ASSIGNMENT 12.2

Problem Statement:

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

1. Find count of all strings with length 4
2. Convert the list of string to a list of integers, where each string is mapped to its corresponding length
3. Find count of all strings which contain alphabet 'm'
4. Find the count of all strings which start with the alphabet 'a'

Solution:

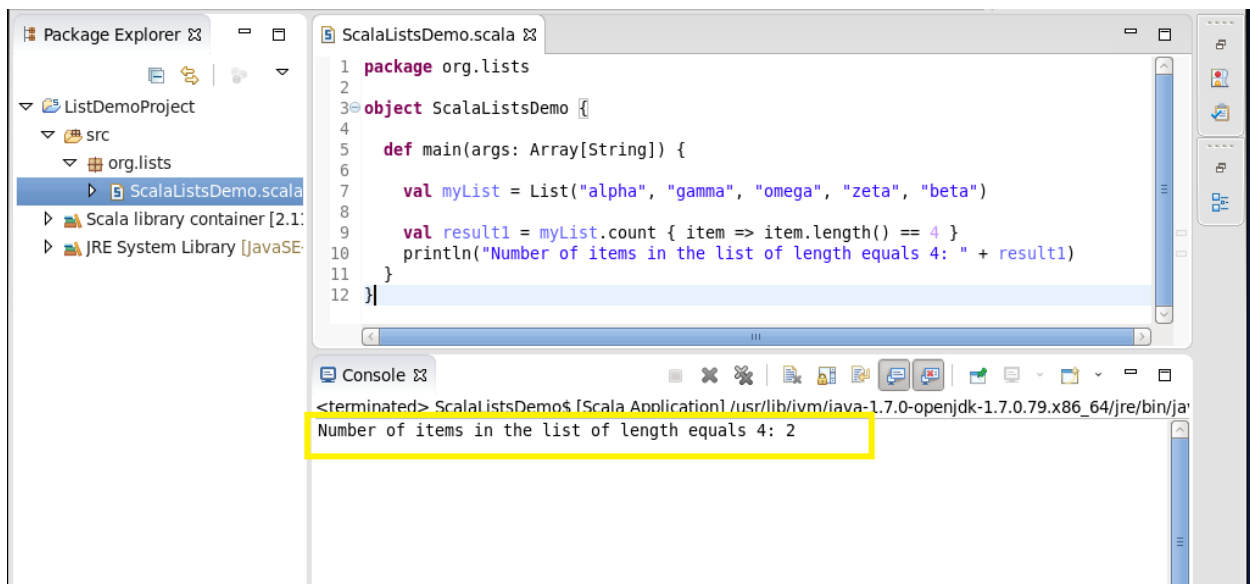1. Find count of all strings with length 4

Here is the code snippet in Scala I have written to get this count:

val myList = List("alpha", "gamma", "omega", "zeta", "beta")

val result1 = myList.count { item => item.length() == 4 } // iterate through the list, check for
// elements of length 4 and return count

println("Number of items in the list of length equals 4: " + result1) // print the count of such items

Output:

Number of items in the list of length equals 4: 2

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

Scala code snippet:

val myList = List("alpha", "gamma", "omega", "zeta", "beta")

val result2 = myList.map { item => item.length() }   // map each element of the list to its length
                                                     // and returns a new list of integers
println("List of String lengths from myList: " + result2)   // print the resultant list

Output:
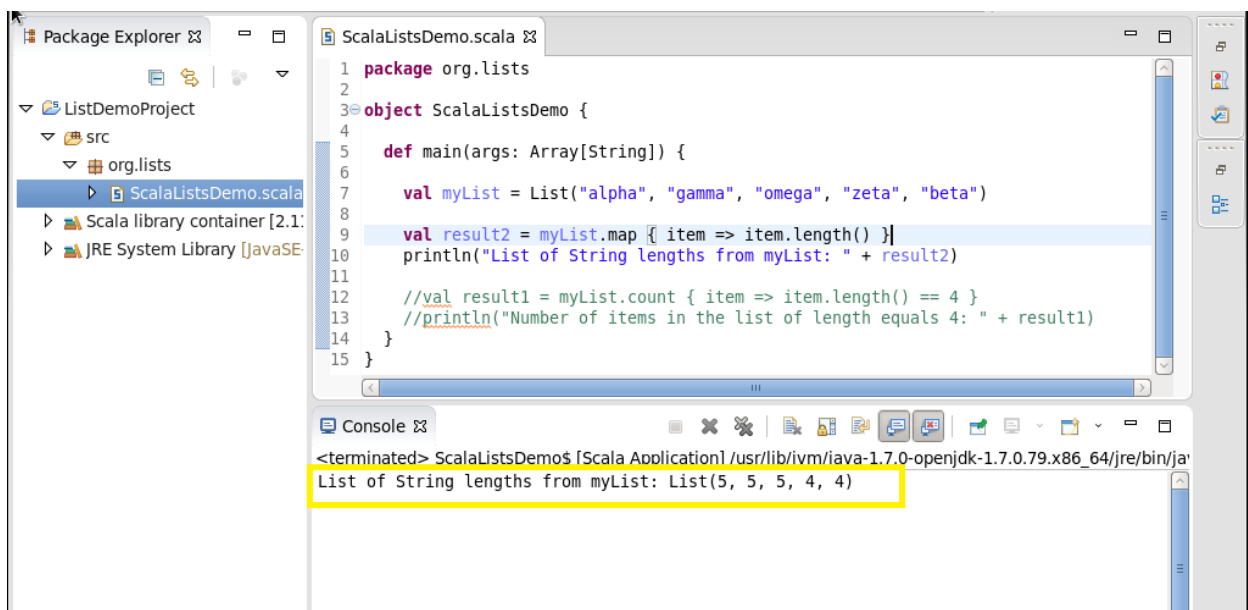
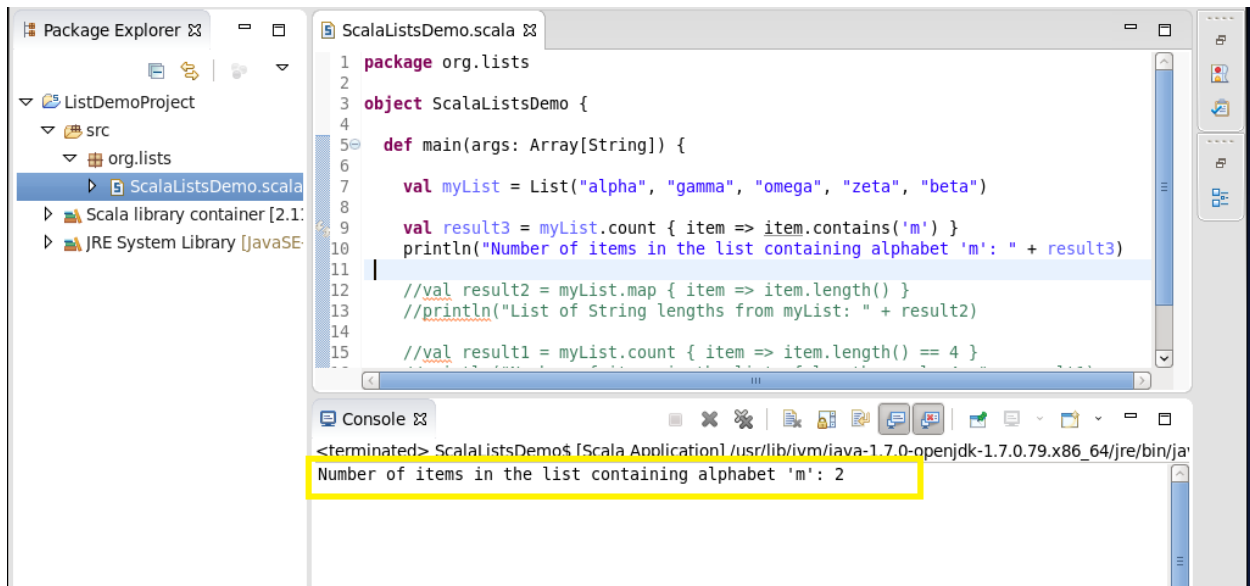3. find count of all strings which contain alphabet 'm'

Scala code snippet:

val myList = List("alpha", "gamma", "omega", "zeta", "beta")

val result3 = myList.count { item => item.contains('m') }   // iterate through the list, check for
                                                             // elements having alphabet 'm' in them and return count
println("Number of items in the list containing alphabet 'm': " + result3)   // print the count

Output:
Number of items in the list containing alphabet 'm': 2

4. find the count of all strings which start with the alphabet 'a'

Scala code snippet:

```
val myList = List("alpha", "gamma", "omega", "zeta", "beta")
val result4 = myList.count { item => item.startsWith("a") }    // iterate through the list, check for
                                    // elements starting with alphabet 'a' and return count
println("Number of items in the list starting with alphabet 'a': " + result4)   // print the count
```

Output:

Number of items in the list starting with alphabet 'a': 1
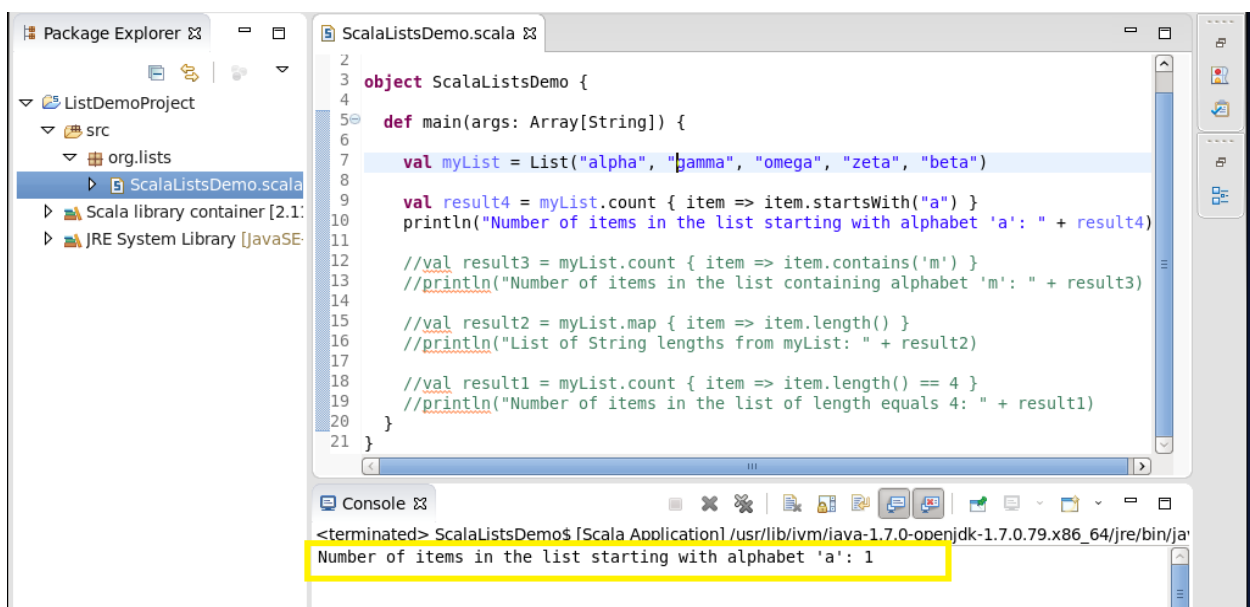
Here is the complete Scala application that works on all the problems given problems:
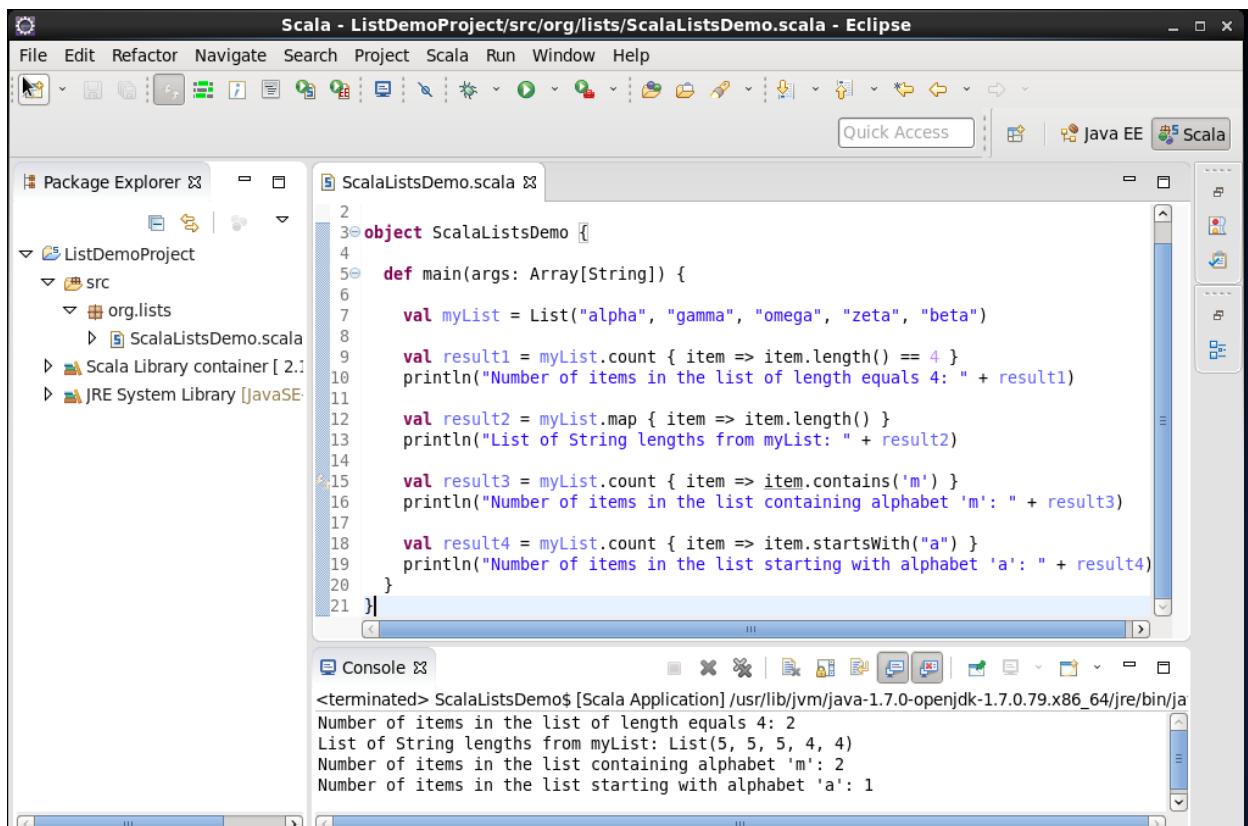
```scala
package org.lists

object ScalaListsDemo {

  def main(args: Array[String]) {

    val myList = List("alpha", "gamma", "omega", "zeta", "beta")

    val result1 = myList.count { item => item.length() == 4 }
    println("Number of items in the list of length equals 4: " + result1)

    val result2 = myList.map { item => item.length() }
    println("List of String lengths from myList: " + result2)

    val result3 = myList.count { item => item.contains('m') }
    println("Number of items in the list containing alphabet 'm': " + result3)

    val result4 = myList.count { item => item.startsWith("a") }
    println("Number of items in the list starting with alphabet 'a': " + result4)
  }
}
```