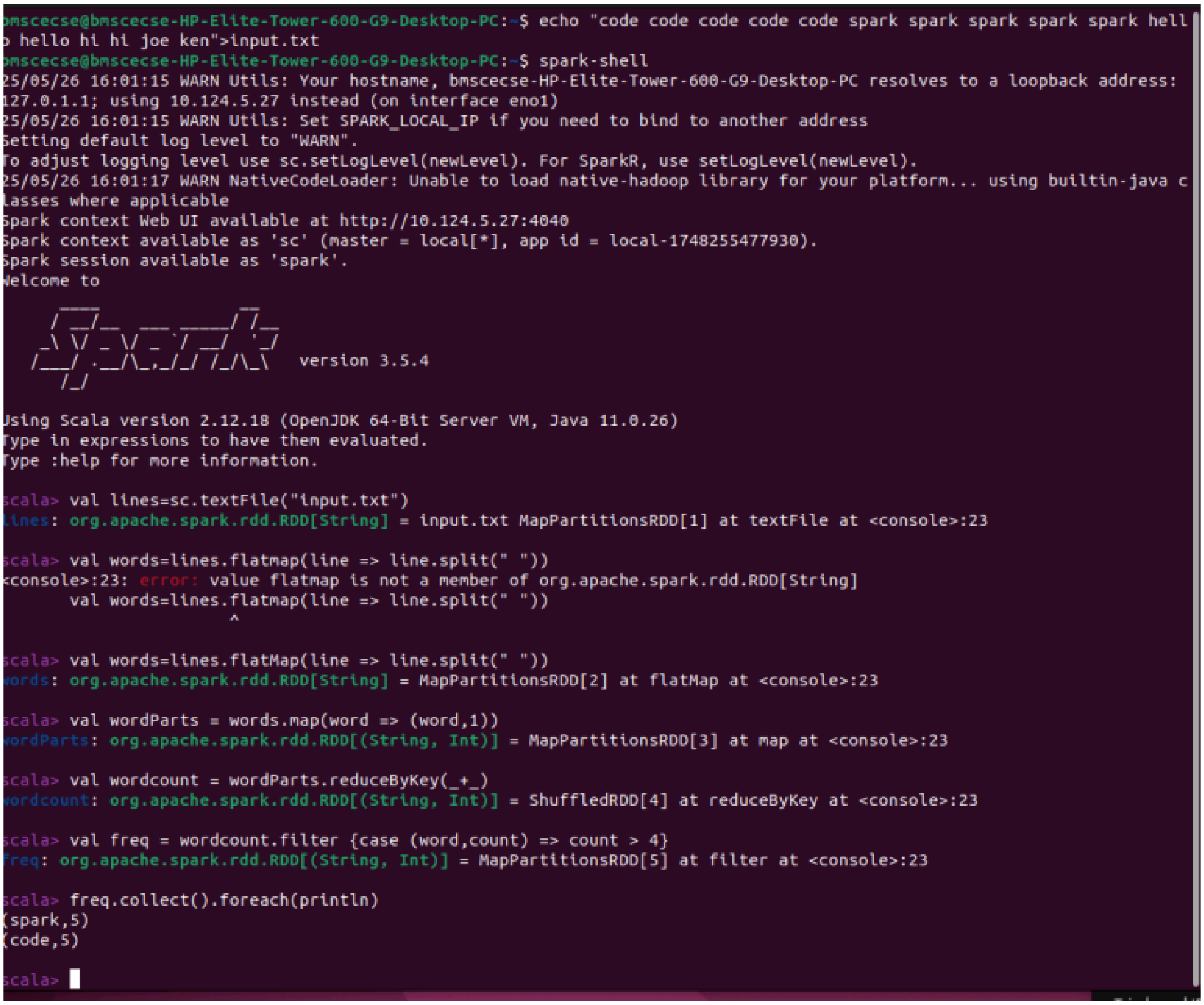
Lab9 Using RDD and FlatMap

Code:

```
import org.apache.spark.{SparkConf, SparkContext}

object WordCountFilter {
  def main(args: Array[String]): Unit = {
    // Create Spark configuration and context
    val conf = new SparkConf().setAppName("WordCountFilter").setMaster("local[*]")
    val sc = new SparkContext(conf)

    // Read the input file (replace "input.txt" with your actual file path)
    val input = sc.textFile("input.txt")

    // Split each line into words using flatMap
    val words = input.flatMap(line => line.split("\\W+"))

    // Map each word to (word, 1), then reduce by key to count
    val wordCounts = words
      .filter(_.nonEmpty)
      .map(word => (word.toLowerCase, 1))
      .reduceByKey(_ + _)

    // Filter words with count > 4
    val filteredWords = wordCounts.filter { case (_, count) => count > 4 }

    // Save the result to a text file (optional)
    filteredWords.saveAsTextFile("output")

    // For console output (optional for debugging)
    filteredWords.collect().foreach(println)

    // Stop the Spark context
    sc.stop()
  }
}
```



```
bmscecse@bmscecse-HP-Elite-Tower-600-G9-Desktop-PC:~$ echo "code code code code code spark spark spark spark spark hell
o hello hi hi joe ken">input.txt
bmscecse@bmscecse-HP-Elite-Tower-600-G9-Desktop-PC:~$ spark-shell
25/05/26 16:01:15 WARN Utils: Your hostname, bmscecse-HP-Elite-Tower-600-G9-Desktop-PC resolves to a loopback address:
127.0.1.1; using 10.124.5.27 instead (on interface eno1)
25/05/26 16:01:15 WARN Utils: Set SPARK_LOCAL_IP if you need to bind to another address
Setting default log level to "WARN".
To adjust logging level use sc.setLogLevel(newLevel). For SparkR, use setLogLevel(newLevel).
25/05/26 16:01:17 WARN NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java c
lasses where applicable
Spark context Web UI available at http://10.124.5.27:4040
Spark context available as 'sc' (master = local[*], app id = local-1748255477930).
Spark session available as 'spark'.
Welcome to
      ____              __
     / __/__  ___ _____/ /__
    _\ \/ _ \/ _ `/ __/  '_/
   /___/ .__/\_,_/_/ /_/\_\   version 3.5.4
      /_/

Using Scala version 2.12.18 (OpenJDK 64-Bit Server VM, Java 11.0.26)
Type in expressions to have them evaluated.
Type :help for more information.

scala> val lines=sc.textFile("input.txt")
lines: org.apache.spark.rdd.RDD[String] = input.txt MapPartitionsRDD[1] at textFile at <console>:23

scala> val words=lines.flatmap(line => line.split(" "))
<console>:23: error: value flatmap is not a member of org.apache.spark.rdd.RDD[String]
       val words=lines.flatmap(line => line.split(" "))
                       ^

scala> val words=lines.flatMap(line => line.split(" "))
words: org.apache.spark.rdd.RDD[String] = MapPartitionsRDD[2] at flatMap at <console>:23

scala> val wordParts = words.map(word => (word,1))
wordParts: org.apache.spark.rdd.RDD[(String, Int)] = MapPartitionsRDD[3] at map at <console>:23

scala> val wordcount = wordParts.reduceByKey(_+_)
wordcount: org.apache.spark.rdd.RDD[(String, Int)] = ShuffledRDD[4] at reduceByKey at <console>:23

scala> val freq = wordcount.filter {case (word,count) => count > 4}
freq: org.apache.spark.rdd.RDD[(String, Int)] = MapPartitionsRDD[5] at filter at <console>:23

scala> freq.collect().foreach(println)
(spark,5)
(code,5)

scala> 
```