

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'.

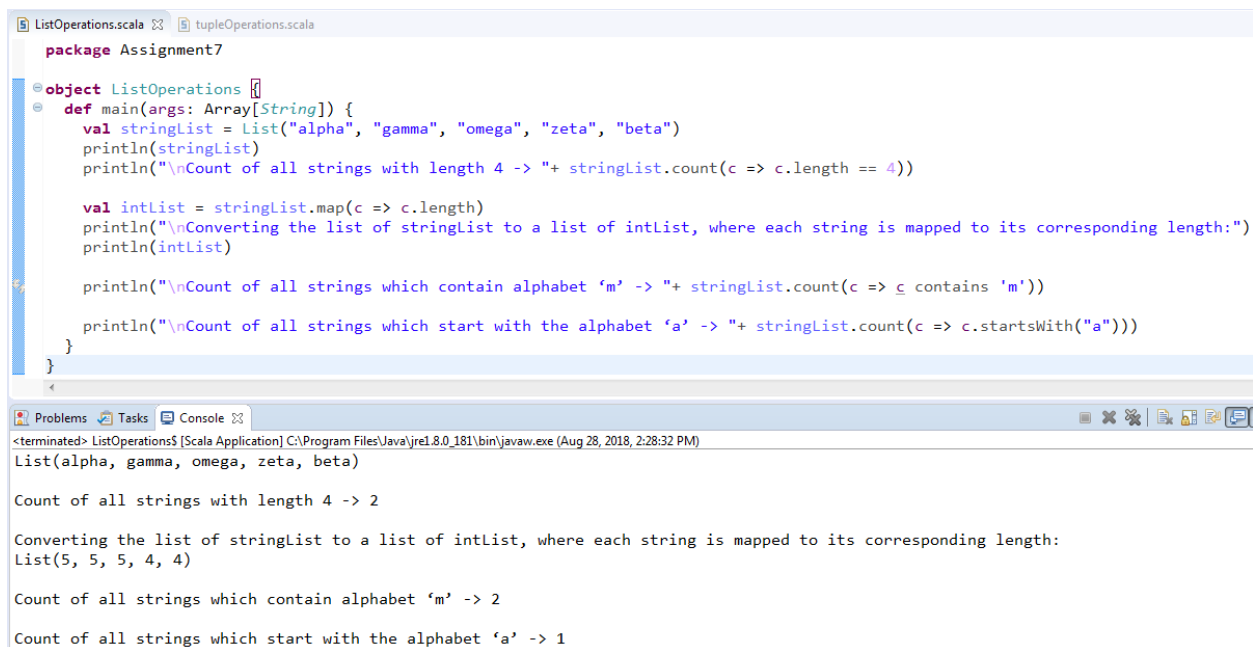
Following commands are used to get the desired output and screen shot of the executing results:

```
val stringList = List("alpha", "gamma", "omega", "zeta", "beta")
println("Count of all strings with length 4 -> "+ stringList.count(c => c.length == 4))

val intList = stringList.map(c => c.length)
println("\nConverting the list of stringList to a list of intList, where each string is mapped to its corresponding length:")
println(intList)

println("\nCount of all strings which contain alphabet 'm' -> "+ stringList.count(c => c contains 'm'))

println("\nCount of all strings which start with the alphabet 'a' -> "+ stringList.count(c => c.startsWith("a")))
```



The screenshot shows an IDE with two tabs: ListOperations.scala and tupleOperations.scala. The ListOperations.scala tab is active, displaying the following Scala code:

```
package Assignment7

object ListOperations {
  def main(args: Array[String]) {
    val stringList = List("alpha", "gamma", "omega", "zeta", "beta")
    println(stringList)
    println("\nCount of all strings with length 4 -> "+ stringList.count(c => c.length == 4))

    val intList = stringList.map(c => c.length)
    println("\nConverting the list of stringList to a list of intList, where each string is mapped to its corresponding length:")
    println(intList)

    println("\nCount of all strings which contain alphabet 'm' -> "+ stringList.count(c => c contains 'm'))

    println("\nCount of all strings which start with the alphabet 'a' -> "+ stringList.count(c => c.startsWith("a")))
  }
}
```

The console output at the bottom shows the execution results:

```
<terminated> ListOperations$ [Scala Application] C:\Program Files\Java\jdk1.8.0_181\bin\javaw.exe (Aug 28, 2018, 2:28:32 PM)
List(alpha, gamma, omega, zeta, beta)

Count of all strings with length 4 -> 2

Converting the list of stringList to a list of intList, where each string is mapped to its corresponding length:
List(5, 5, 5, 4, 4)

Count of all strings which contain alphabet 'm' -> 2

Count of all strings which start with the alphabet 'a' -> 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.

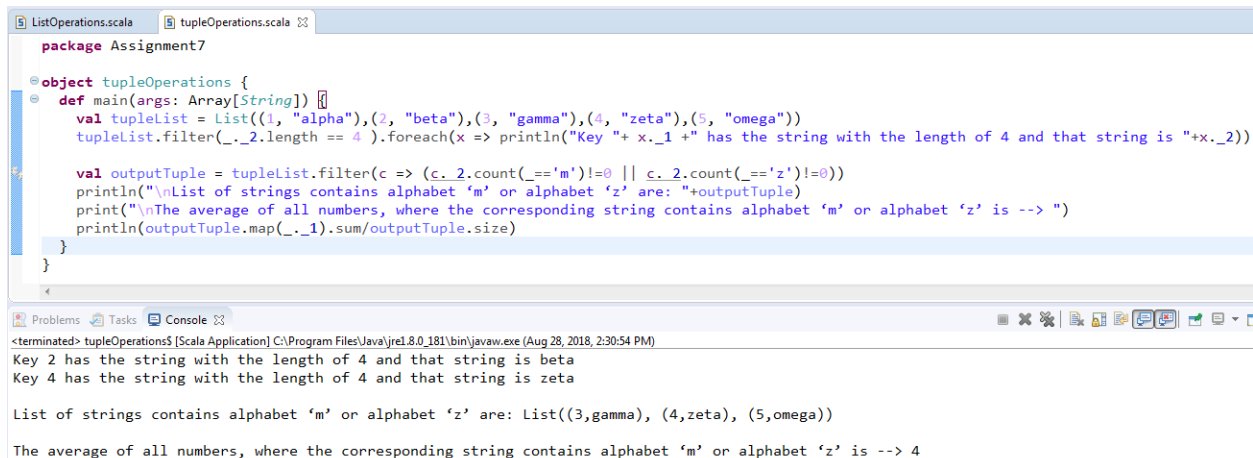
Example - ((1, 'alpha'), (2, 'beta'), (3, 'gamma'), (4, 'zeta'), (5, 'omega'))

- 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'.

Following commands are used to get the desired output and screen shot of the executing results:

```
val tupleList = List((1, "alpha"),(2, "beta"),(3, "gamma"),(4, "zeta"),(5, "omega"))
tupleList.filter(_._2.length == 4 ).foreach(x => println("Number "+ x._1 +" has the string with the length of 4 and that string is "+x._2))

val outputTuple = tupleList.filter(c => (c._2.count(_=='m')!=0 || c._2.count(_=='z')!=0))
println("\nList of strings contains alphabet 'm' or alphabet 'z' are: "+outputTuple)
print("\nThe average of all numbers, where the corresponding string contains alphabet 'm' or alphabet 'z' is --> ")
println(outputTuple.map(_._1).sum/outputTuple.size)
```



The screenshot shows an IDE with a Scala file named `tupleOperations.scala`. The code defines an object `tupleOperations` with a `main` function. The `main` function creates a list of tuples, filters them based on string length and the presence of 'm' or 'z', and prints the results. The console output shows the execution of the code, displaying the filtered tuples and the average of the numbers where the string contains 'm' or 'z'.

```
package Assignment7

object tupleOperations {
  def main(args: Array[String]) {
    val tupleList = List((1, "alpha"),(2, "beta"),(3, "gamma"),(4, "zeta"),(5, "omega"))
    tupleList.filter(_._2.length == 4 ).foreach(x => println("Key "+ x._1 +" has the string with the length of 4 and that string is "+x._2))

    val outputTuple = tupleList.filter(c => (c._2.count(_=='m')!=0 || c._2.count(_=='z')!=0))
    println("\nList of strings contains alphabet 'm' or alphabet 'z' are: "+outputTuple)
    print("\nThe average of all numbers, where the corresponding string contains alphabet 'm' or alphabet 'z' is --> ")
    println(outputTuple.map(_._1).sum/outputTuple.size)
  }
}
```

Output:

```
<terminated> tupleOperations$ [Scala Application] C:\Program Files\Java\jdk-8.0.181\bin\javaw.exe (Aug 28, 2018, 2:30:54 PM)
Key 2 has the string with the length of 4 and that string is beta
Key 4 has the string with the length of 4 and that string is zeta

List of strings contains alphabet 'm' or alphabet 'z' are: List((3,gamma), (4,zeta), (5,omega))

The average of all numbers, where the corresponding string contains alphabet 'm' or alphabet 'z' is --> 4
```