CENG212 Concepts of Programming Languages (Spring 2021 – 2022)

Homework 1

28.03.2022

Due Date: 06.04.2022, 23:59

Q1 (15 points). Write a Scheme procedure that takes a positive integer *n* and calculates the sum of even integers from 1 to *n* (both inclusive).

Q2 (25 points). Write a Scheme procedure that sums all the elements in a given list of numbers.

Q3 (20 points). Write a Scheme procedure that returns the squares of each element in a given list.

- For instance, if the list is (2 5 7) the procedure will return (4 25 49).

Q4 (10 points). Write a Scheme procedure that returns the cubes of each element in a given list.

- For instance, if the list is (2 5 7) the procedure will return (8 125 343).

Q5 (30 points). Write a higher-order procedure that can be used in Q3 and Q4. Do not forget to rewrite the procedures in Q3 and Q4.

You will create a Scheme file per question. For Q1-Q4, after defining the specified procedure, call the procedure. For Q5, call the two rewritten procedures.

Submission Rules

- Submit your homework as a compressed file including five Scheme files through Teams until due date.
- The compressed file name should be **CENG212_HW1_<student_number>** (Omit the angle brackets). A Scheme file name should be **<student_number>_QX (**e.g., 123456_Q3**).**