

Istanbul Bilgi University

Department of Computer Engineering

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Fall 2019-2020

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**CMPE 100: Introduction to Computing**

**Worksheet-for Practice**

- (50 points) Answer the following questions according to CDs structure:
  - Your program maintains a music album collection which is a list of CDs where each of CDs is a structure of artist, genre, and price.
  - Do a proper data definition. Now, design and implement for the functions below using **ABSTRACT LIST FUNCTIONS**:
    - produces a music album collection of only those CDs whose genre is g.
    - produces total price value of mac.
    - produces a list containing all the artist names of CDs.
- (25 points) Design **an accumulator style Racket function** named **unionLists** that takes two lists and apply union (set operation).  
(check-expect (unionLists (list 1 2 3) (list 3 5 2 4)) (list 1 3 5 2 4))
- (25 points) Design **an accumulator style Racket function** named **concatNumbers** that takes a list of digits and produce a number which is the concatenation of numbers in list.  
(check-expect (concatNumbers (list 1 2 3)) 123)  
(check-expect (concatNumbers (list 9 0 0 1 7)) 90017)

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