Documentation for the `product.rkt` teachpack

The teachpack `product.rkt` contains structures used for manipulating product information. Information on how to install teachpacks can be found on the course website.

1   Structure and data definitions

(*define-struct single-product* (*name origin*))
;; A Single-Product is a (make-single-product Str Str)
;; where origin is a string denoting the country of origin.

(*define-struct sales-product* (*ID prod*))
;; A Sales-Product is a (make-sales-product Int (anyof Single-Product Product-List))

;; A Product-List is a (listof Sales-Product)

2   Built-in data

To save you time, the teachpack includes the definition of many constants. You are welcome to create more definitions along with the functions that you create for labs and assignments.

;; Examples of Single-Product
(**define** *lipbalm* (*make-single-product* `"lipbalm"` `"Denmark"`))
(**define** *lipgloss* (*make-single-product* `"lipgloss"` `"Cuba"`))
(**define** *handlotion* (*make-single-product* `"hand lotion"` `"Kenya"`))
(**define** *shampoo* (*make-single-product* `"shampoo"` `"Canada"`))
(**define** *conditioner* (*make-single-product* `"conditioner"` `"New Zealand"`))
(**define** *soap* (*make-single-product* `"soap"` `"Canada"`))
(**define** *facialscrub* (*make-single-product* `"facialscrub"` `"Cuba"`))

;; Examples of Sales-Product, where each prod is a Single-Product.
(**define** *lipbalmpack* (*make-sales-product* 123 *lipbalm*))
(**define** *lipglosspack* (*make-sales-product* 103 *lipgloss*))
(**define** *handlotionpack* (*make-sales-product* 192 *handlotion*))
(**define** *shampoopack* (*make-sales-product* 156 *shampoo*))
(**define** *conditionerpack* (*make-sales-product* 183 *conditioner*))
(**define** *soappack* (*make-sales-product* 134 *soap*))
(**define** *facialscrubpack* (*make-sales-product* 122 *facialscrub*))

;; Examples of Sales-Product, where some elements of the Product-List
;;   are in turn Sales-Products containing Product-Lists
(**define** *lipkit* (*make-sales-product* 342 (*list lipbalmpack lipglosspack*)))
(**define** *hairkit* (*make-sales-product* 356 (*list shampoopack conditionerpack*)))

(**define** *facekit* (*make-sales-product* 344 (*list soappack facialscrubpack*)))
(**define** *cleankit* (*make-sales-product* 399
                                    (*list soappack shampoopack facialscrubpack*)))

;; Examples of Sales-Product, some elements of prod are lists
(**define** *promokit* (*make-sales-product* 453 (*list lipkit soappack hairkit*)))
(**define** *allkit* (*make-sales-product* 567
                                    (*list lipkit hairkit facekit cleankit*)))
(**define** *bargainkit* (*make-sales-product* 684 (*list allkit promokit*
                                        handlotionpack lipkit)))