**Functional requirements**

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| --- | --- |
| **Name** | **R. #1** Create client |
| **Summary** | Allow the user to create a client |
| **Input** | |
| First name, last name, ID, phone number, email. | |
| **Output** | |
| The client has been created with their information. | |

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| **Name** | **R. #3** Add interest |
| **Summary** | Allow the user to a vehicle interest for a client |
| **Input** | |
| Vehicle the client’s interested in. | |
| **Output** | |
| Vehicle added to the client’s interest list. | |

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| **Name** | **R. #4** Create vehicle |
| **Summary** | Allow the user to create a vehicle |
| **Input** | |
| Sale price, base price, brand, model, cc, mileage, new or used, license plate (if used), SOAT and techno-mechanical revision. (the rest depend on the vehicle’s type), discount. | |
| **Output** | |
| Vehicle created. | |

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| **Name** | **R. #5** Document creation |
| **Summary** | Generates a random document that can be assigned to a vehicle |
| **Input** | |
| None. | |
| **Output** | |
| Randomly generated document. | |

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| **Name** | **R. #6** Display client |
| **Summary** | Displays a client’s info and their interests |
| **Input** | |
| None. | |
| **Output** | |
| Randomly generated document. | |

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| **Name** | **R. #7** Sell vehicle |
| **Summary** | A vehicle’s ownership is assigned to a client |
| **Input** | |
| Car being selled, receiving client. | |
| **Output** | |
| The vehicle is assigned to a client as owned. Total earnings and number of sales are updated. | |

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| **Name** | **R. #8** Catalog |
| **Summary** | Displays vehicles from a category selected by the user |
| **Input** | |
| Vehicle type, <new used, or both> | |
| **Output** | |
| The vehicles’ information is displayed, if any. | |

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| **Name** | **R. #9** Display parking lot |
| **Summary** | Displays the information of vehicles on the parking lot. |
| **Input** | |
| Year. | |
| **Output** | |
| Displays the information of the vehicles in the range selected. If the parking lot is full, the user will be informed. | |

**Non-functional requirements**

* There are 10 salesmen.
* Every saleman can be in charge up to 5 clients at a time.
* Every client can be interested in several vehicles at a time.
* Document codes are saved in an array, which will be decodified depending on the vehicle’s type:
  + L traversal for SOAT
  + Z traversal for Techno-mechanical revision
* There are several vehicle types with additional characteristics:
  + Automobile: type (sedan or truck), number of doors, polarized or not.
    - Gas car: Tank capacity, gas consumption (in gallons), and gas type (extra, regular or diesel)
    - Electric car: charger type (fast or normal), battery life (in kilometers)
    - Hybrid car: Has every characteristic from gas and electric types.
  + Motorcycle: type (standard, sports, scooter, cross), tank capacity (in gallons), gas consumption.
* Consumption is calculated automatically:
  + Gasoline consumption:
    - Gas car: tank capacity \* (cc / 100)
    - Hybrid car: tank capacity \* (cc / 110)
    - Motorcycle: tank capacity \* (cc / 90)
  + Battery consumption:
    - Electric car:
      * Fast charge: (battery life + 10) \* (cc / 100)
      * Normal charge: (battery life + 5) \* (cc / 100)
    - Hybrid car:
      * Fast charge: battery life \* (cc / 100)
      * Normal charge: (battery life + 5) \* (cc / 100)
* Sale price is calculated automatically:
  + If the documents are expired (no document for current year), $500.000 are added to the base price.
  + If the vehicle’s used, there’s a 10% discount to its price.
  + Electric cars cost 20% more than their base price.
  + Hybrid cars cost 15% more than their base price.
  + Gas cars are unaffected.
  + Motorcycles cost 4% more than their base price.
  + The dealership can add an arbitrary discount.
* Used, unsold cars are stored in a 10x5 parking lot. Each row contains models from:
  + 2015
  + 2014
  + 2013
  + 2012
  + 2011 or prior