

King Saud University

Collage of Computer and Information Sciences

Lab 2

Product
- Name: String - Price: double - Indoor: boolean - Quantity: int
+ Product(name: String, price: double, q:int, indoor:boolean) + Setters/getters + Read(): void + Display(): void

Store
- Items: Product[] - nbProduct: int
+ Store(size: int) + Search(pName: String): int + AddProduct(Product P): boolean + DisplayAll(): void + CountIndoor(): int + getIndoorProducts(maxPrice: double):Product[] + splitProducts(indoorProducts: Product[], others: Product[])

Item

- **Name:** (String)

An object that holds product name. E.g. Toy, ball.

- **Price:** (double)

An object that holds the product's price.

- **Indoor:** (boolean)

An object that indicates if the product is designed to be used inside the home or not.

- **Quantity:** (int)

An object that holds the quantity of a product.

+ **Product(name: string, price: double, q:int, indoor: boolean)** *hint, use "this".*

Copy constructor.

Setters and Getters: To set and get the value of each attribute (Name, Price, Indoor, Quantity).

+ **Read ():**

This method asks the user to input the value for each of the attributes above.

+ **Display ():**

Show the product info in the following format:
Name:Ball–Price:5.5 SR–Indoor:Yes– Quantity:4

Store

- **Items:** (Product [])

Array to hold available products in the store.

- **nbProduct:** (int)

Keep track of number of products in the store.

+ **Store(size: int)** Constructor.

+ **Search(pName: String): int**

This method will return the index of the product if it exists, -1 otherwise.

+ **AddProduct(Product P): boolean**

Adds a Product to the store. It will return true if successfully added, false otherwise.

+ **DisplayAll(): void**

Prints the attributes of all the products in the store.

+ **CountIndoor(): int**

Returns the number of items that can be used indoor.

+ **getIndoorProducts(maxPrice: double): Product[]**

This method returns the indoor Products having a price less than *maxPrice*.

+ **splitProducts(indoorProducts: Product[], others: Product[]): void**

This method inserts in the array *indoorProducts* the indoor products of the store. The other products are inserted in the array *others*.

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Once you are done writing the classes, you need to test your work by implementing the class Lab2 with main method. Your store can hold up to 10 Products and shows the following menu:

IMPORTANT: Your menu should be the same as this.

Please choose one of the following options:

- 1 - Add a Product.
- 2 - Display all the Products.
- 3 - How many Indoor Products?
- 4 - Show all Indoor Products.
- 5 – Split Products (Show the result afterwards).
- 9 - Exit

Helpful tips and hints:

- To auto generate Getters and setters go to
Source -> Generate Getter and Setter
Or just type set and press Ctrl + Space for the variable you just added.
- To invoke the Auto Formatter for your code : Ctrl + Shift + F
- For auto complete: Ctrl + space
- To Undo: Ctrl + z
To Copy: Ctrl + c
To Paste: Ctrl + v
To Save: Ctrl + s
- - private, + public, # protected.