CMPE 100 - Introduction to Computing

Project 02
Deadline: 15.12.2019 23.59

RULES

Submission

- Submit your solution as [name surname project02].rkt.
- Solution without comments (design recipe) will not get full points.
- Late submissions will not be accepted. Submission system will be closed after deadline.
- Submissions via e-mail will not be accepted.
- Plagiarism is strictly prohibited, you will be evaluated as if you cheat during the written exams. Involved students will get zero.

Presentation

- Projects without presentation will get zero.
- Students have to make their presentations next week during lab sessions.
- Excuses other than medical reports or emergency situations are not accepted.
- Every student has to attend his/her own subsection

QUESTION

1. Define a structure named Market. This structure must have two fields: *marketID*, *brandsList*.
2. Define a structure named Brand. This structure must have three fields: *brandID*, *brandName* and *listOfItems*.
3. Define a structure named Item. This structure must have five fields: *itemID*, *itemName*, *itemType*, *itemPrice* and *itemStock*. Item type is restricted with three types: 'beverage', 'snack', 'pasta'. Item stock refers for the number of the item that the market has in stock currently.

4. Define a structure named Basket. This structure must have one field: *listOfItems*. Initialize a basket with an empty list of items.

5. Define at least 2 different markets. Each market has at least 3 different brands. Each brand has at least 2 different items.

6. Implement the following functions:

   - A function that takes three parameters: market, brand and discount. This function should make discount for all items in the given brand in the given market. For example, %10 discount for 'Ulker' items in 'Migros' market.
   - A function that takes three parameters: market, type and discount. This function should make a discount in price for all items in given type in the given market. For example, %10 discount for 'beverage' type of items in 'Migros' market.
   - A function that takes four parameters: market, basket, item and amount. This function should add given amount of item to basket.
   - A function that calculates the total price of given basket. Write this function by using two types of list functions: *abstraction* and *foldr*. Be careful that you will have **two** versions of this function at the end.

Note: Ensure that your programs are fully documented, using comments.