



# Trabajo Práctico Cuatrimestral: Especificación

Materia:

- Algoritmos y Estructuras de Datos

Profesores:

- Ignacio Cassol
- Alicia Gioia

Alumnos :

- Lucas Manzanelli
- Santiago Hazaña

## Exercise 2: Shop

### a. ADT:Accessory

*Description: Extra product for sale. It's has a distinction with camera.*

#### i. Constructors:

- ***createAccessory: String:name X String: code X double: retailPrice X String: type → Accessory***
  - Precondition: -
  - Postcondition: Accessory initialized.

#### ii. Destructors:

- ***freeAccessory: Accessory → -***
  - *Free Accessory where it's allocated in the memory.*
  - Precondition: Accessory initialize.
  - Postcondition: Accessory destroyed.

### b. ADT: Administrator

*Description: In charge to call provider in case there aren't enough stock.*

#### i. Constructors:

- ***createAdministrator: String: name X int: dni X String : address X int: phone X String location X String province X country X String postCode → Administrator***
  - Precondition: -
  - Postcondition: Administrator initialized.

#### ii. Modifiers:

- ***callProvider: Provider X String: code X int:quantity → StaticList***
  - *Call provider for new list of products with certain quantity.*
  - Precondition: Provider must be initialized.
  - Postcondition: StaticList initialized.

#### iii. Destructors:

- ***freeAdministrator: Administrator → -***
  - *Free Administrator where it's allocated in the memory.*
  - Precondition: Administrator initialize.
  - Postcondition: Administrator destroyed.

### c. ADT:

*Description: Another product in stock.*

#### i. Constructors:

- ***createCamera:*** →String name X String code X double  
retailPrice X int megapixels X int LCDScreen X int opticalZoom  
X String type
  - Precondition: -
  - Postcondition: Camera initialized

## ii. Analyzers:

- ***showCamere: Camera*** → -
  - *Show camera's information.*
  - Precondition: Camera must be initialized.
  - Postcondition: -

## iii. Destructors:

- ***freeCamera: Camera*** → -
  - *Free Camera where it's allocated in the memory.*
  - Precondition: *Camera* initialize.
  - Postcondition: *Camera* destroyed.

## d. ADT:

*Description: In charge to regenerate missing stock*

### i. Constructors:

- ***createManufacturer: String name X Camera cameraSample  
X Accessory accessorySample*** → Camera
  - Precondition: -
  - Postcondition: Camera initialized.

### ii. Modifiers:

- ***makeProducts: StaticList: products X String: productCode  
X int: quantity*** → -
  - *Generates quantity new products by code selection.*
  - Precondition: Product could be empty but must be initialized.
  - Postcondition: If code was found, regeneration of products.

### iii. Destructors:

- ***freeManufacturer : Manufacturer*** → -
  - *Free Manufacturer where it's allocated in the memory.*
  - Precondition: *Manufacturer* initialize.
  - Postcondition: *Manufacturer* destroyed.

## e. ADT: PersonShop

*Description: Representative class for UserRegister, Provider and Administrator*

**i. Constructors:**

- ***createPersonShop: String: name X int: dni X String : address X int: phone X String location X String province X country X String postCode → PersonShop***
  - Precondition: -
  - Postcondition: PersonShop initialized.

**ii. Destructors:**

- ***freePersonShop : PersonShop → -***
  - *Free PersonShop where it's allocated in the memory.*
  - Precondition: *PersonShop* initialize.
  - Postcondition: *PersonShop* destroyed.

**f. ADT: Product**

*Description: Represent Camera and Accessories.*

**i. Constructors:**

- ***createProduct: String:name X String: code X double: retailPrice X String: type → Product***
  - Precondition: -
  - Postcondition: Product initialized.

**ii. Analyzers:**

- ***showInformation: Product → -***
  - *Show all product's information.*
  - Precondition: Product initialized.
  - Postcondition: -

**iii. Destructors:**

- ***freeProduct : Product → -***
  - *Free Product where it's allocated in the memory.*
  - Precondition: *Product* initialize.
  - Postcondition: *Product* destroyed.

**g. ADT: Provider**

*Description: In charge to contact with Manufacturer in case of enough products.*

**i. Constructors:**

- ***createProvider: String: name X int: dni X String : address X int: phone X String location X String province X country X String postCode → Provider***
  - Precondition: Unique DNI.
  - Postcondition: Provider initialized.

**ii. Modifiers:**

- **contactManufacturer: Provider X String: code X int: quantity → StaticList**
  - Contact manufacturers to regenerate product with that code and return it in a list.
  - Precondition: Manufacturer initialized.
  - Postcondition: returns StaticList

### iii. Destructors:

- **freeProvider: Provider → -**
  - Free Provider where it's allocated in the memory.
  - Precondition: Provider initialize.
  - Postcondition: Provider destroyed.

## h. ADT: RegisterUser

*Description: Similar to a client, with same information of PersonShop*

### i. Constructors:

- **createRegisterUser: String: name X int: dni X String : address X int: phone X String location X String province X country X String postCode → RegisterUser**
  - Precondition: Unique DNI.
  - Postcondition: RegisterUser initialized.

### ii. Modifiers:

- **buyProduct: RegisterUser X String: code X StaticList: accessories X StaticList cameras → -**
  - //comentario
  - Precondition: RegisterUser, and both list must be initialized
  - Postcondition: registerUser's amount decrease and product added to sales.
- **increaseWallet: RegisterUser X double: amount → -**
  - Precondition:-
  - Postcondition: wallet increase.

### iii. Destructors:

- **freeRegisterUser: RegisterUser → -**
  - Free RegisterUser where it's allocated in the memory.
  - Precondition: RegisterUser initialize.
  - Postcondition: RegisterUser destroyed.

## i. ADT: Sale

*Description: Sale has a list of product bought in a SaleLine, and a day information.*

### i. Constructors:

- **createSale: → Sale**
  - Precondition:-

- Postcondition:-

**ii. Destructor:**

- **freeSale: Sale → -**
  - *Free Sale where it's allocated in the memory.*
  - Precondition: *Sale initialize.*
  - Postcondition: *Sale destroyed.*

**j. ADT:SaleLine**

*Description: Products bought had been deposited here.*

**i. Constructors:**

- **createSaleLine: - → -**
  - Precondition: -
  - Postcondition:-

**ii. Analyzers:**

- **showProducts: SaleLine → -**
  - *Show all the products bought.*
  - Precondition: -
  - Postcondition: -

**iii. Destructor:**

- **freeSaleLine: SaleLine → -**
  - *Free SaleLine where it's allocated in the memory.*
  - Precondition: *SaleLine initialize*
  - Postcondition: *SaleLine destroyed.*