Taxi Booking Application

- There are n number of taxi's. For simplicity, assume 4. (But it should work for any number of taxi's)
- The are 6 points(A,B,C,D,E,F)
- All the points are in a straight line.
- Each point is 15kms away from the adjacent points.
- It takes 60 mins to travel from one point to another(15km in 60 mins)
- Each taxi charges Rs.100 minimum for the first 5 kilometres
- Rs.10 for the subsequent kilometres.
- For simplicity, time can be entered as absolute time. Eg: 9hrs, 15hrs etc.
- All taxi's are initially stationed at A.
- When a customer books a Taxi, a free taxi at that point is allocated
- If no free taxi is available at that point, a free taxi at the nearest point is allocated.
- If two taxi's are free at the same point, one with lower earning is allocated
- Note that the taxi only charges the customer from the pickup point to the drop point. Not the distance it travels from an adjacent point to pickup the customer.
- If no taxi is free at that time, booking is rejected

Design modules for

1. Call taxi booking

   Input 1:
   Customer ID: 1
   Pickup Point: A

Drop Point: B
Pickup Time: 9

Output 1:
Taxi can be allotted.
Taxi-1 is allotted

Input 2:
Customer ID: 2
Pickup Point: B
Drop Point: D
Pickup Time: 9

Output 1:
Taxi can be allotted.
Taxi-2 is allotted
(Note: Since Taxi-1 would have completed its journey when second booking is done, so Taxi-2 from nearest point A which is free is allocated)

Input 3:
Customer ID: 3
Pickup Point: B
Drop Point: C
Pickup Time: 12

Output 1:
Taxi can be allotted.
Taxi-1 is allotted

2. Display the Taxi details

Taxi No: Total Earnings:
BookingID CustomerID From To PickupTime DropTime Amount

Output:
Taxi-1 Total Earnings: Rs. 400

1 1 A B 9 10 200
3 3 B C 12 13 200

Taxi-2 Total Earnings: Rs. 350
2 2 B D 9 11 350