

Unit 4 - Week 3: Rewriting, Polymorphism, Higher Order Functions on Lists

Course outline

How to access the portal

Week 1: Introduction

Week 2: Lists, Strings, Tuples

Week 3: Rewriting, Polymorphism, Higher Order Functions on Lists

- Computation as rewriting
- Polymorphism and higher-order functions
- Map and filter
- List comprehension
- Folding through a list
- More list functions: takeWhile, zipWith, zip
- Week 3 Feedback

Quiz : Assignment 3

Week 4: Efficiency, Sorting, Infinite lists, Conditional polymorphism, Using ghci

Week 5: User-defined datatypes, abstract datatypes, modules

Week 6: recursive data types, search trees

Week 7: arrays, IO

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Text Transcripts

1st Nov Programming Test Session-1 (10am-12 noon)

1st Nov Programming Test Session-2 (8pm-10pm)

Assignment 3

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2019-09-18, 23:59 IST.

Instruction

When the answer is a Haskell list, type it as a comma-separated sequence within square brackets, without any intervening space.

1) What is the value of the following expression?

```
drop 20 (filter (>50) [0,3..90])
```

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: String) []

1 point

2) What is the value of the following expression?

```
take 5 (filter (<30) [0,8..100])
```

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: String) [0,8,16,24]

1 point

3) What is the type of the following function?

```
f x y z = y:(x++z)
```

- f :: [a] -> [a] -> [a]
- f :: [a] -> [a] -> [a] -> [a]
- f :: [a] -> a -> [a] -> [a]
- f :: a -> [a] -> [a] -> [a]

No, the answer is incorrect.
Score: 0

Accepted Answers:
f :: [a] -> a -> [a] -> [a]

1 point

1 point

4) What is the value of the following expression?

```
drop 95 (foldl f [] [1..100])
  where f y x = [x]:y
```

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: String) [[5],[4],[3],[2],[1]]

1 point

5) What is the value of the following expression?

```
length (foldr f [0] [0..10])
  where f x y = if (x `mod` 2 == 0)
    then x + head y : y
    else x : y
```

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 18

1 point

6) What is the position of (2,2) in the following infinite list?

```
[(i,k-i) | k <- [0..], i <- [0..k]]
```

Note: Remember that list positions start with 0.

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 12

1 point

7) Where does (2,3) occur in the following infinite list?

```
[(i,k-i) | k <- [0,2..], i <- [0..k]]
```

- Does not occur
- Position 10
- Position 18
- Position 5

No, the answer is incorrect.
Score: 0

Accepted Answers:
Does not occur

1 point

1 point

8) Consider the following definition of the function myRepeat.

```
myRepeat f 0 x = [x]
myRepeat f n x = f (tail (myRepeat f (n-1) x))
```

What is the most general type for the argument f?

- a -> a
- a -> [a]
- [a] -> [a]
- [a] -> a

No, the answer is incorrect.
Score: 0

Accepted Answers:
[a] -> [a]

1 point