Q4 : Food Delivery Booking

A food delivery company has 'n' number of delivery executives. For simplicity take the count as 5 but the program should work for any number of delivery executives (Let their names be identified as DE1, DE2....DE-n)

There are only 5 restaurants in the city for pick-up and 5 drop locations (Each location can have multiple customers). After delivering a food package , the delivery executive waits there for delivery allotment.

Each customer is identified uniquely by a Customer-ID.

Write a program that does the following,

Constraints :

1. Delivery charge for every single order is Rs 50 for the delivery executive.

2. If multiple orders (say n) are from the same delivery location within 15 mins period, combine orders to a maximum of 5 per delivery executive. In such case, the delivery charge will be base rate Rs.50 + Rs.5 for every other order (50+5 * (n-1)).
3. An allowance of Rs.10 will be given for every trip made. Combined orders will be counted as a single trip.
4. Assign the subsequent bookings giving preference to the executive who has earned the least delivery charge among the other available delivery executives excluding trip allowance.
5. Every trip will take 30 mins to reach the destination.

Questions :

1. Write a function to handle booking.
2. Write a function to assign delivery executive
3. Write a function that can display delivery executive's activity thus far. (This should contain commission earned , allowance earned(calculated based on criteria 2 and 3).

Input 1
Customer ID: 1
Restaurant: A
Destination Point : D
Time : 9.00 AM

Output

Booking ID : 1

Available Executives :

Executive	Delivery Charge Earned
DE1	0
DE2	0
DE3	0
DE4	0
DE5	0

Allotted Delivery Executive: DE1

Input 2

Customer ID: 2

Restaurant : B

Destination Point : A

Time : 10.00 AM

Output

Booking ID : 2

Available Executives :

Executive	Delivery Charge Earned
DE1	50
DE2	0
DE3	0
DE4	0
DE5	0

Allotted Delivery Executive: DE2

Input 3

Customer ID: 3

Restaurant : B

Destination Point : A

Time : 10.10 AM

Output

Booking ID : 3

Available Executives :

Executive	Delivery Charge Earned
DE1	50

DE2 50
DE3 0
DE4 0
DE5 0
Allotted Delivery Executive: DE2 (because same location within 15mins)

Input 4
Customer ID: 3
Restaurant : D
Destination Point : C
Time : 10.35 AM
Output
Booking ID : 3
Available Executives :
Executive Delivery Charge Earned
DE1 50
DE2 55
DE3 0
DE4 0
DE5 0
Allotted Delivery Executive: DE3

Delivery History
Output
TRIP EXECUTIVE RESTAURANT DESTINATION POINT ORDERS PICK-UP_TIME DELIVERY_TIME DELIVERY CHARGE
1 DE1 A D 1 9:15 9:45 50
2 DE2 B A 2 10:15 10:45 55
3 DE3 D C 1 10:50 11:20 50

Total earned
Executive Allowance Deliver Charges Total
DE1 10 50 60
DE2 10 55 65

DE3 10 50 60

TRIP	EXECUTIVE	RESTAURENT	DESTINATION POINT	ORDERS COMPLETED	PICKUP TIME	DELIVERY TIME	DELIVERY CHARGE
1	DE1	A	D	1	9:15	9:45	50
2	DE2	B	A	2	10:15	10:45	55
3	DE3	D	C	1	10:50	11:20	50