

ComfortRoute

CSE 3311 - Iteration 1

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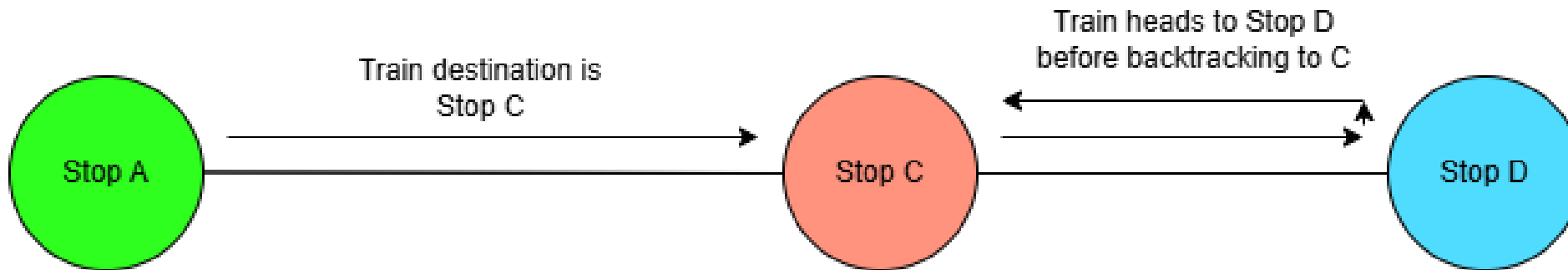
GitHub Repository: <https://github.com/Kass-ii/CSE-3311->

Version: iteration 0.1

Iteration 1-Backtracking on Same Rail Line

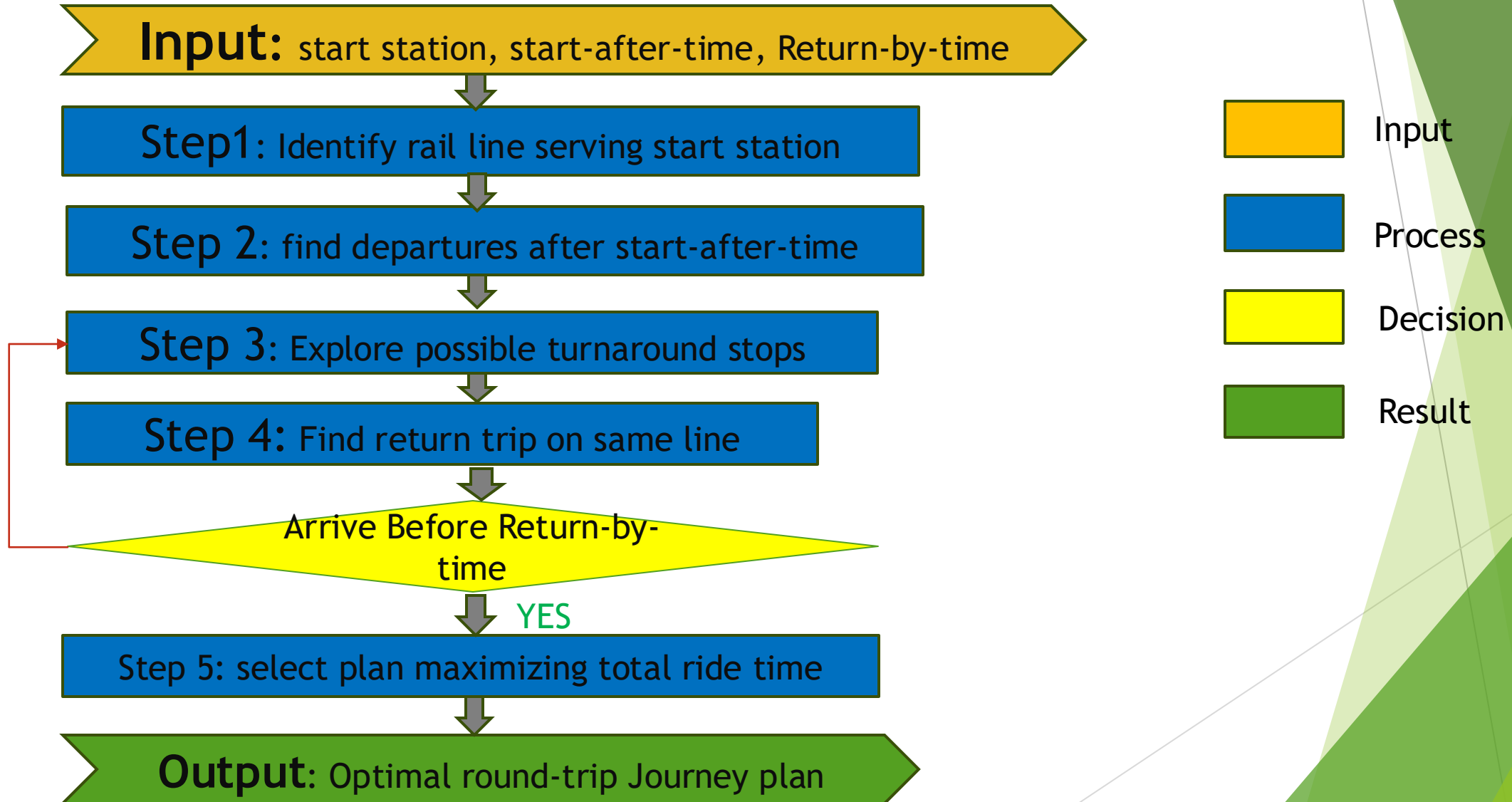
GOAL: Validate comfort-based routing using real GTFS data

- ▶ 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

The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect. The shapes are concentrated on the right side of the frame, with some extending towards the left.

Live Demo

Achievements

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

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Thank You!!!