

Assignment 14 : Scala 1 Assignment Problems

Problem Statement

Task 1

Given a list of strings - List[String] (“alpha”, “gamma”, “omega”, “zeta”, “beta”)

Sol:

Initial Terminal Execution :

```
[acadgild@localhost ~]$ scala
Welcome to Scala version 2.11.7 (Java HotSpot(TM) Client VM, Java 1.8.0_171).
Type in expressions to have them evaluated.
Type :help for more information.
```

```
scala> val list = List("alpha","gamma","omega","zeta","beta")
list: List[String] = List(alpha, gamma, omega, zeta, beta)
```

1.1. Find count of all strings with length 4.

Sol:

Terminal Execution :

```
scala> list.count(x => x.length == 4)
res0: Int = 2
```

Explanation:

Since there are only 2 strings with length = 4 and that is zeta and beta. Therefore, the result is printing 2.

1.2. Convert the list of string to a list of integers, where each string is mapped to its corresponding length.

Sol:

Terminal Execution :

```
scala> list.map(x => x.length)
res2: List[Int] = List(5, 5, 5, 4, 4)
```

Explanation:

Each item in the list is getting converted into the length of each item in the list.

String	==>	Int (length of each string)
alpha		5
gamma		5
omega		5
zeta		4
beta		4

1.3. Find count of all strings which contain alphabet ‘m’.

Sol:

Terminal Execution :

```
scala> list.count(x => x.contains("m"))
res3: Int = 2
```

Explanation:

The current execution search for character 'm' in each of the string items in the list and will display the count of number of items with m in it.

In the current list only 2 items that is “gamma” and “omega” has “m” in it. Thus, result = 2.

1.4. Find the count of all strings which start with the alphabet 'a'.

Sol:

Terminal Execution :

```
scala> list.count(x => x.startsWith("a"))  
res4: Int = 1
```

Explanation:

Since, in the list only 1 item starts with 'a' and that is “alpha”. Hence, result is 1.

Task 2

Create a list of tuples, where the 1st element of the tuple is an int and the second element is a string.

Example - ((1, 'alpha'), (2, 'beta'), (3, 'gamma'), (4, 'zeta'), (5, 'omega'))

Sol:

Initial Terminal Execution :

```
scala> val tuples1: List[(Int, String)] = List((1,"alpha"),(2,"gamma"),(3,"omega"),(4,"zeta"),  
(5,"beta"))  
tuples1: List[(Int, String)] = List((1,alpha), (2,gamma), (3,omega), (4,zeta), (5,beta))
```

2.1. For the above list, print the numbers where the corresponding string length is 4.

Sol:

Terminal Execution :

```
scala> tuples1.filter(_._2.length == 4).foreach(x => println(x._1))  
4  
5
```

Explanations:

Since the length of only 4th and 5th tuple items is equal to 4. Hence, The print result is 4 and 5.

2.2. find the average of all numbers, where the corresponding string contains alphabet 'm' or alphabet 'z'.

Sol:

Terminal Execution :

```
scala> val listfilter = tuples1.filter(t => t._2.contains("m") || t._2.contains("z"))
listfilter: List[(Int, String)] = List((2,gamma), (3,omega), (4,zeta))
```

```
scala> val avg = listfilter.map(_._1).sum / listfilter.length
avg: Int = 3
```

Explanations:

Firstly, we will create a list of tuples whose string contains either "m" or "z". Then, we will divide the sum of their Int by the number of elements. In our case 2nd, 3rd and 4th tuple items contains "m" or "z". Hence, on calculating its avg, we are getting result as 3.