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# Binary in Scala

Readme (readme)

Test Suite (../binary)

## Binary

Write a program that will convert a binary number, represented as a string (e.g. '101010'), to its decimal equivalent using first principles

Implement binary to decimal conversion. Given a binary input string, your program should produce a decimal output. The program should handle invalid inputs.

#### Note

• Implement the conversion yourself. Do not use something else to perform the conversion for you.

### About Binary (Base-2)

Decimal is a base-10 system.

A number 23 in base 10 notation can be understood as a linear combination of powers of 10:

- The rightmost digit gets multiplied by  $10^0 = 1$
- The next number gets multiplied by  $10^1 = 10$
- ..
- The n\*th number gets multiplied by 10^(n-1)\*.
- · All these values are summed.

So:  $23 \Rightarrow 2*10^1 + 3*10^0 \Rightarrow 2*10 + 3*1 = 23$  base 10

Binary is similar, but uses powers of 2 rather than powers of 10.

So:  $101 \Rightarrow 1^2^2 + 0^2^1 + 1^2^0 \Rightarrow 1^4 + 0^2 + 1^1 \Rightarrow 4 + 1 \Rightarrow 5$  base 10.

The Scala exercises assume an SBT project scheme. The exercise solution source should be placed within the exercise directory/src/main/scala. The exercise unit tests can be found within the exercise directory/src/test/scala.

To run the tests simply run the command sbt test in the exercise directory.

For more detailed info about the Scala track see the help page (http://help.exercism.io/getting-started-with-scala.html).

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### Source

All of Computer Science view source (http://www.wolframalpha.com/input/?i=binary&a=\*C.binary\_\*MathWorld-)

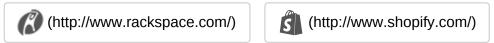


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