Calculation Logic

Urban Routes considers the current time as the departure time. The user specifies point A and point B. Afterward, the application calculates the duration and cost of the trip using a specific algorithm.

Distance, speed, and cost per minute or per kilometer can be found in the tables. These data are sufficient to calculate the trip's time and cost for each type of transportation.

Transportation Type	Speed	Cost
Carsharing	refer to the "Average Car Speed" table	$0.1 / min

Average Car Speed

Time	Average Car Speed
00:01-08:00	45 km/h
08:01-12:00	30 km/h
12:01-18:00	40 km/h
18:01-22:00	25 km/h
22:01-00:00	45 km/h

Highway address distance matrix, in kilometers

Address	East 2nd Street, 601	1300 1st St	4201 Whittier Blvd	1717 E 7th St	1917 Bay St	1811 E 20th St	615 S Broadway
East 2nd Street, 601	0	1,4	1,5	0,89	2,6	2,6	2,6
1300 1st St	1,4	0	2,9	2,3	2,3	2,3	2,3
4201 Whittier Blvd	1,4	1,5	0	1,9	3,8	3	3,3
1717 E 7th St	1,5	3	2,4	0	1,2	3,4	2,3
1917 Bay St	1,5	3,7	3,7	1,2	0	1,7	1,7
1811 E 20th St	3,2	3,9	4,7	2,7	1,7	0	2,2
615 S Broadway	1,4	2,4	3,5	2,3	1,4	1,3	0

Note: To calculate the trip's time and cost, use the tables with the displacement speed of various means of transportation at different times of the day to which you have access. If you select test values that cover multiple time intervals, the algorithm will choose the car's speed within the interval in which the trip began.