

DFAs

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In these problems, regular languages over the alphabet of 1s and 0s are described in English. For each, give examples of strings that are in the language and strings that aren't (test cases), and draw the DFA in transition diagram form.

Strings that contain at least three 1s.

Strings that contain at least one consecutive pair of symbols (00 or 11).

Strings which, when interpreted as unsigned binary numbers, are greater than 3.

Strings that *don't* contain the substring 101.

On this page, various regular languages are specified in one of three forms (English description, DFA transition diagram, DFA transition table). For each, give test cases and specify the DFA in the other two forms.

Hawaiian words: made up of one or more syllables; each syllable contains either a consonant followed by a vowel or just a vowel. (The eight consonants are hklmnpw' and the five vowels are aeiou, but you can use C and V respectively to refer to them collectively.)

C integer literals: can be written in decimal, octal (base 8), or hexadecimal (base 16); numbers written with an initial 0x or 0X are expected to be in hex, and with an initial 0 are expected to be octal.

	0	1
→ A	B	D
* B	B	C
C	B	C
D	D	D

