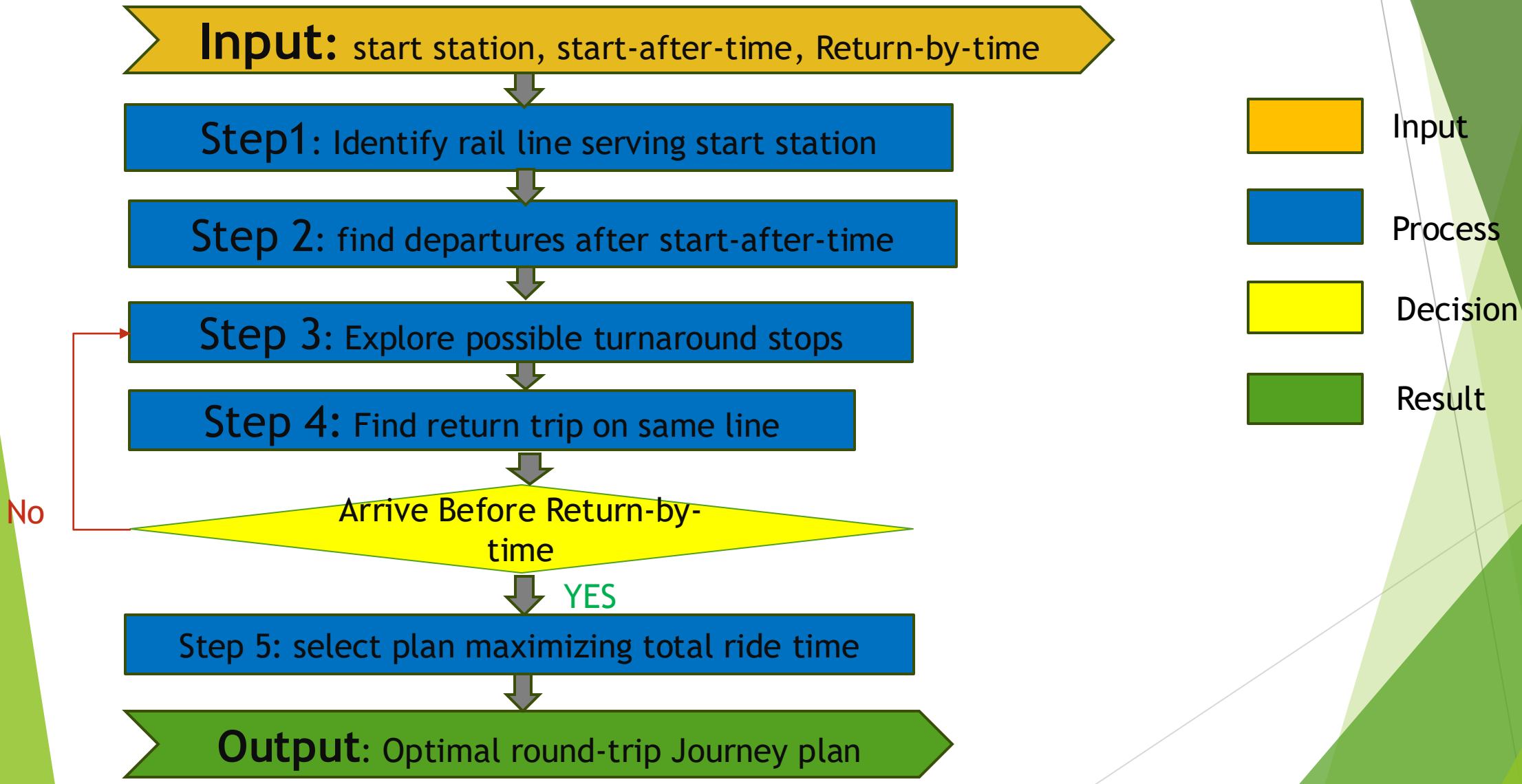
GOAL: Validate comfort-based routing using real GTFS data

- The train is able to backtrack on a rail line, where it may ride past its designated stop and backtrack to it later on.
- Allows riders to maximize comfort time in train while still arriving on time.
- Train must remain on same rail line and arrive by its scheduled arrival time.



How it works (Algorithm Overview)

Rail trip optimization algorithm



Live Example Using Real DART Data

- Input: Mockingbird | start after 17:00 | return by 20:00
  - Route: 005
  - Depart: 17:07 -> turn: 17:12
  - Return: 17:14 -> Arrive back 17:18
  - Total ride time: 9.1 minutes
  - Turnaround Wait: 2mn

Live Demo

Achievements

- Built schedule-based routing engine.
- Implemented single line backtracking logic.
- Added comfort optimization metric.
- Validated using real transit data.

Thank You!!!