İstanbul Bilgi University

Department of Computer Engineering

Fall 2020-2021

CMPE 100: Introduction to Computing

Worksheet10

- (25 points) Design a function named **sumEvens** that takes a list of number and sum the even numbers in the list.

  ;Contract: sumEvens : LON → Number
  (check-expect (sumEvens (list 1 2 3 4 5 6)) 12))
  (check-expect (sumEvens (list 1 3 5)) 0))
  (check-expect (sumEvens (list 12 16 100)) 128))

- (25 points) Design a function named **evenList** that takes a list of number and construct the even list.

  ;Contract: evenList : LON → LON
  (check-expect (evenList (list 1 2 3 4 5 6)) (list 2 4 6)))
  (check-expect (evenList (list 1 3 5)) '()))
  (check-expect (evenList (list 12 16 100)) (list 12 16 100)))

- (50 points) Answer the following questions according to TOYS structure:

  (define-struct TOYS (type quan price))
  ;TOYS is a structure like
  ;(make-TOYS string number number)

  ;type is type of toy and can be one of:
  ;plastic
  ;metal
  ;coton

  ;quan is the quantity of toys
  ;price is price of toys

  - Design a function named **numOfPlastic** that takes list of toys and find the number plastic toys.
    ;Contract: numOfPlastic: LOTOYS → number
  - Design a function named **priceOfPlastic** that takes list of toys and find the total price of plastic toys.
    ;Contract: priceOfPlastic: LOTOYS → number (total price)
  - Design a function named **priceListOfPlastic** that takes list of toys and produce a list of prices of plastic toys.
    ;Contract: priceOfPlastic: LOTOYS → LOTOYS

Note: Ensure that your programs are fully documented, using comments. Write also contructors, selectors and predicates.