

General Description

Implement a trip and ticket tracking system for TransportIncNewHope.

The application accepts and executes commands (create, list).

It has different models: Airplane, Bus, Train, Ticket, Trip

Airplane has:

- passengerCapacity that is a number representing quantity.
- Type that is a set of fixed values in the interval of [Land, Air, Sea].
- hasFreeFood that is a boolean.
- pricePerKilometer that is a number representing currency.

Should be convertible to string in the format:

Airplane

Passenger capacity: VALUE

Price per kilometer: VALUE

Vehicle type: VALUE

Has free food: VALUE

Bus has:

- passengerCapacity that is a number representing quantity in the interval of [5, 45].
- Exception message: A bus cannot have less than 5 passengers or more than 45 passengers.
- pricePerKilometer that is a number representing currency.
- Type that is a set of fixed values in the interval of [Land, Air, Sea].

Should be convertible to string in the format:

Bus

Passenger capacity: VALUE

Price per kilometer: VALUE

Vehicle type: VALUE

Train has:

- passengerCapacity that is a number representing quantity in the interval of [10, 220].
- Exception message: A train cannot have less than 10 passengers or more than 220 passengers.
- Carts that is a number representing quantity in the interval of [1, 17].
- Exception message: A train cannot have less than 1 cart or more than 17 carts.
- Type that is a set of fixed values in the interval of [Land, Air, Sea].
- pricePerKilometer that is a number representing currency.

Should be convertible to string in the format:

Train

Passenger capacity: VALUE

Price per kilometer: VALUE

Vehicle type: VALUE

Carts amount: VALUE

Trip has:

- startPoint that is a string with length in the interval of [3, 30].
- Exception message: The StartingLocation's length cannot be less than 3 or more than 30 symbols long.
- destination that is a string with length in the interval of [3, 30].
- Exception message: The Destination's length cannot be less than 3 or more than 30 symbols long.
- distance that is a number representing quantity in the interval of [1, 40075].
- Exception message: The Distance cannot be less than 1 or more than 40075 kilometers.
- vehicle that is the vehicle used in the trip.
- calculateTripPrice()
- Multiplying the Distance by the Vehicle's price per kilometer.

Should be convertible to string in the format:

Trip

Start point: VALUE

Destination: VALUE

Distance: VALUE

Vehicle type: VALUE

Travel costs: VALUE

Ticket has:

- Trip that is the destination the ticket is sold for.
- price that is a number representing currency.
- calculateTripPrice() that returns a currency calculated by:
- Multiplying the price by the Trip's travel costs.

Should be convertible to string in the format:

Ticket

Destination: VALUE

Price: VALUE

TravellerFactory has:

createBus(...) that needs to be implemented.

createAirplane(...) that needs to be implemented.

createTrain(...) that needs to be implemented.

createTrip(...) that needs to be implemented.

createTicket(...) that needs to be implemented.

Additional validations

A vehicle with less than 1 passenger or more than 600 passengers cannot exist!

Exception message: A vehicle with less than 1 passengers or more than 600 passengers cannot exist!

A vehicle with a price per kilometer lower than \$0.20 or higher than \$3.00 cannot exist!

Exception message: A vehicle with a price per kilometer lower than \$0.20 or higher than \$3.00 cannot exist!

Commands

createbus [passangerCapacity] [pricePerKilometer] - Creates a new Bus.

createtrain [passangerCapacity] [pricePerKilometer] [carts] - Creates a new Train.

createtrip [startPoint] [destination] [distance] [vehicleIndex] - Creates a new trip.

listtrips - Lists all stored trips.

listtickets - Lists all stored tickets.

createairplane [passangerCapacity] [pricePerKilometer] [hasFreeFood] - Creates a new Airplane.

createticket [tripIndex] [administrativeCosts] - Creates a new Ticket.

listvehicles - Lists all stored vehicles.

Example

Input

```
createbus 10 0.7
createtrain 300 0.4 3
createairplane 250 1 true
createairplane 250 2.7 true
createtrain 80 0.4 3
listvehicles
createtrip Sofia vTurnovo 300 0
createtrip Sofia vTurnovo 3 0
createtrip vTurnovo Sofia 300 3
listtrips
createticket 0 30
createticket 1 100
listtickets
exit
```

Output

```
Bus
Passenger capacity: 10
Price per kilometer: 0.7
Vehicle type: Land

Train
Passenger capacity: 300
Price per kilometer: 0.4
Vehicle type: Land
```

Carts amount: 3

Airplane

Passenger capacity: 250

Price per kilometer: 1.0

Vehicle type: Air

Airplane

Passenger capacity: 250

Price per kilometer: 2.7

Vehicle type: Air

Train

Passenger capacity: 80

Price per kilometer: 0.4

Vehicle type: Land

Carts amount: 3

Trip

startPoint: Sofia

destination: vTurnovo

distance: 300

vehicle: Bus

Passenger capacity: 10

Price per kilometer: 0.7

Vehicle type: Land

Trip

startPoint: Sofia

destination: vTurnovo

distance: 3

vehicle: Bus

Passenger capacity: 10

Price per kilometer: 0.7

Vehicle type: Land

Trip

startPoint: vTurnovo

destination: Sofia

distance: 300

vehicle: Airplane

Passenger capacity: 250

Price per kilometer: 2.7

Vehicle type: Air

Ticket

price: 30.0

trip: Trip

startPoint: Sofia

destination: vTurnovo

distance: 300

vehicle: Bus

Passenger capacity: 10

Price per kilometer: 0.7

Vehicle type: Land

Ticket

price: 100.0

trip: Trip

startPoint: Sofia

destination: vTurnovo

distance: 3

vehicle: Bus

Passenger capacity: 10

Price per kilometer: 0.7

Vehicle type: Land