VRP_V3.0

Catalog

version

1019 version:

VRP工程侧接口文档

1116 version:

BR-routing graph module re-development

1221 version:

add cost Tier and target

Scene

target
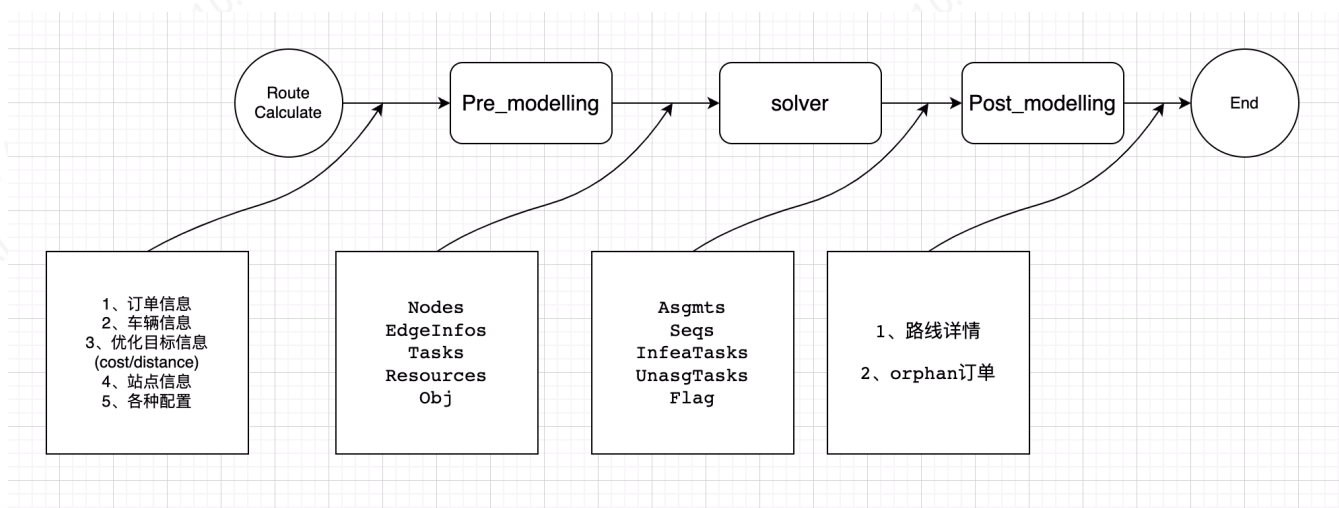
	objective
score	vehicle num
	total distance
	avg/total cost
	delivery parcel num

constrain

type	constrain	
running time	running time	<=10min
vehicle constrain	parcel num weight distance	max, min
	vehicle num	limit
	vehicle type	heterogeneous
	trans mode	roundtrip

delivery demand	max parcel	<=10000 orders

Design

pre module

Function

business to mathematic

1. Handle order filtering for business requirements, handle simple constraint filtering, avoid abnormal data and reduce unnecessary data from entering VRP.

2. Process the order aggregation required by the business (same address).

3. Aggregate the input order group by latitude and longitude, text, etc. to generate stop point.

4. Prune the adjacency relationship, reduce the dimension and solution space of the problem, and generate a road network request matrix.

5. Request road network.

6. Process and convert the data structure required by the solver module.

main structure

Modeling 接口

solver module

Function

1. Order grouping.

2. Generate a route solution.

Vehicle Routing Version 1.0

main structure

Solver接口文档

post module

Function

mathematic to business

1. According to the upstream results, an orphan order group is generated.

2. Process the results of the vrp module to generate route information.

main structure

Modeling 接口

PostProcessReq

Input parameters of the post-processing module

字段	类型	含义
SolverResult	solver.SolverOutput	Solver's output parameters
SolverInput	solver.SolverInput	Solver's input parameters
PreResult	PreProcessResult	The result of the preprocessing part
StationID	string	station id

PostProcessResult

Output parameters of the post-processing module

字段	类型	含义
OrphansException	[]*Order	orders that cannot be carried in theory
OrphansOverload	[]*Order	orders that cannot be delivered beyond the resource limit
SameLocationAsStation	[]*Order	orders that as same as station's location
Routes	[]RouteResult	Delivery route information
ModellingPathInfo	ModellingBypass	Road network module and solver module running information

RouteResult

字段	类型	含义
RouteId	string	RouteId
VehicleId	string	VehicleId
VehicleName	string	VehicleName

RouteDistance	float64	RouteDistance
RouteWeight	float64	RouteWeight
RouteOrderNum	int64	RouteOrderNum
RouteServiceTime	float64	RouteServiceTime
OrderGroups	[]*OrderGroup	OrderGroups
Cost	float64	Cost
SubSequenceDetail	[]SubSequenceDetailResult	SubSequenceDetail

SubSequenceDetail

字段	类型	含义
StartAlgoAddrId	string	StartAlgoAddrId
EndAlgoAddrId	string	EndAlgoAddrId
StartAddr	string	StartAddr
EndAddr	string	EndAddr
Distance	float64	Distance
Duration	float64	Duration