Practice 2

1. Develop a scala algorithm that calculates the radius of a circle.
The "readLine" library is imported to be able to make use of the functions contained within it,
and in this way to be able to read the values entered from the command line.

Then inside the function is the program logic, where println is used to display messages and
"var" to declare variables. Finally, the function is called to carry out the task in question.

```scala
import scala.io.StdIn.readLine

def radius(): Unit = {
    println ("Enter the diameter of a circle:")
    var D = scala.io.StdIn.readInt ()
    var r = D/2
    println ("The radius of the circle is:" + r)
}

radius ()

scala> radius ()
Enter the diameter of a circle:
The radius of the circle is: 5
```

2. Develop a scala algorithm that tells me if a number is prime.
A function is used again to encompass the general logic of the program. The println function
is used to display messages in the console and the "readInt" function is used to dynamically
read the user values. Then the if is used to control the decisions made, and the modulo (%)
operator to determine if a number is odd or not.

```scala
def prime(): Unit = {Please
    println (enter"a number:")
    val n = scala.io.StdIn.readInt ()
    if(n%2==0) {
        println (s "$ n is even")
    } else {
        println (s "$ n is odd")
    }
}

prime ()

scala> prime ()
Enter a number:
11 is odd
```

3. Given the variable var bird = "tweet", use string interpolation to print "I'm writing a tweet".

String interpolation consists of entering a value into an existing string, and the second line shows how it is done. An s is added before opening double quotes, and the place where you want to enter said variable is added the $ symbol, in this way it is displayed as a normal string.

```scala
var bird = "tweet"
val message = s "I am writing a $ bird"

scala> var bird = "tweet"
bird: String = tweet

scala> val message = s "I am writing a $ bird"
message: String = I am writing a tweet
```

4. Given the variable var message = "Hello Luke, I am your father!" use slice to extract the sequence "Luke":

The variable that contains the message is declared, the Scala method is used that allows obtaining a section of a string from an initial index and a final index that determines the substring to obtain in specific.

```scala
val message = "Hello Luke, I am your father!"
message.slice (5,9)
```

Result:

```scala
scala> message.slice (5,9)
res1: String = Luke
```

5. What is the difference between value (val) and a variable (var) in Scala?
- "Val" creates an immutable variable, whose value cannot change once declared.
- "Var" creates a mutable variable, it is possible to modify its original value.

6. Given the tuple (2,4,5,1,2,3,3.1416,23) returns the number 3.1416:

The tuple variable that contains a set of numbers is declared where the intention is to get one of the specific numbers, once the variable is declared, the "._ {number}" is used, the number is specified according to the index within the defined set.

```scala
val tuple = (2,4,5,1,2,3,3.1416,23)
tuple._7
```

Result:

```scala
scala> tuple._7
res2: Double = 3.1416
```