Assignment 12.3

Problem Statement
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"))
12.3.1 - for the above list, print the numbers where the corresponding string length is 4

Input Scala Commands:
```
//List Declaration for TUPLES
var listOfTuples = List((1, "alpha"), (2, "beta"), (3, "gamma"), (4, "zeta"), (5, "omega"))
//Traversing through the LIST of TUPLES
for(a <- listOfTuples){
//Retrieval of second element of each tuple in list
   val str = a._2
//verify the string length of each second element of each tuple in list
   if(str.length == 4)
     println("Numbers where string length is 4 : "+a._1)
}
```

Output: 12.3.1:

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

scala> for(a <- listOfTuples){
     |      val str = a._2
     |      if(str.length == 4) println("Numbers where string length is 4 : "+a._1)
     | }
Numbers where string length is 4 : 2
Numbers where string length is 4 : 4

scala>
```

12.3.2- find the average of all numbers, where the corresponding string contains alphabet "m"
or alphabet "z"

Input Scala Commands:

```scala
//package declaration
import scala.util.control._
//instantiation of Breaks class
var loops = new Breaks
//List declaration for collection of tuples
var listOfTuples = List((1, "alpha"), (2, "beta"), (3, "gamma"), (4, "zeta"), (5, "omega"))
var a = 0
var sum = 0
var total = 0
//Traversing through the list of tuples
for(a  <- listOfTuples){
//retrieving the second element of each tuple in the list
 var str = a._2
//Conversion of each second element to character array
 var ca  = str.toCharArray
//calculating the length of each character array
 val len = ca.length
//variable declaration of index of character array
 var i = 0
 loops.breakable{
//Traversing through each character array
     for(i <- 0 to (ca.length-1)){
//verifying each character for m or z
       if(ca(i)== 'm' || ca(i) == 'z'){
//calculating the total by adding the first element of each tuple
         total += a._1
//Calculating the total number of tuples satisfying the predicates in
if condition
         sum += 1
         loops.break}
     }
 }
 }
//display the value calculated above
println("Average of all numbers with char m or z : " + (total/sum))
```

Output 12.3.2 :

```
scala> import scala.util.control._
import scala.util.control._

scala> var loops = new Breaks
loops: scala.util.control.Breaks = scala.util.control.Breaks@54b44f1

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

scala> var a = 0
a: Int = 0

scala> var sum = 0
sum: Int = 0

scala> var total = 0
total: Int = 0

scala>

scala> for(a  <- listOfTuples){
     |     var str = a._2
     |     var ca  = str.toCharArray
     |     val len = ca.length
     |     var add = 1
     |     var i = 0
     |     loops.breakable{
     |
     |         for(i <- 0 to (ca.length-1)){
     |           if(ca(i)== 'm' || ca(i) == 'z'){
     |             total += a._1
     |             sum += 1
     |             loops.break}
     |          }
     |     }
     | }

scala> println("Average of all numbers with char m or z : " + (total/sum))
Average of all numbers with char m or z : 4

scala>
```