rockall tech

Programming Quiz

Instructions

Please solve the problem below in Java, Python or Ruby. (If you want to use another language, please discuss with us in advance). Submit **working** and **readable** code, **with unit tests**. Comments need only be added where they contribute to the understanding of the design.

A readme.txt should be provided with instructions on how to build the project, including compiler / runtime versions etc. as needed.

The assignment is to model the functionality of a parking garage with an automated valet system:

- Each vehicle can be uniquely identified
- A vehicle can be Small, Medium or Large
- A parking garage has one or more parking levels
- Each parking level has between 1 and 100 spaces
- Each space is either Small, Medium or Large
- Each parking space can be uniquely identified
- A vehicle can park in a space of the same size or larger e.g. a Medium vehicle can park in a Medium or Large space.

Please implement an API with the following methods, that supports the behaviour described above:

- *create* a garage with levels and spaces
- *park* a vehicle in the garage
- *unpark* a vehicle from the garage, given the unique vehicle identifier
- *locate* a vehicle in the garage, given the unique vehicle identifier, by returning the identify of its parking space
- *dump* the state of the entire garage to standard out

Follow these implementation guidelines:
- use appropriate techniques to handle error conditions
- each parking space is high value, and it is important to maximize the chance that a vehicle can be successfully parked
- the cars are parked by automated valets, and can be moved from one space to another if desired
- think about edge cases
- provide a comprehensive test suite that validates the functionality
- you should make no assumptions about arrival and departure patterns of the vehicles