Car Pooling System - Requirement 4

You are a very active member of a Nature Club in your organization. In one of the meetings, it was discussed to build a car pooling system to help cut down the pollution. Being very active and tech savvy, you wish to contribute towards the development of system. One of the members being an architect has understood the requirement and would be sharing you with smaller requirements.

Requirement 4:

Very soon you discover that there are different classes of Cars that can be pooled. Each class of cars does share some common properties as well as some specific properties. Represent the above requirement in Object Orientation. Mark the base class as abstract.

Use the Car class created in Requirement 2. Retain attributes id and name. Lets' ignore rest of the attributes for this requirement. Make the appropriate access modifier change to enable the attributes to be accessible to child classes.

Car

Member Field name	Type
id	Long
name	String

1. Create 3 child classes with Car as base class and the following attributes.

HatchBack

Member Field name	Type
powerWindowsEnabled	Boolean
automaticGear	Boolean

Sedan

Member Field name	Type
absEnabled	Boolean
bootSpace	Integer

UtilityCar

Member Field name	Type
rearCoolingVents	Boolean

2. Mark the access modifiers appropriately, and create constructors using super keyword.

3. Create an abstract method calculateDriveCost() which takes a km covered as double and returns the cost in rupees as double. (rounded to 0 decimal places)
   Hint: Use Overriding.

The formula for computing it as follows:

Rule	Cost (Rs)
Hatchback without automatic gear	10
Hatchback with automatic gear	12
Sedan	15
Sedan with bootspace > 600	15 and 20% additional cost
Utility	18

Sample I/O 1:

id
1
name
i20
type
sedan
distance
20
abs enabled
false
boot space
350
Cost is Rs 300

Sample I/O 2:

id
2
name
Verna
type
hatchback
distance
10
power windows
true
automatic
false

Cost is Rs 100

Sample I/O 3:

id
3
name
Mahindra SUV
type
utility
distance
10
rear cooling vents
false
Cost is Rs 180