



Trabajo Práctico Cuatrimestral: Especificación

Materia:

- Algoritmos y Estructuras de Datos

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Exercise 2: Shop

a. ADT:HouseElectro

Description: Product for the house

i. Constructors:

- ***newElectro: int: id X String: name X String: model X double: price* → **HouseElectro****
 - Precondition: -
 - Postcondition: HouseElectro initialized.

ii. Modifiers:

- ***changeprice: HouseElectro: electro X double: price***
 - Description: changes the price from the given item.
 - Precondition: HouseElectro initialized.
 - Postcondition: priced change.

iii. Destructors:

- ***freeElectro: HouseElectro* → -**
 - *Frees HouseElectro allocated memory.*
 - Precondition: *HouseElectro* initialize.
 - Postcondition: *HouseElectro* destroyed.

b. ADT: Provider

Description: provider of the house electro

i. Constructors:

- ***newProvider: String: name X String: description X String : direction X String: city X int: phone X String web* → **Provider****
 - Precondition: -
 - Postcondition: provider initialized.

ii. Modifiers:

- ***sellHouseElectro: StaticList: makerProducts X int: id* → **HouseElectro****
 - *Sells an house electro from the maker.*
 - Precondition: Provider must be initialized.
 - Postcondition: house electro to sell.

iii. Destructors:

- ***freeProvider: Provider* → -**
 - *Frees Provider allocated memory.*
 - Precondition: *Provider* initialize.
 - Postcondition: *Provider* destroyed.

c. ADT: Maker

Description: Product maker

i. Constructors:

- ***newMaker: String name X String description X String: direction X String city X int phone X String: web → Maker***
 - Precondition: -
 - Postcondition: Maker initialized

ii. Modifiers:

- ***makeHouseElectro: int: id X String name X String model → HouseElectro***
 - *creates a new house electro.*
 - Precondition: Maker must be initialized.
 - Postcondition: House electro created

iii. Destructors:

- ***freeMaker: Maker → -***
 - *Frees Maker allocated memory.*
 - Precondition: *Maker* initialize.
 - Postcondition: *Maker* destroyed.

d. ADT: Label

Description: label for a product

i. Constructors:

- ***newLabel: int: id X String name → Label***
 - Precondition: -
 - Postcondition: Label initialized.

ii. Destructors:

- ***freeLabel : Label → -***
 - *Frees Label allocated memory.*
 - Precondition: *Label* initialize.
 - Postcondition: *Label* destroyed.

e. ADT: Catalog

Description: Represents a catalog, with products, prices and discount.

i. Constructors:

- ***newCatalog: int: id X String: name X int: discount → Catalog***
 - Precondition: -
 - Postcondition: Catalog initialized.

ii. Analyzers:

- ***seeCatalog: StaticList catalogList X Catalog → -***
 - Description: shows the catalog
 - Precondition: Catalog initializes
 - Postcondition: catalog shown

- **searchForItem: Catalog X StaticList catalogList X int id → HouseElectro**
 - Description: searches for the given item id.
 - Precondition: Catalog initialized.
 - Postcondition: House electro searched for.

iii. Destructors:

- **freeCatalog : Catalog → -**
 - Frees Catalog allocated memory.
 - Precondition: Catalog initialize.
 - Postcondition: Catalog destroyed.

f. ADT: Bill

Description: represents a bill, with the items, quantities and total to pay

i. Constructors:

- **newBill: int: id → Bill**
 - Precondition: -
 - Postcondition: Bill initialized.

ii. Modifiers:

- **addItemToBill: Bill X String: item X int: quantity X double: subTotal → -**
 - Description: adds a given item to the bill lines
 - Precondition: Bill initialized.
 - Postcondition: item added to bill.

iii. Destructors:

- **freeBill: Bill → -**
 - Description: Frees Bill allocated memory.
 - Precondition: Bill initialize.
 - Postcondition: Bill destroyed.

g. ADT: BillLine

Description: Represents a line in the bill with an item, quantity and subtotal.

i. Constructors:

- **newBillLine: String: item X int: quantity X double: price → BillLine**
 - Precondition: -
 - Postcondition: BillLine initialized.

ii. Destructors:

- **freeBillLine: BillLine → -**
 - Description: Frees BillLine allocated memory.
 - Precondition: BillLine initialized.
 - Postcondition: BillLine destroyed.

h. ADT: Bag

Description: represents a shopping bag for the house electro items

i. Constructors:

- **newBag: int: id → Bag**
 - Precondition: -
 - Postcondition: Bag initialized

ii. Modifiers:

- **addItem: Bag X HouseElectro X int: quantity → -**
 - Description: adds a given item to the bag.
 - Precondition: Bag and item initialized.
 - Postcondition: item added to the bag
- **removeItem: Bag X String item → -**
 - Description: removes the given item from the bag
 - Precondition: bag initialized
 - Postcondition: item removed from the bag
- **generateBill: Bag X int: discount → Bill**
 - Description: generates a new bill with details about the items and price.
 - Precondition: Bag initialized.
 - Postcondition: bill generated.

iii. Analyzers:

- **seeBag: StaticList bagList X Bag → -**
 - Description: shows the bag item with quantity and price
 - Precondition: Bag initialized
 - Postcondition: Bag items shown

iv. Destroyers:

- **freeBag: Bag → -**
 - Description: Frees the Bag allocated memory
 - Precondition: Bag initialized.
 - Postcondition: Bag destroyed.

i. ADT: BagLine

Description: Represents a line in the bag with an item, quantity and subtotal.

i. Constructors:

- **newBagLine: String: item X int: quantity X double: price → BagLine**
 - Precondition: -
 - Postcondition: BagLine initialized.

ii. Destructors:

- **freeBagLine: BagLine → -**
 - Description: Frees BagLine allocated memory.
 - Precondition: BagLine initialized.
 - Postcondition: BagLine destroyed.