

1.

```
import scala.io.StdIn.readLine

object Main {
  def main(args: Array[String]): Unit = {
    val n = readLine().toInt
    val names = (1 to n).map(_ => readLine())
    val grouped = names.groupBy(_.length).toSeq.sortBy(_._1)
    for ((len, group) <- grouped) {
      println(s"$len : ${group.mkString(", ")}")
    }
  }
}
```

```
Compiling project (Scala 3.6.4, JVM (21))
Compiled project (Scala 3.6.4, JVM (21))
5
Ari
Budi
Santi
Rama
Ani
3 : Ari, Ani
4 : Budi, Rama
5 : Santi
```

2.

```
import scala.io.StdIn.readLine

object Main {
  def Uppercase(s: String): String = {
    s.split(" ").map { word =>
      if (word.nonEmpty) word.head.toUpper + word.tail.toLowerCase else ""
    }.mkString(" ")
  }

  def main(args: Array[String]): Unit = {
    val n = readLine().toInt
    val names = (1 to n).map(_ => readLine())
    val sorted = names.map(Uppercase).sortBy(name => name.split(" ").last.toLowerCase)
    sorted.foreach(println)
  }
}
```

```
}
```

```
PS C:\Users\Hp\Documents\workspace\CS60\Semester4\Pempro\pempro10> scala "
\Documents\workspace\CS60\Semester4\Pempro\pempro10\2.scala"
5
Dina Rahmawati
Rudi Gunawan
Tika Anggraini
Anton Prasetyo
Lia Ramadhani
Tika Anggraini
Rudi Gunawan
Anton Prasetyo
Dina Rahmawati
Lia Ramadhani
```

3.

```
import scala.io.StdIn.readLine

object Main {
  def main(args: Array[String]): Unit = {
    val n = readLine().toInt
    val words = (1 to n).map(_ => readLine())
    val grouped = words.groupBy(_.last).toSeq.sortBy(-_._2.length)
    for ((lastChar, group) <- grouped) {
      println(s"$lastChar : ${group.length}")
    }
  }
}
```

```
Compiling project (Scala 3.6.4, JVM (21))
Compiled project (Scala 3.6.4, JVM (21))
6
makan
jalan
pemrograman
main
minum
makan
n : 5
m : 1
```

4.

```
import scala.io.StdIn.readLine

object Main {
  def main(args: Array[String]): Unit = {
    val n = readLine().split(" ").map(_.toLowerCase)
    val a = readLine().split(" ").map(_.toLowerCase)
    val common = n.toSet.intersect(a.toSet)
    println(common.toSeq.sorted.mkString("\n"))
  }
}
```

```
Compiling project (Scala 3.6.4, JVM (21))
Compiled project (Scala 3.6.4, JVM (21))
Saya sedang belajar pemrograman di rumah
Belajar di kampus sangat menyenangkan
belajar
di
```

5.

```
import scala.io.StdIn.readLine

object Main {
  def main(args: Array[String]): Unit = {
    val n = readLine().split(" ").map(_.toLowerCase)
    val a = readLine().split(" ").map(_.toLowerCase)
    val common = n.toSet.intersect(a.toSet)
    println(common.toSeq.sorted.mkString("\n"))
  }
}
```

```
Compiling project (Scala 3.6.4, JVM (21))
Compiled project (Scala 3.6.4, JVM (21))
3
bakar : akRab
Kaos : soAk
Kusam : mAsaK
Anagram
Anagram
Bukan Anagram
```

6.

```
import scala.io.StdIn.readLine

object Main {
  def main(args: Array[String]): Unit = {
    val text = readLine().replace("(", "").replace(")", "").split(" ")
    text.flatMap(_.toLowerCase.split("-"))
    val count = text.groupBy(identity).view.mapValues(_.length).toMap
    println(s"Jumlah total kata: ${text.length}")
    val meanLength = text.map(_.length).sum.toDouble / text.length
    println(f"Mean length: $meanLength%.2f")
    val longest = count.keys.maxBy(_.length)
    println(s"Kata paling panjang: $longest")
    val mostFrequent = count.maxBy(_._2)
    println(s"Kata paling sering: ${mostFrequent._1}")
  }
}
```

```
Kriptografi kunci-publik disebut juga kriptografi kunci asimetrik (asymmetric-key cryptography) karena kunci enkripsi tidak sama dengan kunci dekripsi.
Jumlah total kata: 19
Mean length: 6.89
Mean frequency: 1.27
Kata paling panjang: cryptography
Kata paling sering: kunci
```

7.

```
import scala.io.StdIn.readLine

object Main {
  def main(args: Array[String]): Unit = {
    val n = readLine().toInt
    val names = scala.collection.mutable.Set[String]()
    val favorit = scala.collection.mutable.Set[String]()

    for (_ <- 1 to n) {
      val line = readLine()
      val Array(a, _, b) = line.split(" ").map(_.trim)
      names += a
      names += b
      favorit += b
    }

    val notfavorit = names.diff(favorit).toList.sorted
    notfavorit.foreach(println)
  }
}
```

```
PS C:\Users\Hp\Documents\workspace\CS60\Semester4\Pempro\pempro10> scala "c:\Users\Hp\Documents\workspace\CS60\Semester4\Pempro\pempro10\7.scala"
Compiling project (Scala 3.6.4, JVM (21))
Compiled project (Scala 3.6.4, JVM (21))
5
Sopo > Jarwo
Denis > Adit
Adit > Jarwo
Adel > Sopo
Jarwo > Sopo
Adel
Denis
```