İstanbul Bilgi University

Department of Computer Engineering

Fall 2022-2023

CMPE 100: Introduction to Computing

Worksheet06

1. (30 points) Design a function named **findMonth** takes a number from user between 1-12 and print the season. If the number is not in that range, report error situations.

   Contract: findMonth : number (month) → String

   $$findMonth(month) = \begin{cases} Invalid & \text{if } month <= 0 \\ Invalid & \text{if } month > 12 \\ spring & \text{if } 3 <= month <= 5 \\ summer & \text{if } 6 <= month <= 8 \\ fall & \text{if } 9 <= month <= 11 \\ winter & \text{otherwise} \end{cases}$$

   >(findMonth 4)
   "spring"

2. (30 points) Design a recursive function named **sumNtoM** takes two numbers named n and m as parameters. The function sum the numbers between n and m, [n,m]. Note: If n is bigger than m, then reverse the parameters.

   Contract: sumNtoM: number number → number

   $$sumNtoM(n,m) = \begin{cases} sumNtoM(m,n) & \text{if } n > m \\ n & \text{if } n = m \\ n + sumNtoM(n+1, m) & \text{if } otherwise \end{cases}$$

   >(sumNtoM 3 5)
   12

   >(sumNtoM 5 1)
   15

3. (40 points) Design a recursive function named **concatString** takes one string and one number (n). The function concatanes the given string n times. Note: Try to formulate first, then write a function.

   Contract: concatString: String number → String

   >(concatString "ali" 3)
   "alialiali"

   >(concatString "hi" 5)
   "hihihihihi"