

7 A language that is not regular

Since we now have several equivalent ways to show that a language is regular, we also have several ways to show that a language is not regular.

Here is a language that is not regular: $L = \{0^n 1^n \mid n = 0, 1, 2, \dots\}$.

1. What are our options for showing the language is not regular?
2. Which do you think will be easiest?
3. See if you can give a convincing argument that L is not regular.
4. What other languages can you construct that are not regular using the same basic idea?