

CONTRACT CO1: loadTrain()

- Operation:
 - loadTrainConnectionsFromCSV(CSVPath: String).
- Cross reference:
 - Use case: Load Train Network.
- Pre-conditions:
 - CSV path is readable.
- Post-conditions:
 - Instance Train connection is created for each line.
 - Each connection is contained in TrainConnectionCatalog.
 - Instance of TrainGraph is created from TrainConnectionCatalog .

CONTRACT CO2: planTrip()

- Operation:
 - planTrip(departureCity: String, arrivalCity: String, trainTypes: Set<TrainType>, departureDays: Set<DayOfWeek>).
- Cross reference:
 - Use case: *Plan Trip*.
- Pre-conditions:
 - Traingraph object exists and isn't empty.
- Post-conditions:
 - a Predicate **p** was created from trainTypes and departureDays.
 - a list **pathResults** is created by querying for routes with up to two intermediate paths.
 - for each possible route, a PathResult **pr** was created.
 - the operation returns pathResults.

CONTRACT CO3: sortByPrice()

- **Operation:**
 - **sortByPrice(choiceClass) .**
- **Cross reference:**
 - **Use Case: sortByPrice.**
- **Pre-conditions:**
 - **A path result exists.**
 - **Choice of class (user input).**
- **Post-conditions:**
 - **If the option of price is chosen then pathResults was reordered in ascending order buy price .**
 - **Instance of comparator cmp was created.**
 - **Sort by second class tickets by default.**
 - **Displays reordered pathResults/ pathresultcatalog.**

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CONTRACT CO4: sortByDuration()

- **Operation:**
 - **sortByDuration() .**
- **Cross reference:**
 - **Use Case: sortByDuration.**
- **Pre-conditions:**
 - **A path result exists.**
- **Post-conditions:**
 - **Instance of comparator cmp was created.**
 - **Display second class tickets by default.**
 - **PathResults is reordered in ascending totalDuration.**
 - **Displays reordered pathResults/ pathresultcatalog.**