**Group Activity 14: CS 3060**

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Points: 10

**Task 1**: (2 points) Run the following two snippets of code. Are the output same? Add your reasoning in README file.

*Style 1 : map (\x -> x \* x) [4, 5, 6, 7]* -- map is applying an anonymous (*square*) function on the list

[16,25,36,49]

*Style 2 :*

*squareAll list = map square list where square x = x \* x*

*squareAll [4, 5, 6, 7]*

**[16,25,36,49]**

**Yes, they are the same. Because both are mapping a list squaring the numbers but using two different methods to do so.**

**Task 2**: (4 points) Consider the following Haskell code. Add your answer in README file.

myFunc x = (length x > 2) -- what is the type of myFunc?

Bool

y = filter myFunc ["abc", "de", "f", "gghher"] -- what is the value of y? why?

["abc","gghher"] only returns strings greater than 2.

z = filter myFunc [[6,7,4,5], [0,1,2]] -- what is the value of z? why?

[[6,7,4,5],[0,1,2]] Both lists have more than 2 variables.

Now edit *myFunc* code as follows.

myFunc = \x -> (length x > 2) -- right hand side is an anonymous function

Run the following code again, and check whether the value of y and z remain same as before.

y = filter myFunc ["abc", "de", "f", "gghher"]

z = filter myFunc [[6,7,4,5], [0,1,2]]

Yes, the results stay the same.

**Task 3:** (4 points) Use *map* and *foldl* to implement a function f(x) where

f(x) = 1^x + 3^x + 5^x + … + 9^x

Use the following template for the implementation of f(x)

*mylist = [1, 3 .. 9]*

*foo m list = map(\y -> y^m) list*

*f x = foldl (+) 0 (foo x mylist)*

-- What is the input and output type of function *foo*?

Input: Integer and List

Output: List

-- What is the input and output type of function *f*?

Input: Integer

Output: Integer

Submission: Submit one copy (per group) on Canvas.