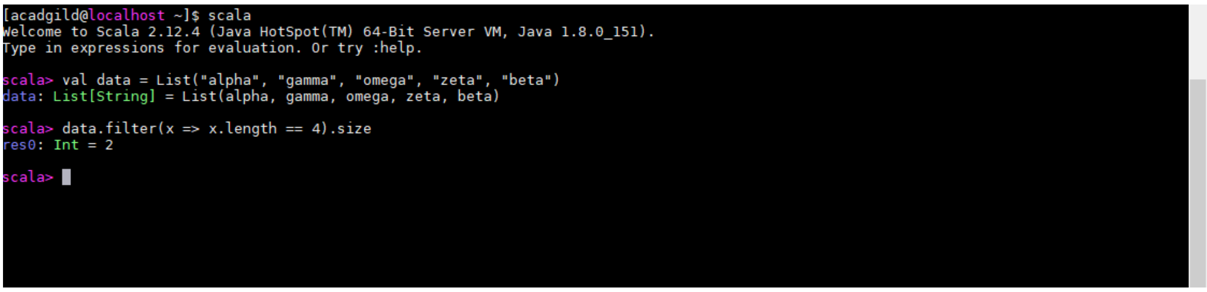
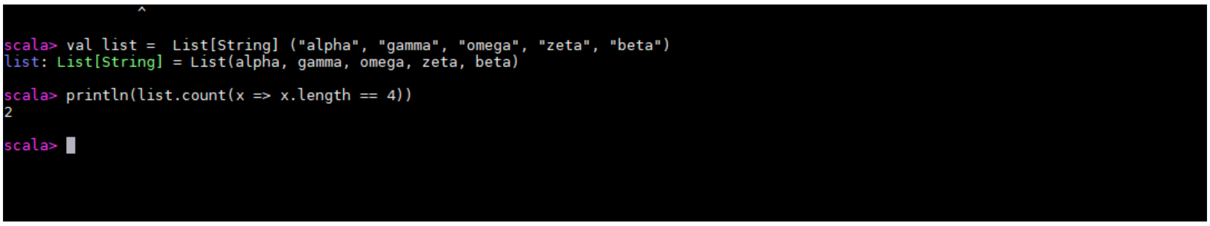
Session 14:
Scala Basics 1

Assignment 1

Task 1
Given a list of strings - List[String] (“alpha”, “gamma”, “omega”, “zeta”, “beta”)
- Find count of all strings with length 4.

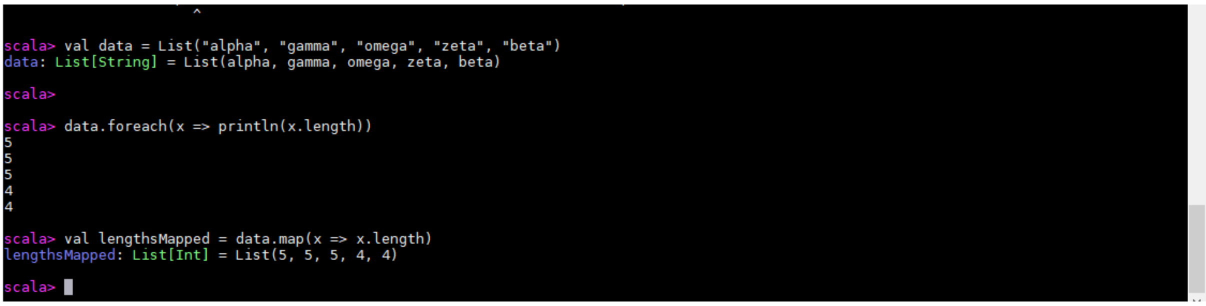


```
[acadgild@localhost ~]$ scala
Welcome to Scala 2.12.4 (Java HotSpot(TM) 64-Bit Server VM, Java 1.8.0_151).
Type in expressions for evaluation. Or try :help.

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

scala> data.filter(x => x.length == 4).size
res0: Int = 2

scala> 
```



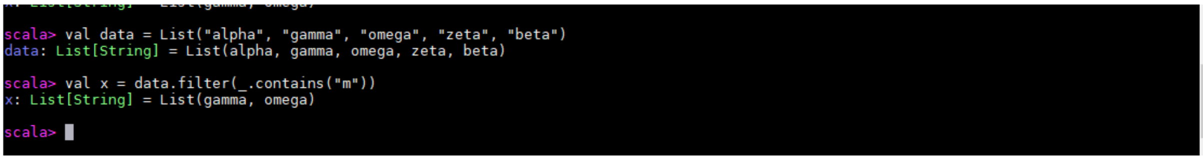
```
                 ^

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

scala> println(list.count(x => x.length == 4))
2

scala> 
```

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

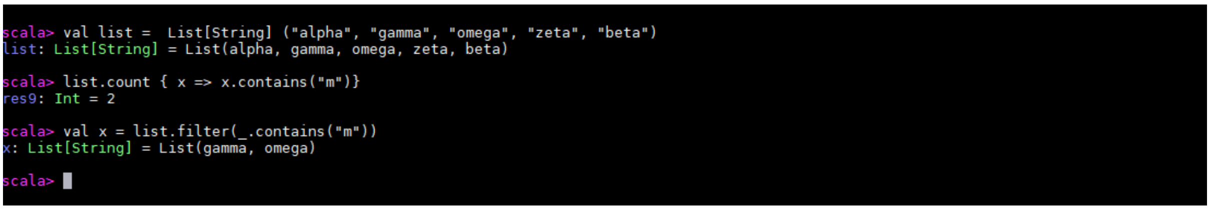


```
scala> val data = List("alpha", "gamma", "omega", "zeta", "beta")
data: List[String] = List(alpha, gamma, omega, zeta, beta)

scala>

scala> data.foreach(x => println(x.length))
5
5
5
4
4

scala> val lengthsMapped = data.map(x => x.length)
lengthsMapped: List[Int] = List(5, 5, 5, 4, 4)

scala> ▌
```

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

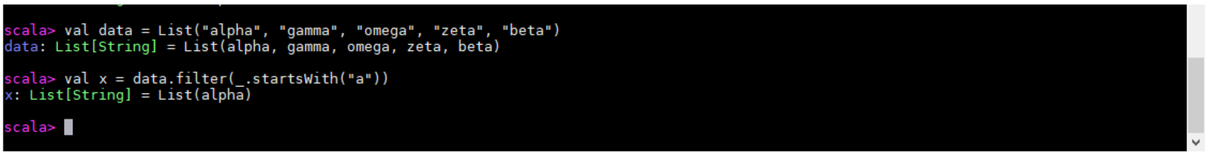


```
scala> val data = List("alpha", "gamma", "omega", "zeta", "beta")
data: List[String] = List(alpha, gamma, omega, zeta, beta)

scala> val x = data.filter(_.contains("m"))
x: List[String] = List(gamma, omega)

scala> ▌
```

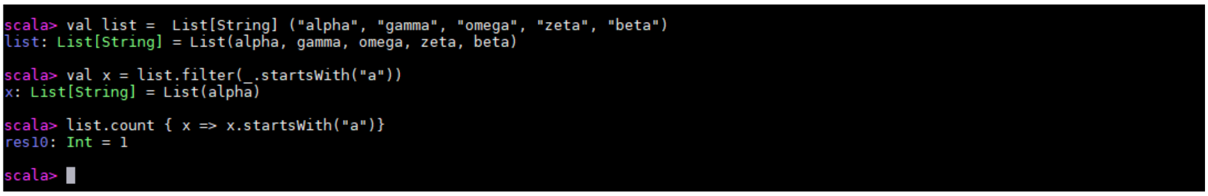


```
scala> val list =  List[String] ("alpha", "gamma", "omega", "zeta", "beta")
list: List[String] = List(alpha, gamma, omega, zeta, beta)

scala> list.count { x => x.contains("m")}
res9: Int = 2

scala> val x = list.filter(_.contains("m"))
x: List[String] = List(gamma, omega)

scala> ▌
```

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



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

scala> val x = data.filter(_.startsWith("a"))
x: List[String] = List(alpha)

scala> ▌
```



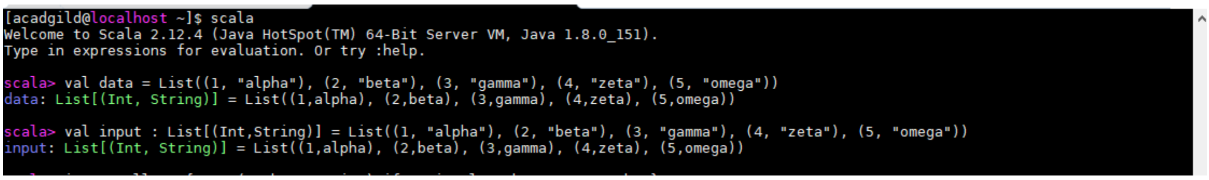
```
scala> val list =  List[String] ("alpha", "gamma", "omega", "zeta", "beta")
list: List[String] = List(alpha, gamma, omega, zeta, beta)

scala> val x = list.filter(_.startsWith("a"))
x: List[String] = List(alpha)

scala> list.count { x => x.startsWith("a")}
res10: Int = 1

scala> ▌
```

Task 2

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

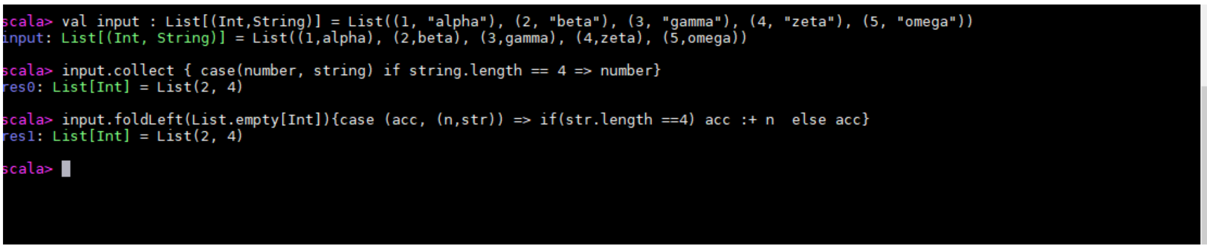
Example - ((1, ‘alpha’), (2, ‘beta’), (3, ‘gamma’), (4, ‘zeta’), (5, ‘omega’))

- 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’.



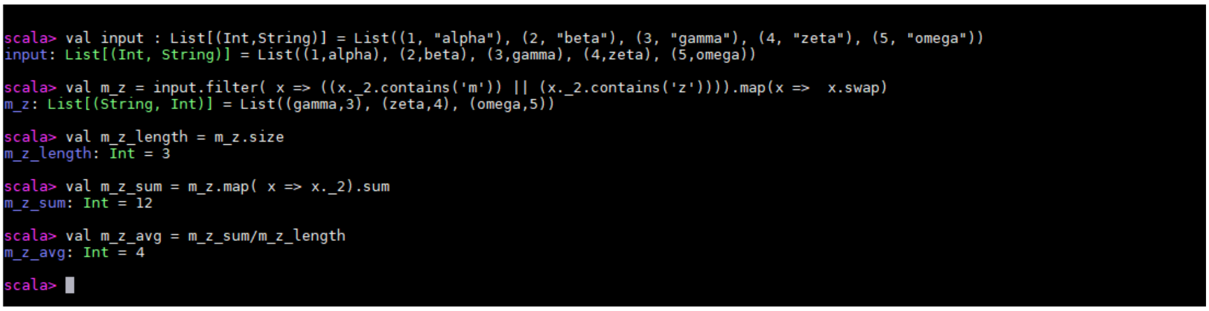
```
[acadgild@localhost ~]$ scala
Welcome to Scala 2.12.4 (Java HotSpot(TM) 64-Bit Server VM, Java 1.8.0_151).
Type in expressions for evaluation. Or try :help.

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

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

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



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

scala> input.collect { case(number, string) if string.length == 4 => number}
res0: List[Int] = List(2, 4)

scala> input.foldLeft(List.empty[Int]){case (acc, (n,str)) => if(str.length ==4) acc :+ n  else acc}
res1: List[Int] = List(2, 4)

scala> 
```

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



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

scala> val m_z = input.filter( x => ((x._2.contains('m')) || (x._2.contains('z')))).map(x =>  x.swap)
m_z: List[(String, Int)] = List((gamma,3), (zeta,4), (omega,5))

scala> val m_z_length = m_z.size
m_z_length: Int = 3

scala> val m_z_sum = m_z.map( x => x._2).sum
m_z_sum: Int = 12

scala> val m_z_avg = m_z_sum/m_z_length
m_z_avg: Int = 4

scala> 
```