Naming convention of unit test functions: The test functions names begin with the action that is being tested followed by underscore, followed by arguments that is being used, followed by underscore followed by expected result.

The following table shows what classes are already tested, followed by short overview of functionality tested per class, for details click on the class name.

|  |  |  |
| --- | --- | --- |
| Namespace | Class | Tested |
| Domain.Models | [Adress](#Domain_Models_Adress) | Yes |
| Domain.Models | [Car](#Domain_Models_Car) | Yes |
| Domain.Models | [FuelCard](#Domain_Models_FuelCard) | Yes |
| Domain.Models | [Person](#Domain_Models_Person) | Yes |

**Class:** Domain.Models.Adress

* Construction with valid values
* Exception is thrown on construction and assignment of invalid values on:
  + Street
  + StreetNumber
  + City
  + Postalcode
* Validation function: IsValidPostalCode

**Class:** Domain.Models.Car

* Construction with valid values
* Exception is thrown on construction and assignment of invalid values on:
  + ChassisNumber
  + LicensePlate
  + Brand
  + Model
* Validation function: IsValidLicensePlate
* Validation function: IsValidChassisNumber

**Class:** Domain.Models.FuelCard

* Construction with valid values
* Exception is thrown on construction and assignment of invalid values on:
  + CardNumber
  + ExpirationDate
  + PinCode
* Validation function: IsValidExpirationDate

**Class:** Domain.Models.Person

* Construction with valid values
* Exception is thrown on construction and assignment of invalid values on:
  + FirstName
  + LastName
  + DateOfBirth
  + NationalRegistrationNumber
* Validation function: IsValidNationalRegistrationNumber

Adress Model Class Tests

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| --- | --- |
| Test Case | Construction of Adress class with valid values |
| Expected | Should not throw any exception and should reflect the values that was constructed with. |
| Function | Construct\_CorrectInformation\_ShouldConstruct |

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| Test Case | Construction of Adress class with Empty City Argument |
| Expected | Throws ArgumentNullException |
| Function | Construct\_EmptyCity\_ThrowsArgumentNullException |

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| Test Case | Construction of Adress class with InvalidPostalCode Argument |
| Expected | Throws InvalidPostalCodeException |
| Function | Construct\_InvalidPostalCode\_ThrowsInvalidPostalCodeException |

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| Test Case | Construction of Adress class with Empty Street Argument |
| Expected | Throws ArgumentNullException |
| Function | Construct\_EmptyStreet\_ThrowsArgumentNullException |

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| --- | --- |
| Test Case | Assignment of empty street to constructed Adress class |
| Expected | Throw ArgumentNullException |
| Function | Assignment\_EmptyStreet\_ThrowsArgumentNullException |

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| --- | --- |
| Test Case | Assignment of empty City to constructed Adress class |
| Expected | Throw ArgumentNullException |
| Function | Assignment\_EmptyCity\_ThrowsArgumentNullException |

|  |  |
| --- | --- |
| Test Case | Assignment of empty City to constructed Adress class |
| Expected | Throw ArgumentNullException |
| Function | Assignment\_InvalidPostalCode\_ThrowsInvalidPostalCodeException |

|  |  |
| --- | --- |
| Test Case | Validation of valid Postal codes |
| Expected | True |
| Function | Validate\_ValidPostalCode\_ReturnsTrue |

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| --- | --- |
| Test Case | Validation of invalid Postal Code |
| Expected | False |
| Function | Validate\_InvalidPostalCode\_ReturnsFalse |

Car Model Class Tests

|  |  |
| --- | --- |
| Test Case | Construction of Car class with valid arguments |
| Expected | No exceptions should throw and values should reflect with constructed arguments |
| Function | Construct\_CorrectInformation\_ShouldConstruct |

|  |  |
| --- | --- |
| Test Case | Construction of Car class with invalid chassis number |
| Expected | Throws InvalidChassisNumberException |
| Function | Construct\_InvalidChassisNumber\_ThrowsInvalidChassisNumberException |

|  |  |
| --- | --- |
| Test Case | Construction of Car class with invalid license plate |
| Expected | Throws InvalidLicensePlateException |
| Function | Construct\_InvalidLicencePlate\_ThrowsInvalidLicensePlateException |

|  |  |
| --- | --- |
| Test Case | Construction of Car class with empty car brand |
| Expected | Throws ArgumentNullException |
| Function | Construct\_EmptyBrand\_ThrowsArgumentNullException |

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| --- | --- |
| Test Case | Construction of Car class with empty car model |
| Expected | Throws ArgumentNullException |
| Function | Construct\_EmptyModel\_ThrowsArgumentNullException |

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| --- | --- |
| Test Case | Assignment of invalid chassis number to constructed Car class |
| Expected | Throws InvalidChassisNumberException |
| Function | Assignment\_InvalidChassisNumber\_ThrowsInvalidChassisNumberException |

|  |  |
| --- | --- |
| Test Case | Assignment of invalid license plate to constructed Car class |
| Expected | Throws InvalidLicensePlateException |
| Function | Assignment\_InvalidLicencePlate\_ThrowsInvalidLicensePlateException |

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| --- | --- |
| Test Case | Assignment of empty car brand to constructed Car class |
| Expected | Throws ArgumentNullException |
| Function | Assignment\_EmptyBrand\_ThrowsArgumentNullException |

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| --- | --- |
| Test Case | Assignment of empty car model to constructed Car class |
| Expected | Throws ArgumentNullException |
| Function | Assignment\_EmptyModel\_ThrowsArgumentNullException |

|  |  |
| --- | --- |
| Test Case | Validation of IsValidLicensePlate function |
| Expected | True |
| Function | Validate\_ValidPlate\_ReturnsTrue |

|  |  |
| --- | --- |
| Test Case | Validation of IsValidLicensePlate function |
| Expected | False |
| Function | Validate\_InvalidPlate\_ReturnsFalse |

|  |  |
| --- | --- |
| Test Case | Validation of IsValidChassisNumber function |
| Expected | True |
| Function | Validate\_ValidChassisNumber\_ReturnsTrue |

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| --- | --- |
| Test Case | Validation of IsValidChassisNumber function |
| Expected | False |
| Function | Validate\_InvalidChassisNumber\_ReturnsFalse |

FuelCard Model Class Tests

|  |  |
| --- | --- |
| Test Case | Construction of FuelCard class with valid arguments |
| Expected | No exceptions should throw and values should reflect with constructed arguments |
| Function | Construct\_CorrectInformation\_ShouldConstruct |

|  |  |
| --- | --- |
| Test Case | Construction of FuelCard class with Invalid Expiration Date |
| Expected | Throws InvalidFuelCardExpirationDateException |
| Function | Construct\_InvalidExpirationDate\_ThrowsInvalidFuelCardExpirationDateException |

|  |  |
| --- | --- |
| Test Case | Construction of FuelCard class with Invalid Card Number |
| Expected | Throws ArgumentOutOfRangeException |
| Function | Construct\_InvalidCardNumber\_ThrowsArgumentOutOfRangeException |

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| --- | --- |
| Test Case | Construction of FuelCard class with zero PinCode |
| Expected | Throws ArgumentOutOfRangeExceptio |
| Function | Construct\_InvalidPinCode\_ThrowsArgumentOutOfRangeException |

|  |  |
| --- | --- |
| Test Case | Assignment of Invalid Expiration Date to constructed FuelCard class |
| Expected | Throws InvalidFuelCardExpirationDateException |
| Function | Assignment\_InvalidExpirationDate\_ThrowsInvalidFuelCardExpirationDateException |

|  |  |
| --- | --- |
| Test Case | Assignment of Invalid Card Number to constructed FuelCard class |
| Expected | Throws ArgumentOutOfRangeException |
| Function | Assignment\_InvalidCardNumber\_ThrowsArgumentOutOfRangeException |

|  |  |
| --- | --- |
| Test Case | Assignment of zero Pin Code to constructed FuelCard class |
| Expected | Throws ArgumentOutOfRangeException |
| Function | Assignment\_InvalidPinCode\_ThrowsArgumentOutOfRangeException |

|  |  |
| --- | --- |
| Test Case | Test of IsValidExpirationDate function |
| Expected | True |
| Function | Validate\_ValidExpirationDate\_ReturnsTrue |

|  |  |
| --- | --- |
| Test Case | Test of IsValidExpirationDate function |
| Expected | False |
| Function | Validate\_InvalidExpirationDate\_ReturnsFalse |

Person Model Class Tests

|  |  |
| --- | --- |
| Test Case | Construction of Person class with valid arguments |
| Expected | No exceptions should throw and values should reflect with constructed arguments |
| Function | Construct\_CorrectInformation\_ShouldConstruct |

|  |  |
| --- | --- |
| Test Case | Construction of Person class with Empty First Name |
| Expected | Throws ArgumentNullException |
| Function | Construct\_EmptyFirstName\_ThrowsArgumentNullException |

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| --- | --- |
| Test Case | Construction of Person class with Empty Last Name |
| Expected | Throws ArgumentNullException |
| Function | Construct\_EmptyLastName\_ThrowsArgumentNullException |

|  |  |
| --- | --- |
| Test Case | Construction of Person class with Invalid Date Of Birth |
| Expected | Throws InvalidDateOfBirthException |
| Function | Construct\_InvalidDateOfBirth\_ThrowsInvalidDateOfBirthException |

|  |  |
| --- | --- |
| Test Case | Construction of Person class with Invalid National Registration Number |
| Expected | Throws InvalidDateOfBirthException |
| Function | Construct\_InvalidNationalRegistrationNumber\_ThrowsInvalidDateOfBirthException |

|  |  |
| --- | --- |
| Test Case | Assignment of Empty First Name to constructed Person class |
| Expected | Throws ArgumentNullException |
| Function | Assignment\_EmptyFirstName\_ThrowsArgumentNullException |

|  |  |
| --- | --- |
| Test Case | Assignment of Empty Last Name to constructed Person class |
| Expected | Throws ArgumentNullException |
| Function | Assignment\_EmptyLastName\_ThrowsArgumentNullException |

|  |  |
| --- | --- |
| Test Case | Assignment of Invalid Date of Birt to constructed Person class |
| Expected | Throws InvalidDateOfBirthException |
| Function | Assignment\_InvalidDateOfBirt\_ThrowsInvalidDateOfBirthException |

|  |  |
| --- | --- |
| Test Case | Assignment of Invalid National Registration Number to constructed Person class |
| Expected | Throws InvalidNationRegistrationNumberException |
| Function | Assignment\_InvalidNationalRegistrationNumber\_ThrowsInvalidNationRegistrationNumberException |

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| --- | --- |
| Test Case | Test of IsValidNationalRegistrationNumber function |
| Expected | True |
| Function | Validate\_ValidNationalNumber\_ReturndTrue |

|  |  |
| --- | --- |
| Test Case | Test of IsValidNationalRegistrationNumber function |
| Expected | False |
| Function | Validate\_InvalidNationNumber\_ReturndFalse |