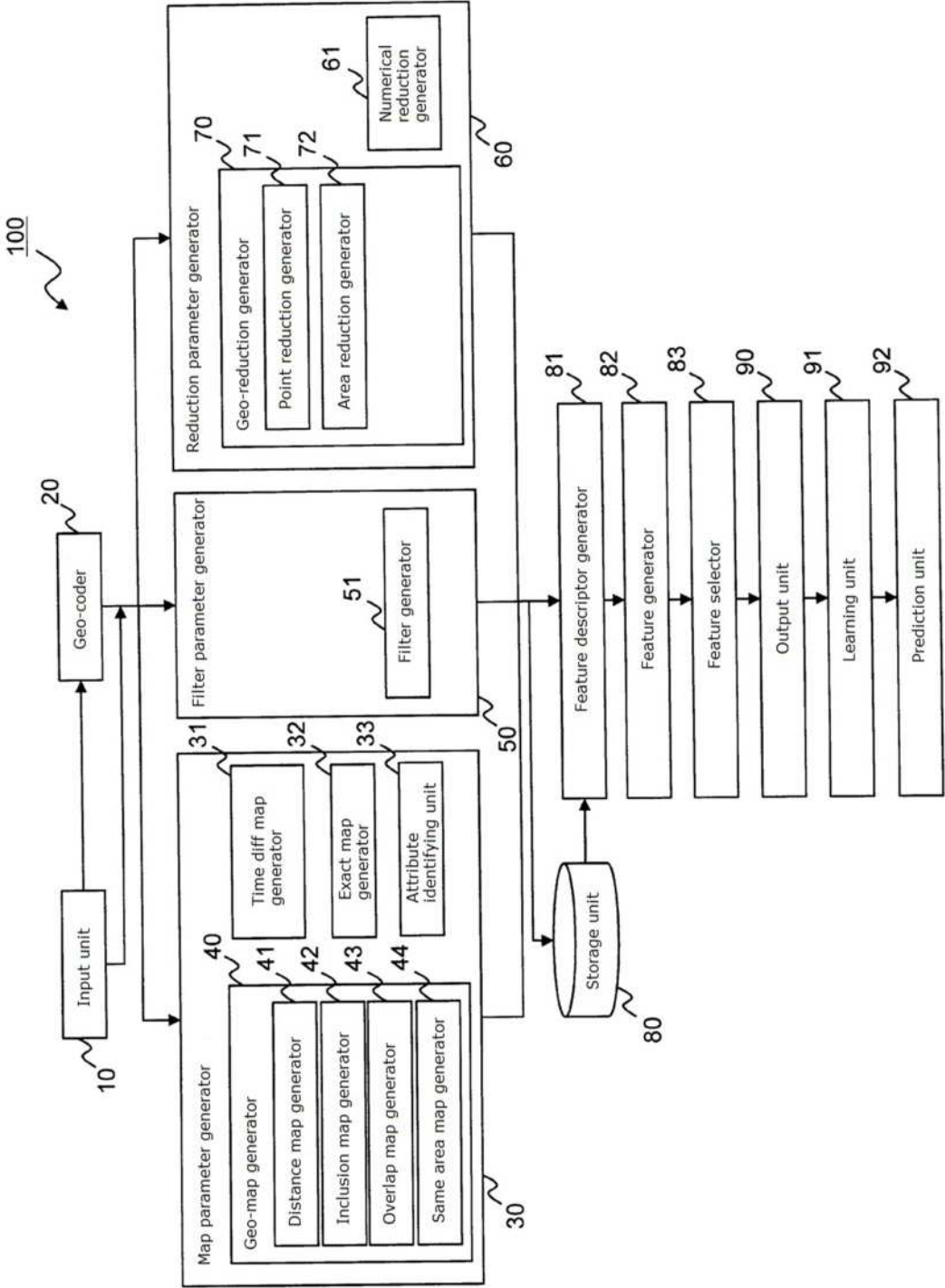
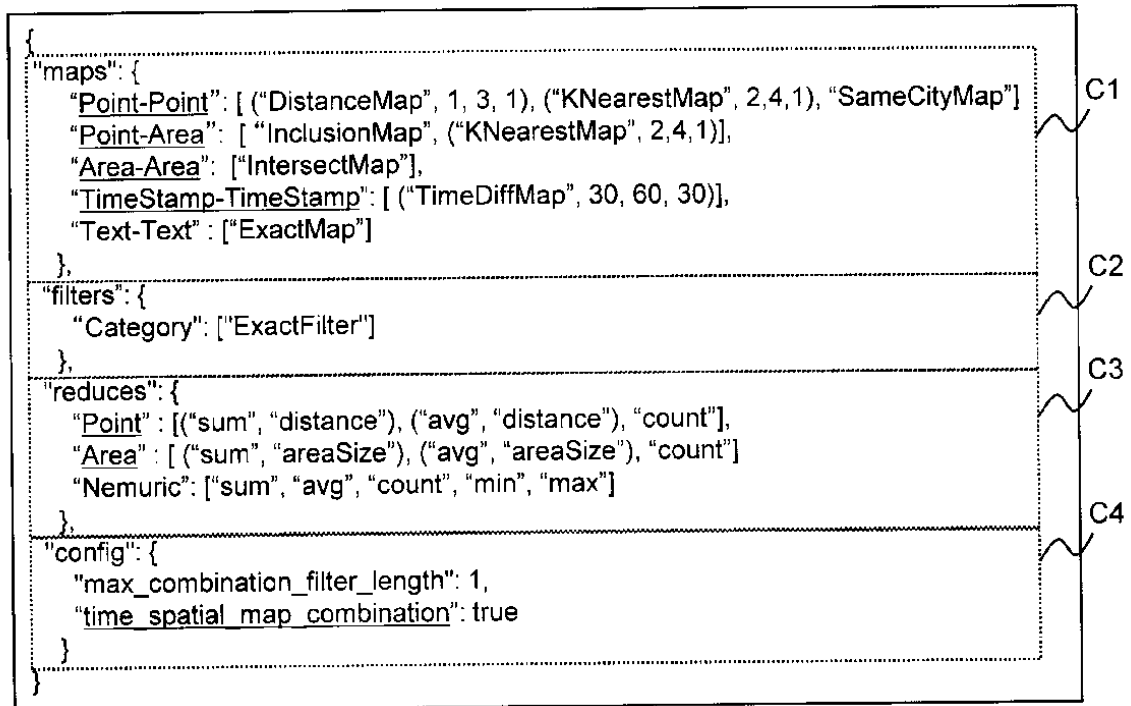


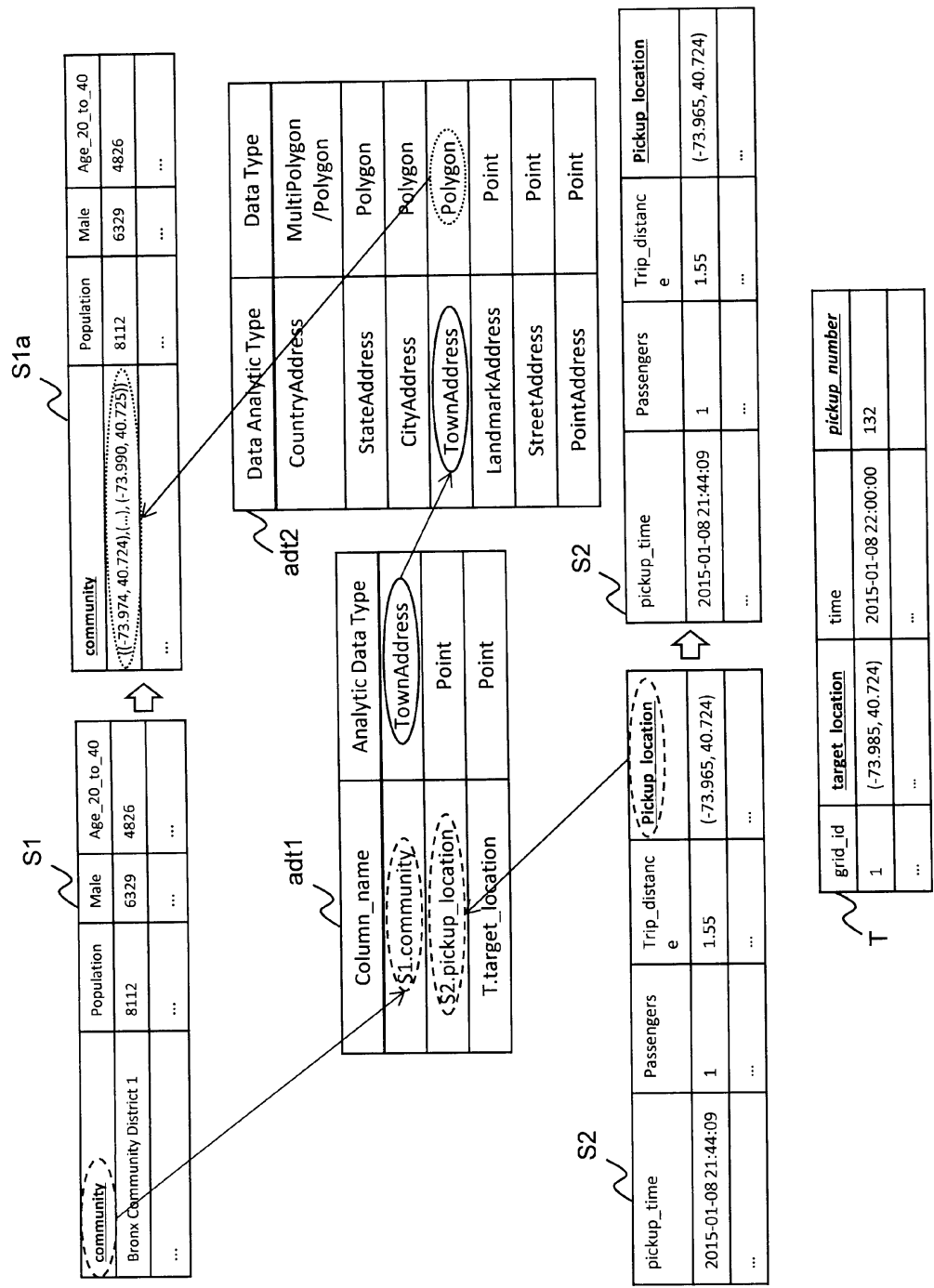
[FIG. 1]



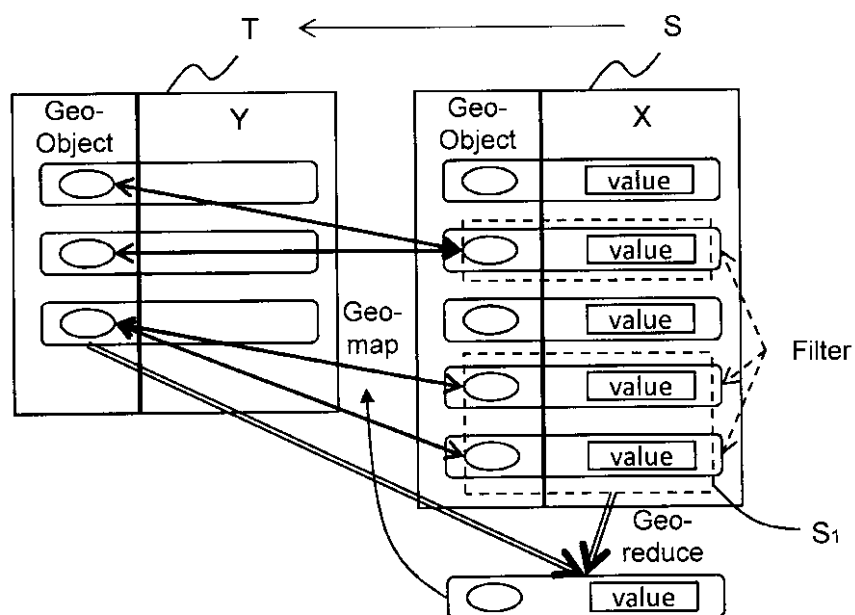
[FIG. 2]



[FIG. 3]

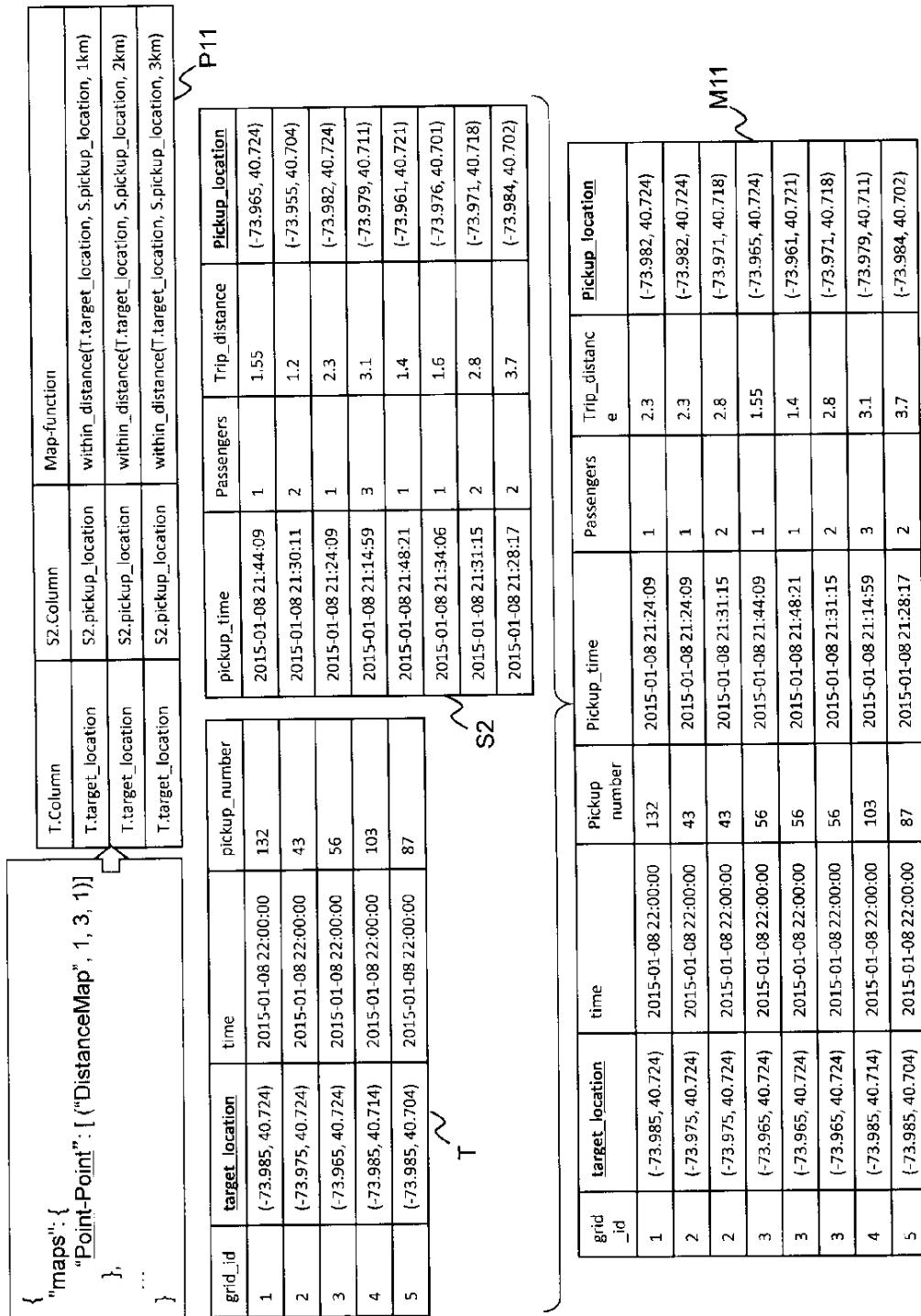


[FIG. 4]



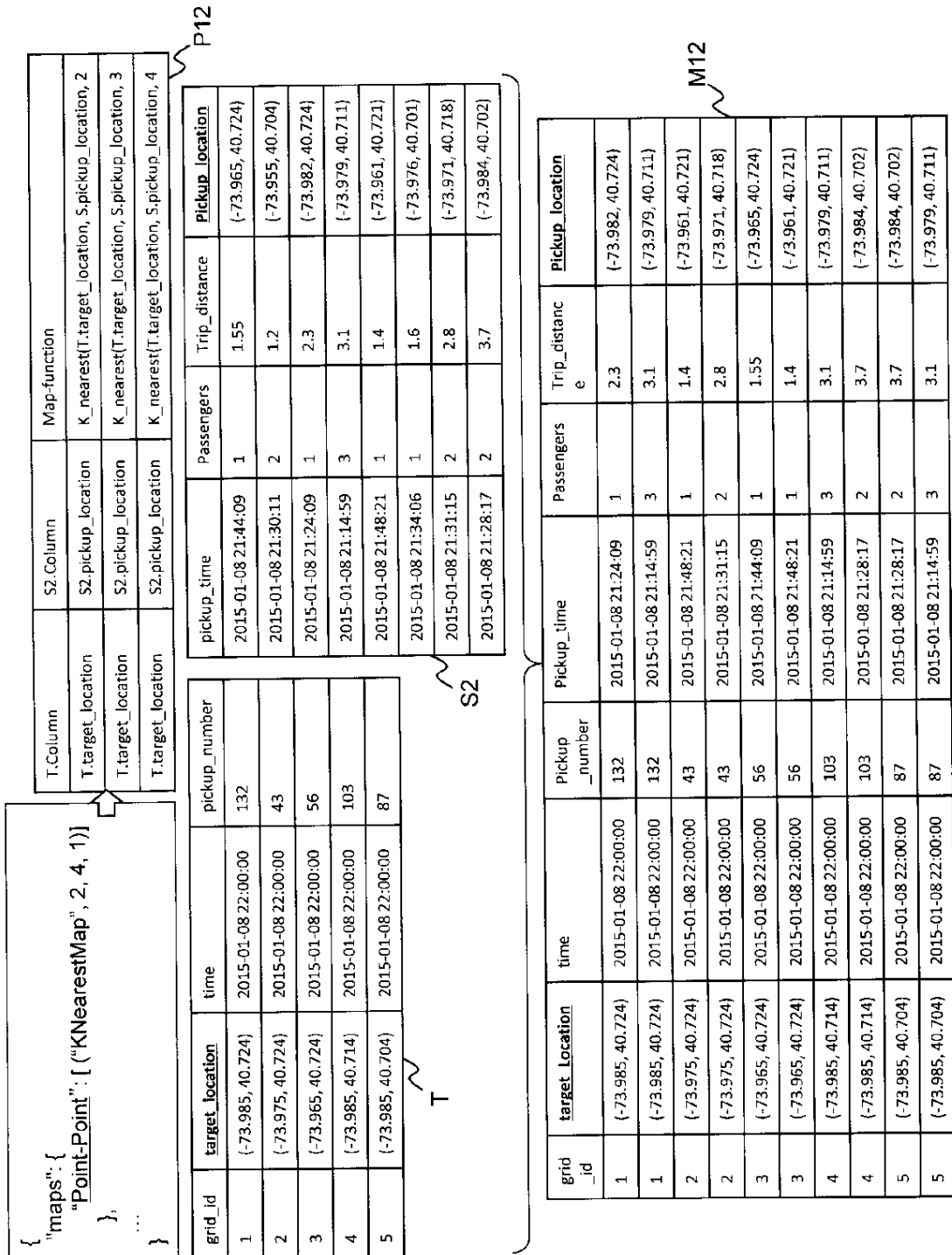
[FIG. 5]

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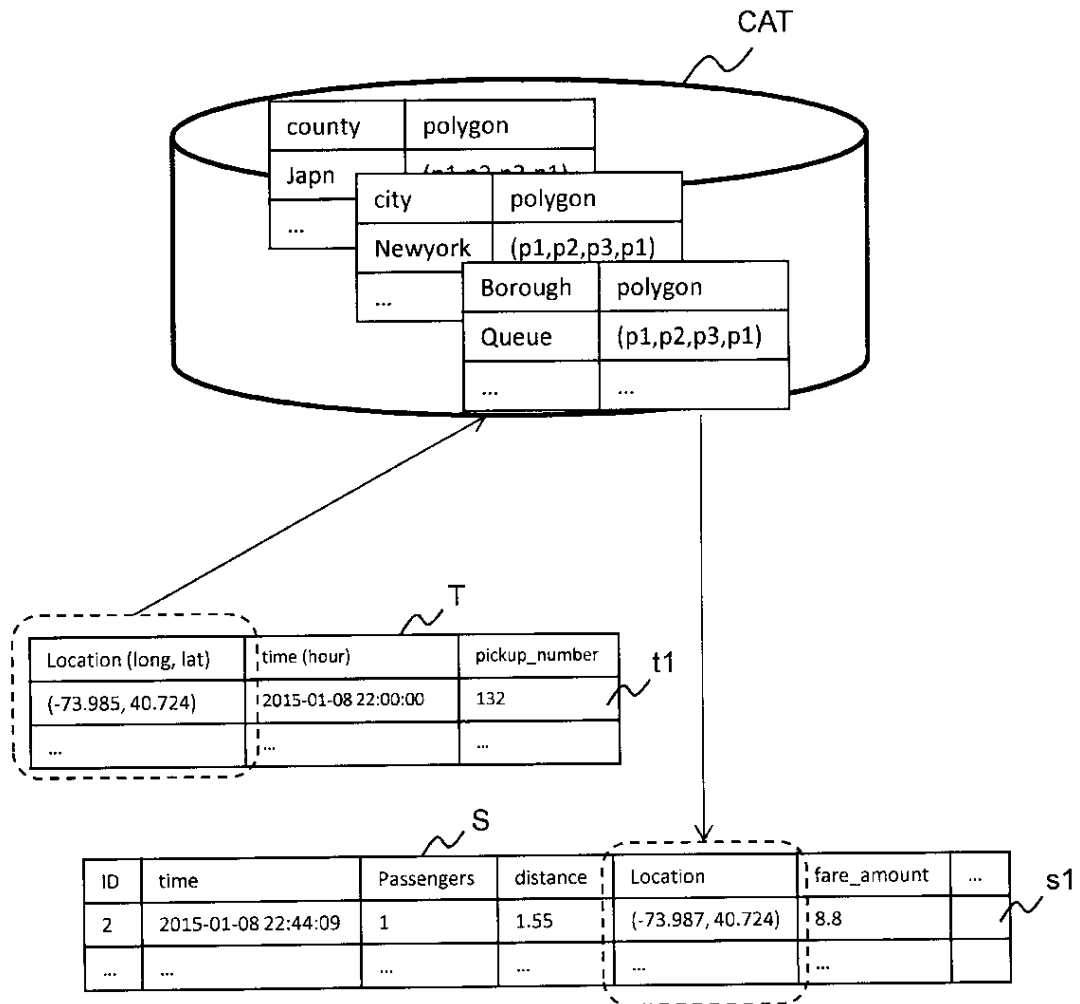


[FIG. 6]

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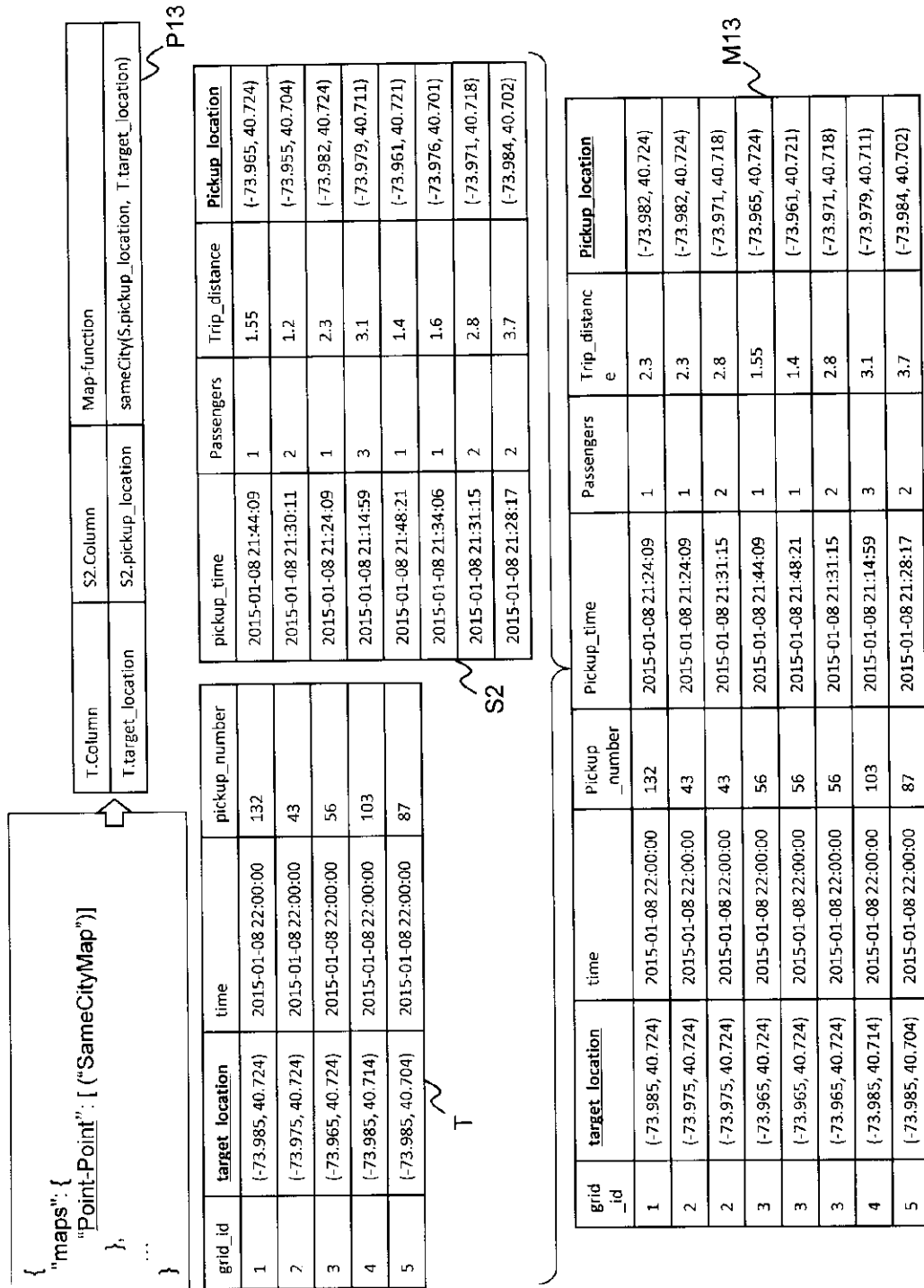


[FIG. 7]



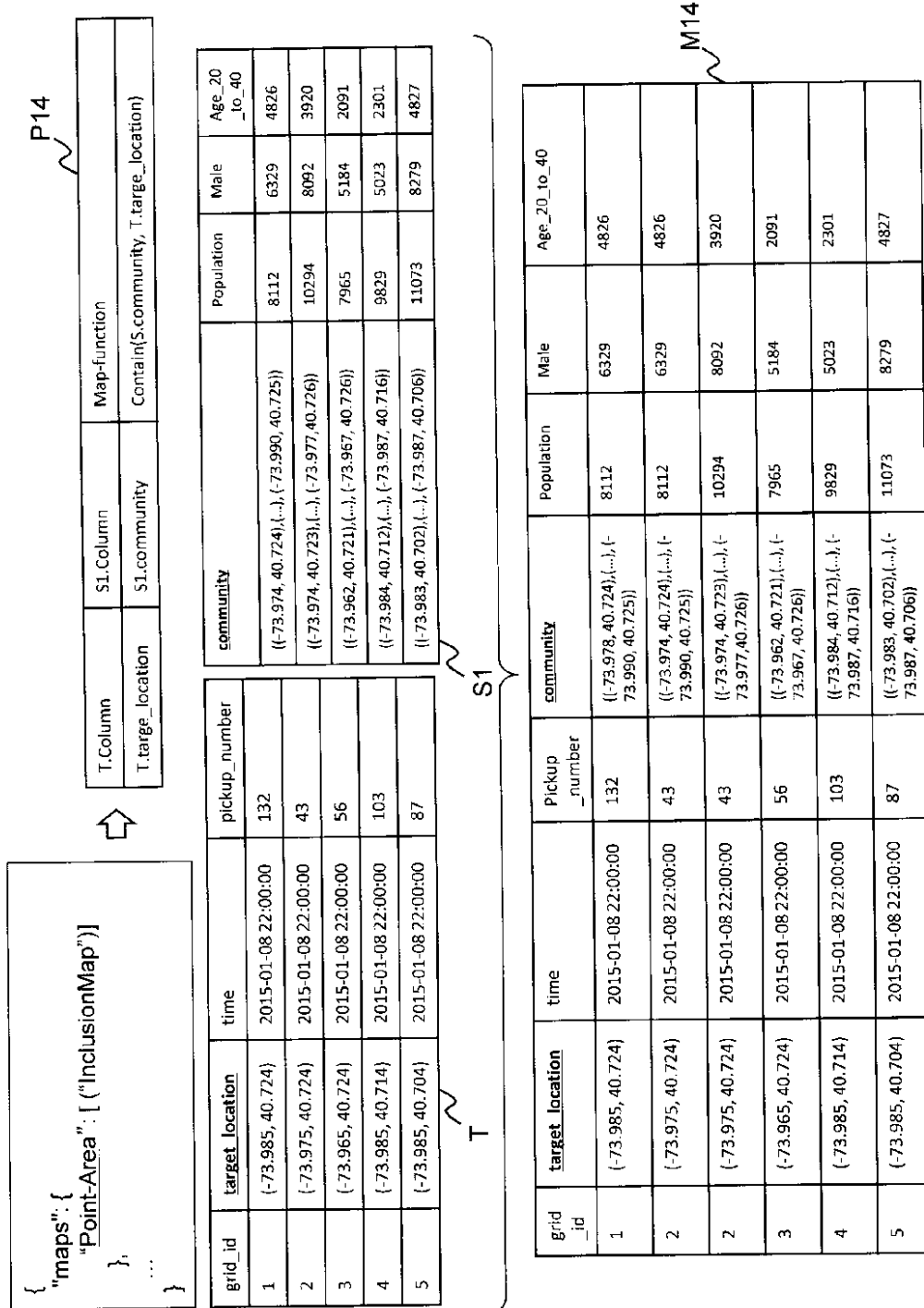
[FIG. 8]

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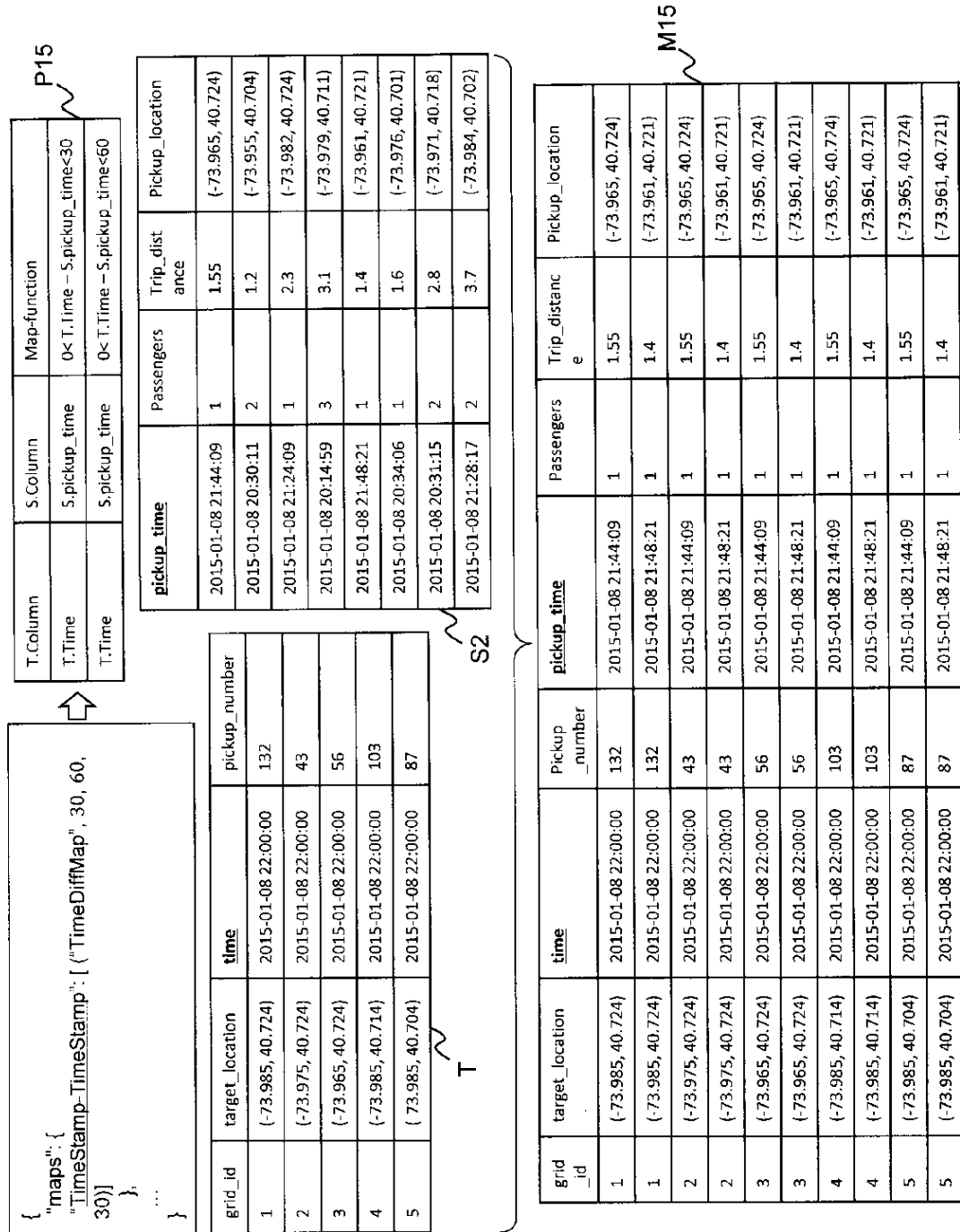


[FIG. 9]

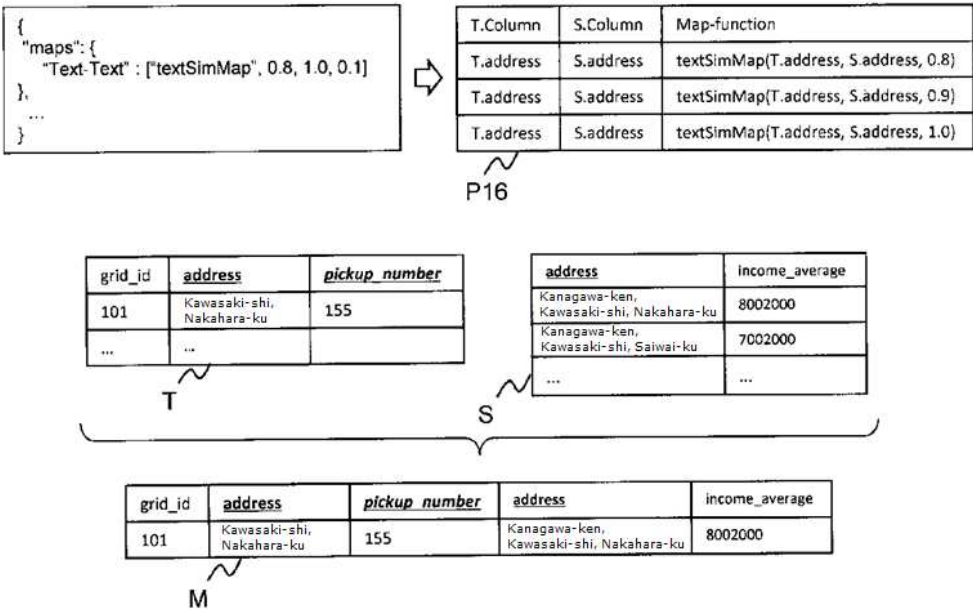
9/20



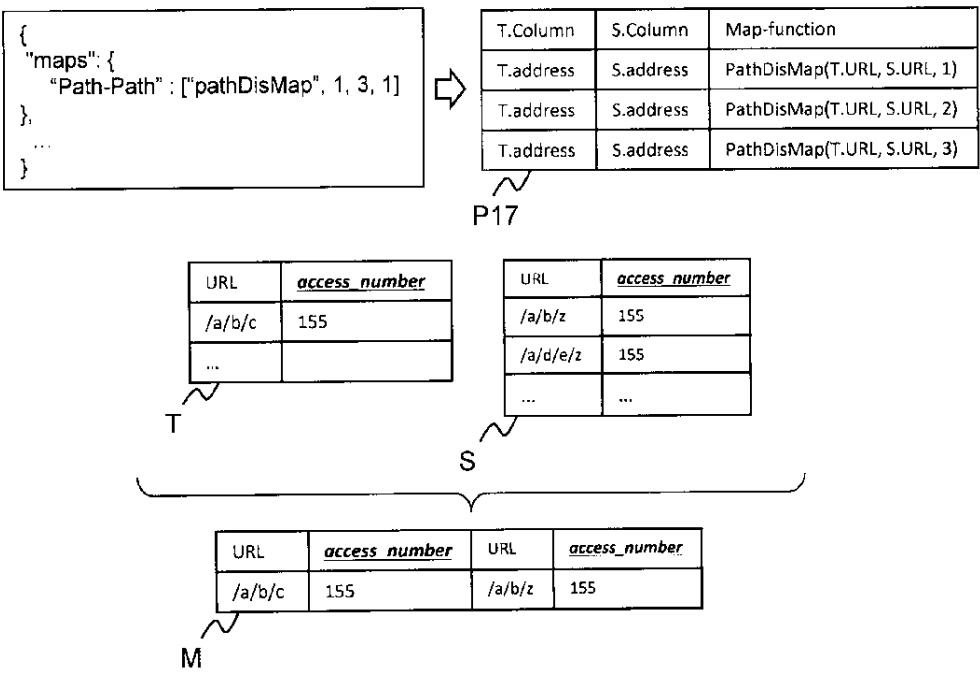
[FIG. 10]



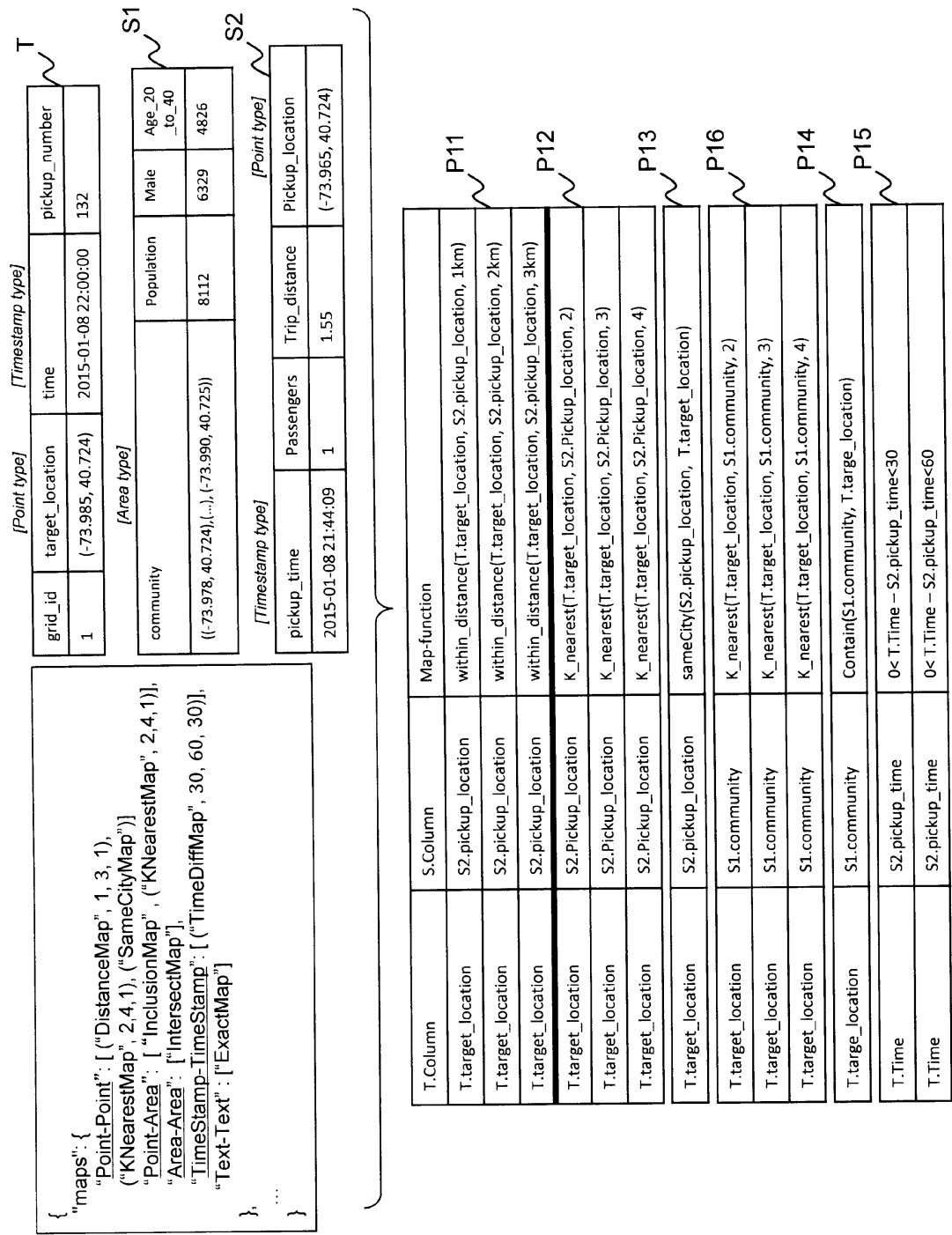
[FIG. 11]



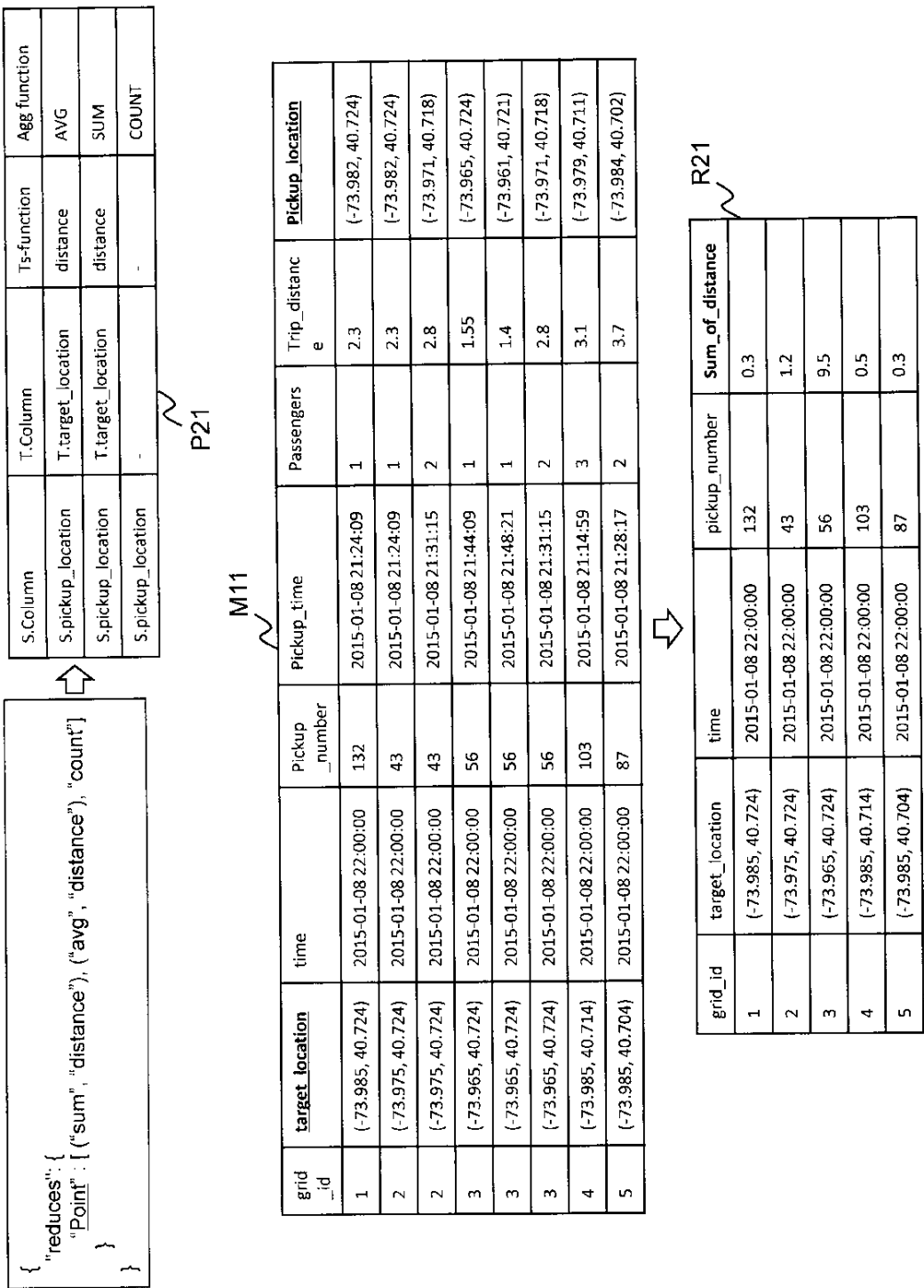
[FIG. 12]



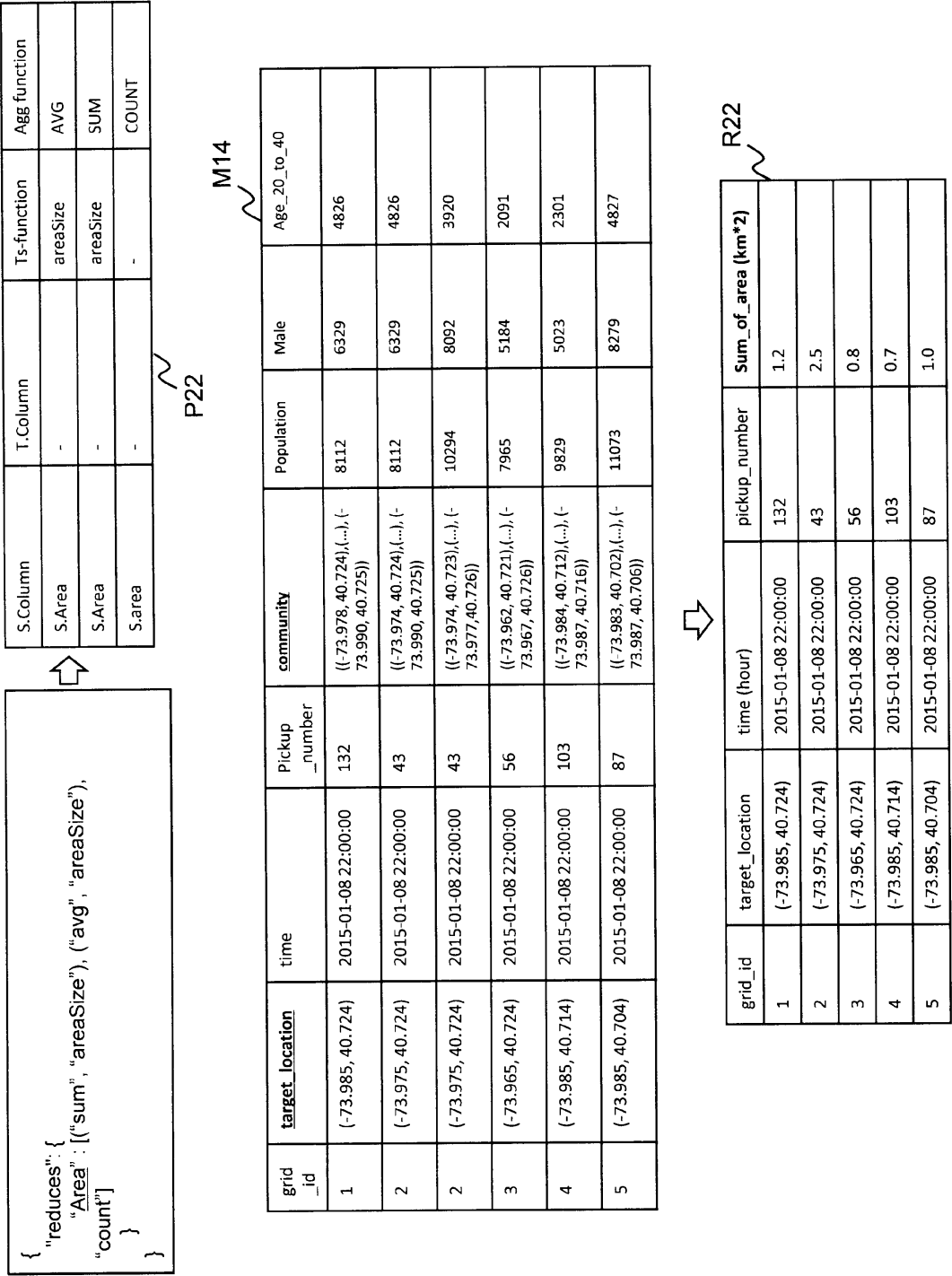
[FIG. 13]



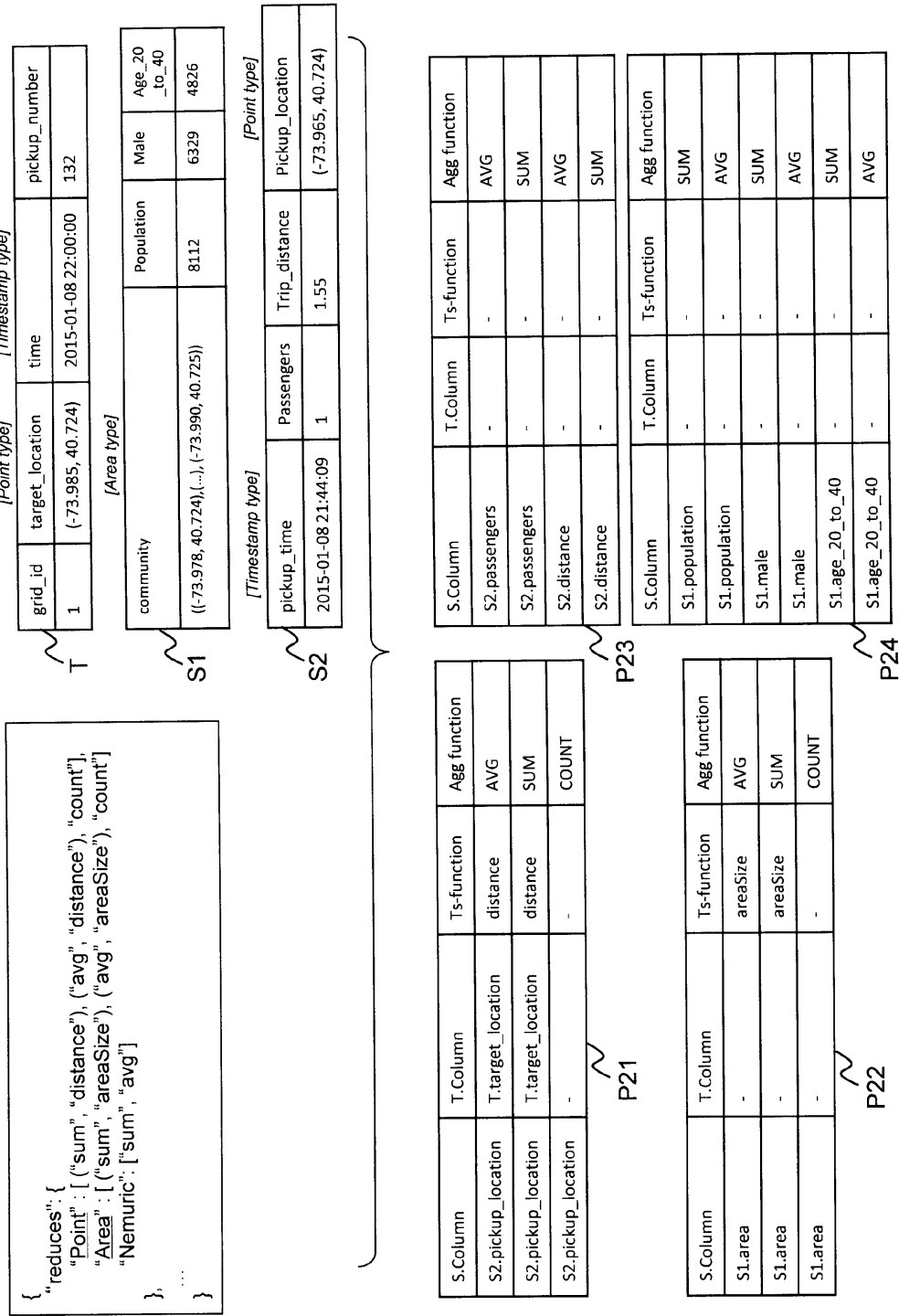
[FIG. 14]



[FIG. 15]



[FIG. 16]



[FIG. 17]

```
{
  "config": {
    "max_combination_filter_length": 1,
    "time_spatial_map_combination": true
  }
}
```

T.Column	S.Column	Map-function	T.Column	S.Column	Map-function
T.target_location	S2.pickup_location	within_distance(T.target_location, S2.pickup_location, 1km)	T.Time	S2.pickup_time	0< T.Time - S2.pickup_time<30
T.target_location	S2.pickup_location	within_distance(T.target_location, S2.pickup_location, 2km)	T.Time	S2.pickup_time	0< T.Time - S2.pickup_time<60
T.target_location	S2.pickup_location	within_distance(T.target_location, S2.pickup_location, 3km)	P15		
T.target_location	S2.Pickup_location	K_nearest(T.target_location, S2.Pickup_location, 2)			
T.target_location	S2.Pickup_location	K_nearest(T.target_location, S2.Pickup_location, 3)			
T.target_location	S2.Pickup_location	K_nearest(T.target_location, S2.Pickup_location, 4)			

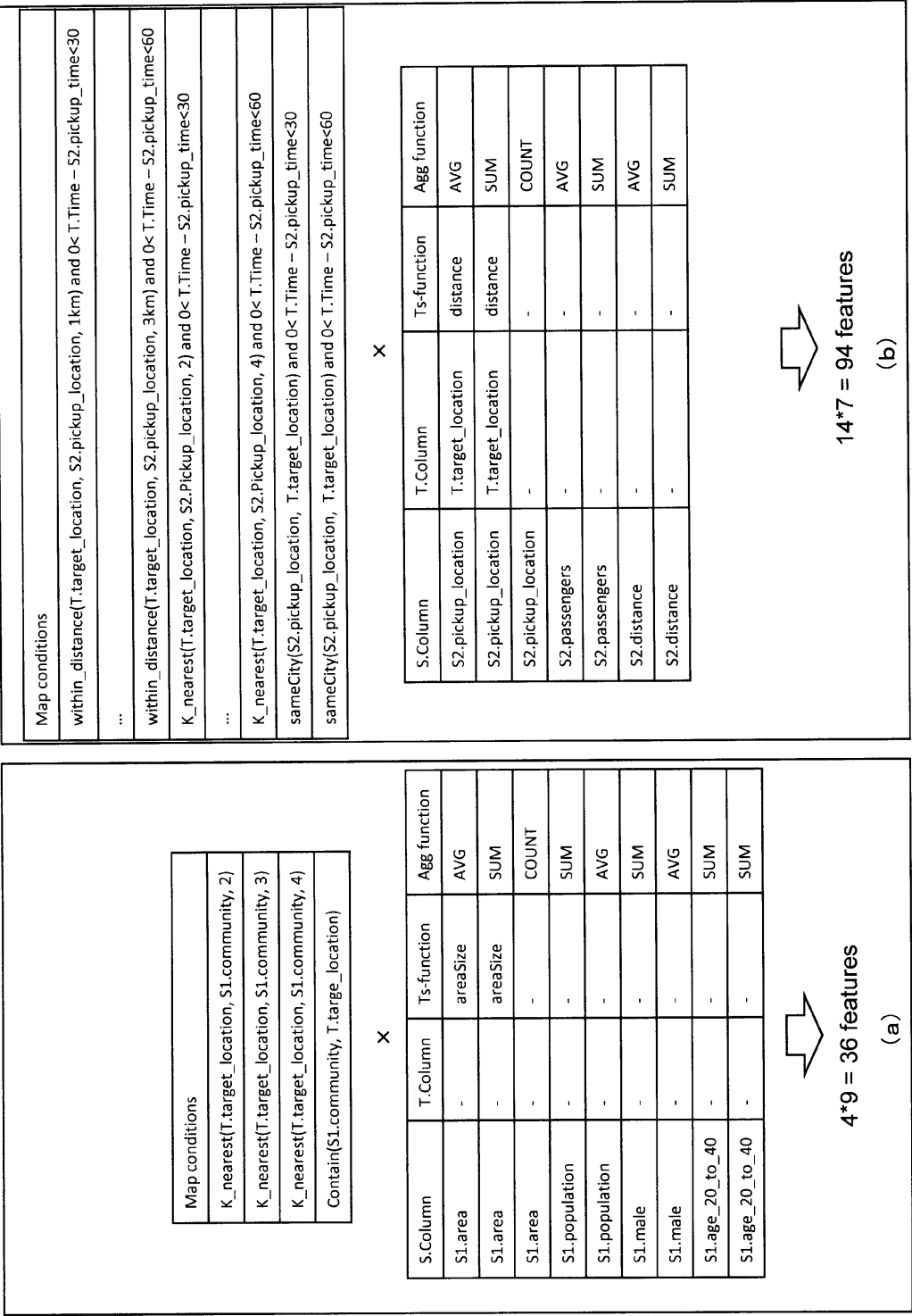
P11

P12

Map conditions
within_distance(T.target_location, S2.pickup_location, 1km) and 0< T.Time - S2.pickup_time<30
...
within_distance(T.target_location, S2.pickup_location, 3km) and 0< T.Time - S2.pickup_time<60
K_nearest(T.target_location, S2.Pickup_location, 2) and 0< T.Time - S2.pickup_time<30
...
K_nearest(T.target_location, S2.Pickup_location, 4) and 0< T.Time - S2.pickup_time<60

P31

[FIG. 18]



Map conditions
K_nearest(T.target_location, S1.community, 2)
K_nearest(T.target_location, S1.community, 3)
K_nearest(T.target_location, S1.community, 4)
Contain(S1.community, T.target_location)

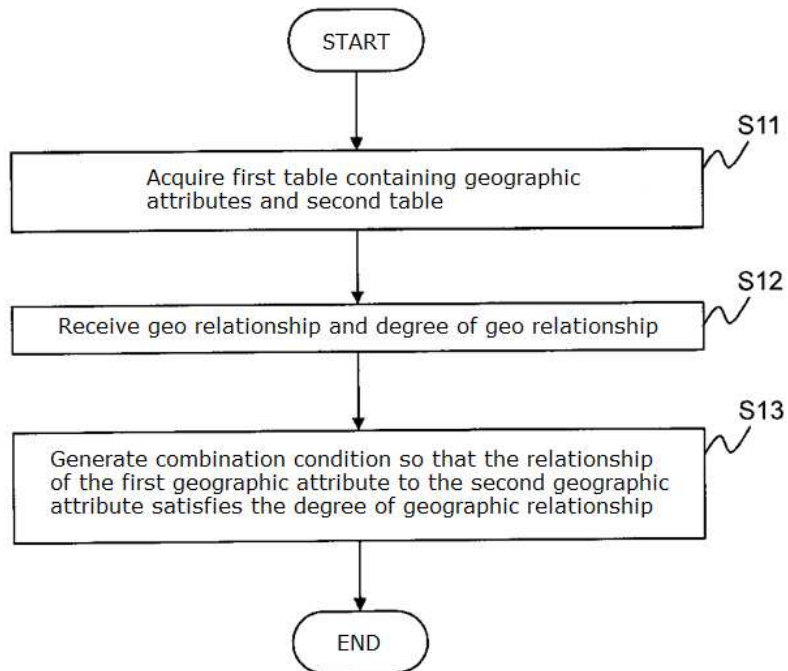
X

S.Column	T.Column	Ts-function	Agg function
S1.area	-	areaSize	AVG
S1.area	-	areaSize	SUM
S1.area	-	-	COUNT
S1.population	-	-	SUM
S1.population	-	-	AVG
S1.male	-	-	SUM
S1.male	-	-	AVG
S1.age_20_to_40	-	-	SUM
S1.age_20_to_40	-	-	SUM

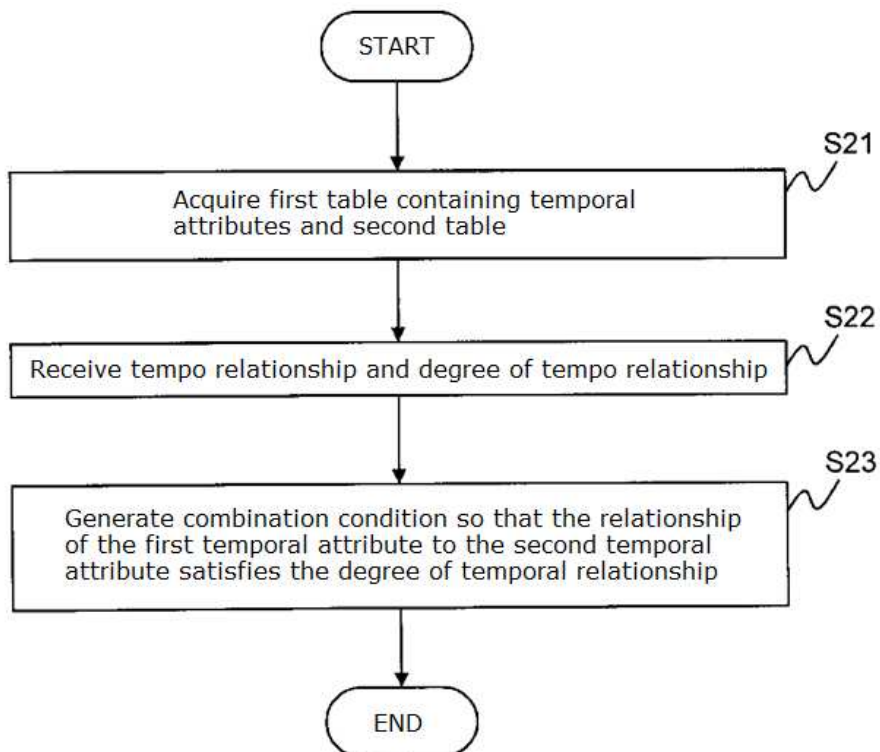
4*9 = 36 features

(a)

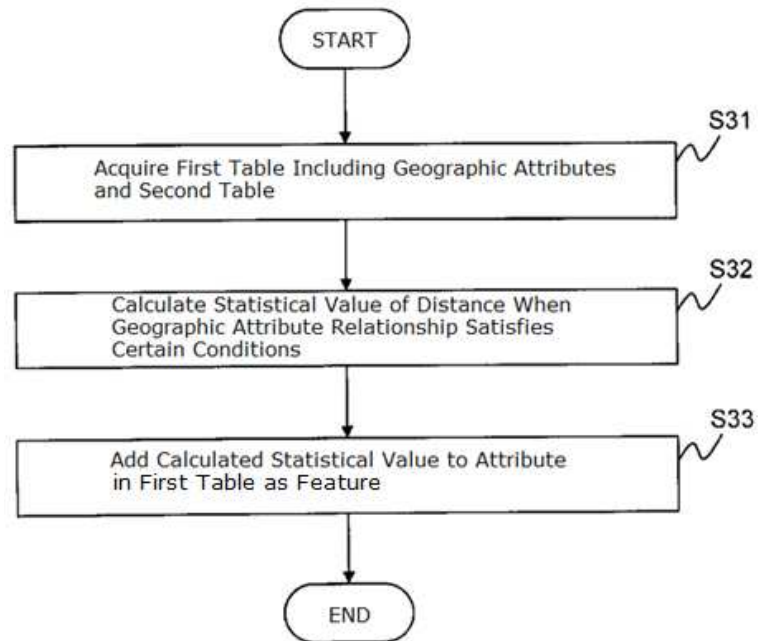
[FIG. 19]



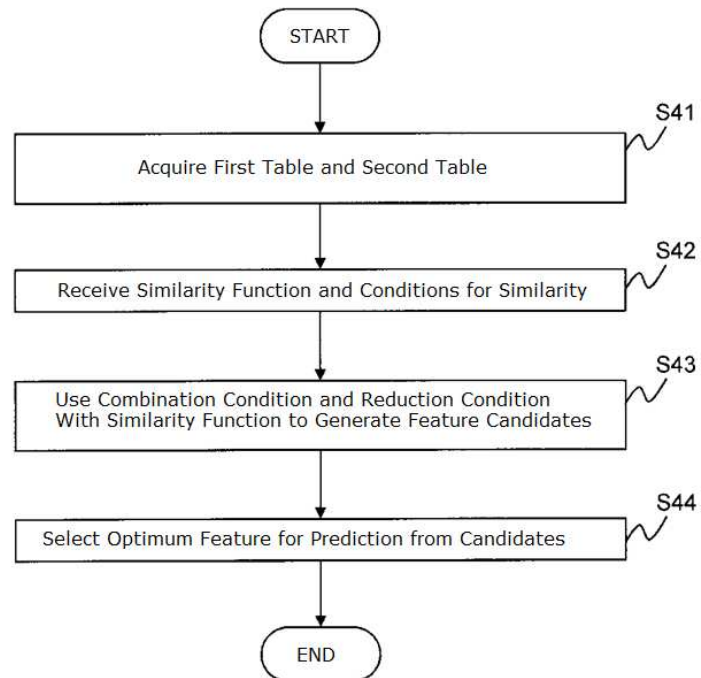
[FIG. 20]



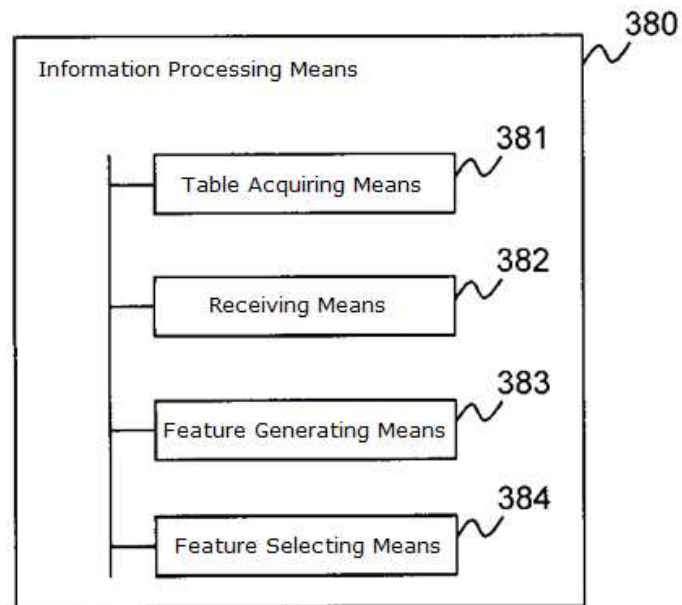
[FIG. 21]



[FIG. 22]



[FIG. 23]



[FIG. 24]

