Session 14 - Scala Session - I

Assignment 1

Task 1:

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

- Find count of all strings with length 4.

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

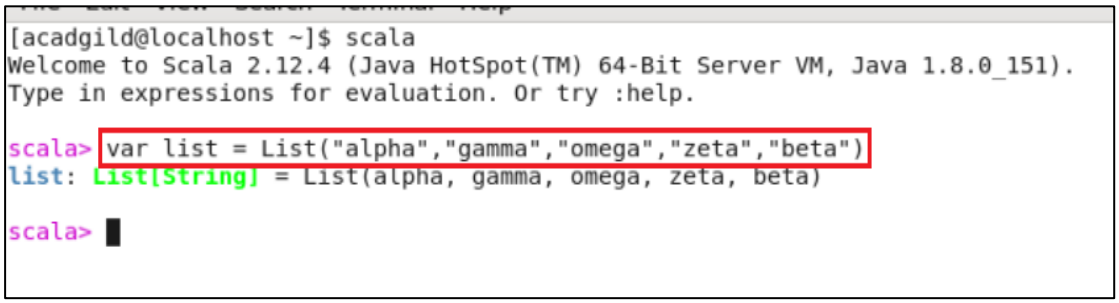
- Find count of all strings which contain alphabet ‘m’.

- Find the count of all strings which start with the alphabet ‘a’.

Creating the given string :

Command :

var list = List(“alpha”, “gamma”, “omega”, “zeta”, “beta”)



I. Find count of all strings with length 4.

Command :

list.count(a=>a.length==4)

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

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

scala>
```

As seen in the screenshot above, the count of strings with length 4 is 2 : zeta and beta

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

Command :

val list_of_lengths = list.map(s =>s.length)

```
scala> list
res1: List[String] = List(alpha, gamma, omega, zeta, beta)

scala> val list_of_lengths = list.map(s=>s.length)
list_of_lengths: List[Int] = List(5, 5, 5, 4, 4)

scala>
```

As seen in the screenshot above, the new list of integers is the list_of_lengths.

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

Command :

list.count(s=>s.contains(“m”))

```
scala> list
res2: List[String] = List(alpha, gamma, omega, zeta, beta)

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

scala>
```

As seen in the screenshot above, the count of strings containing alphabet ‘m’ is 2 : gamma and omega.

IV. Find the count of all strings which start with the alphabet ‘a’.

Command :

list.count(s=>s.startsWith(“a”))

```
scala> list
res4: List[String] = List(alpha, gamma, omega, zeta, beta)

scala> list.count(s=>s.startsWith("a"))
res5: Int = 1

scala>
```

As seen in the screenshot above, the count of strings starting with alphabet ‘a’ is 1 : alpha.

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’))

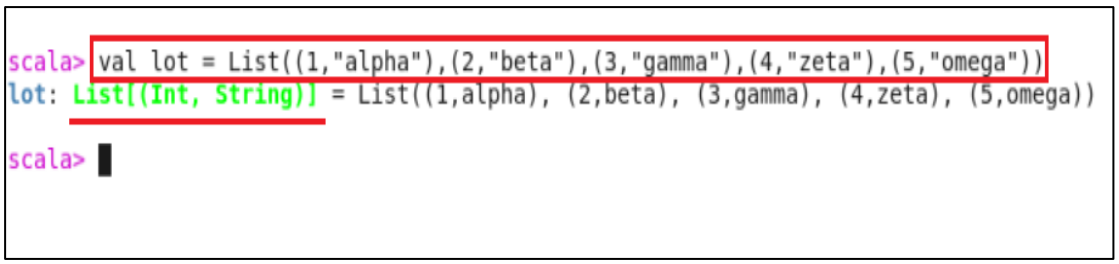
- For the above list, print the numbers where the corresponding string length is 4.

- find the average of all numbers, where the corresponding string contains alphabet ‘m’ or alphabet ‘z’.

Creating the list of tuples :

Command:

val lot = List((1, “alpha”), (2, “beta”), (3, “gamma”), (4, “zeta”), (5, “omega”))

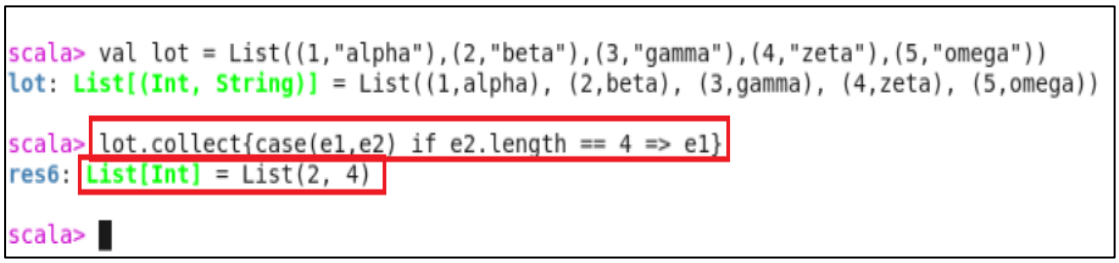


As seen in the screenshot above,the list is created and the datatype is List[(Int,String)]

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

Command:

lot.collect{case(e1,e2) if e2.length ==4 => e1}



As seen in the screenshot above,the numbers whose corresponding string length is 4 are 2 and 4 : beta and zeta

Collect function is a combination of filter + map.

II. Find the average of all numbers, where the corresponding string contains alphabet ‘m’ or alphabet ‘z’.

Command :

def calcAverage(lot:List[(Int,String)]):Int = {

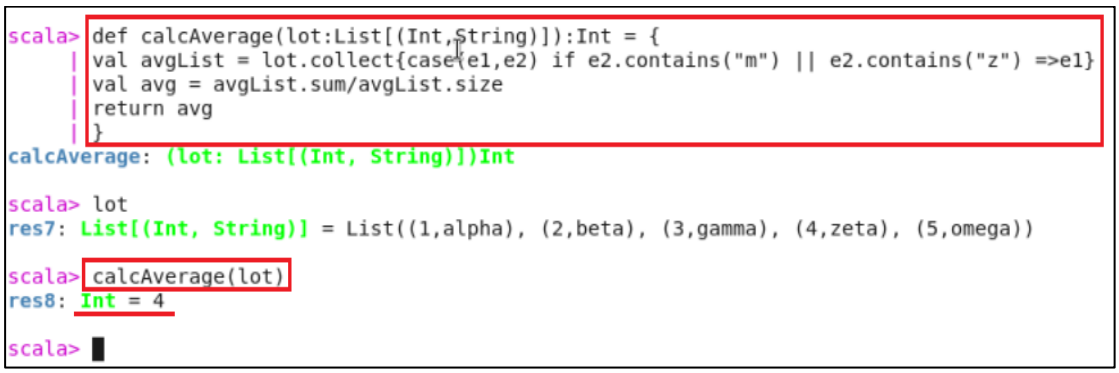
val avgList = lot.collect{case(e1,e2) if e2.contains(“m”) || e2.contains(“z”) => e1}

val avg = avgList.sum/avgList.size

return avg

}

calAverage(lot)



As seen in the screenshot above, a function is created to perform 2 steps

A. Filter out the numbers whose corresponding strings contain either m or z

B. Calculate the average of the numbers in the resultant list.

The list of numbers is : (3,4,5)

The average of this list of numbers is 4