**CSC 369 – Assignment 5**

**Question 1:**

import scala.io.Source

object NumDivisble3 {

def main (args: Array[String]) : Unit = {

val lines = Source.fromFile("input.txt").getLines.toList

val integerMap = lines.flatMap(\_.split("\\s+"))

val div3Map = integerMap.filter(Integer.parseInt(\_)%3 == 0)

div3Map.distinct.foreach(x => println(x + " appears " +

div3Map.count(\_ == x) + " times"))

}

}

**Question 2:**

import scala.io.\_

import org.apache.spark.SparkContext.\_

object EmployeeDepartment {

def main(args: Array[String]) : Unit = {

val emps = Source.fromFile("employees.txt").getLines.toList;

val deps = Source.fromFile("departments.txt").getLines.toList;

val rddEmps = sc.parallelize(emps)

val rddDeps = sc.parallelize(deps)

val rddCart = rddEmps.cartesian(rddDeps)

val matches = rddCart.filter {x => x.\_1.split(",")(1) ==

x.\_2.split(",")(0)}

matches.collect.foreach(x => println(x.\_1.split(",")(0) + ", "

+ x.\_2.split(",")(1)))

}

}

**Question 3:**

import scala.io.\_

object GPA {

val gradeMap = Map("A" -> 4, "B" -> 3, "C" -> 2, "D" -> 1, "F" -> 0)

def calcGPA(line:String) : Unit = {

var grades = line.split(", ",3)(2).split(", ")

val gradeInfo = grades.aggregate((0, 0)) (

(x,y) => (x.\_1 + gradeMap(y.split(" ")(0)), x.\_2 + 1),

(x,y) => (x.\_1 + y.\_1, x.\_2 + y.\_2))

val lineDelim = line.split(",")

println(lineDelim(0) + "," + lineDelim(1) + ", " +

gradeInfo.\_1 \* 1.0 / gradeInfo.\_2)

}

def main(args: Array[String]) : Unit = {

val lines = Source.fromFile("input.txt").getLines.toList

lines.foreach(calcGPA)

}

}