

Languages

A **language** is a set of strings over an alphabet Σ .

- ▶ The set of all finite-length strings over an alphabet Σ is denoted Σ^* .
- ▶ The set of all non-empty finite-length strings over Σ is denoted Σ^+
- ▶ The length of a string is the number of characters it has
- ▶ The empty string has zero length
- ▶ If x and y are strings, we write xy to denote the concatenation of the two strings. For example, if $x = 00$ and $y = 101$ then $xy = 00101$.