



4.4.2.3 Regular Expressions

Regular Expressions

A regular expression is a shorthand notation for describing a set of strings.

A language that can be described by a regular expression is called a regular language.

Metacharacter	Description	Example
*	0 or more repetitions	a^*b Zero or more a followed by a b {b, ab, aab, aaab, aaaab, ...}
+	1 or more repetitions	a^+b One or more a followed by a b {ab, aab, aaab, aaaab, ...}
?	0 or 1 occurrence	$a?b$ Zero or one a followed by a b {b, ab}
	Alternation (or)	$a b$ Either a or b {a, b}
()	To group expressions	$a^*(b c)$ Zero or more a followed by either a b or a c

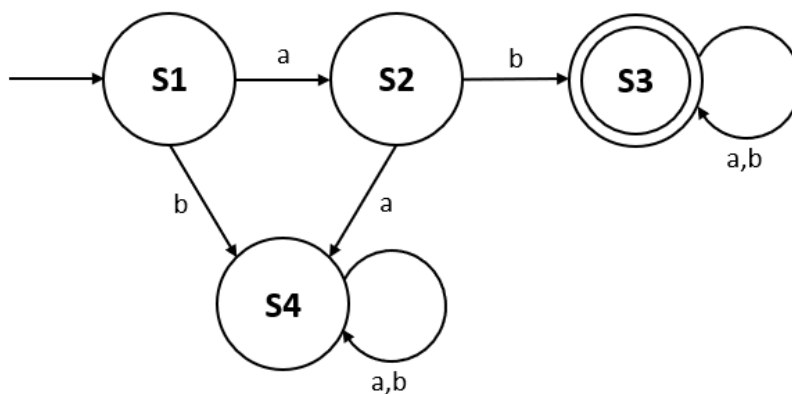




Finite State Machines

A regular language can also be described by an FSM.

Every regular expression can be converted into an FSM and vice versa.



A finite state machine that describes the same regular language as the regular expression
 $ab(a|b)^*$

