

CFLCW2

1.

Keywords	While + if + then + else + do + for + to + true + false + read + write + skip
Operators	'+' + '-' + '*' + '%' + '/' + '==' + '!=' + '>' + '<' + ':=' + '&&' + ' '
Strings	" . [sym]* . "
LParen	'('
RParen	')
Semicolons	';'
Whitespace	(" ", \n, \t)*
Numbers	Digit . ([1 - 9] + Digit)*
Digit	[0 - 9]
Begin	"{"
End	"}"
Identifiers	sym . (sym + digit)*
Sym	[a - z]

2.

mkeps([$c_1 \dots c_n$])	N/A
mkeps(r^+)	mkeps($r . r^*$)
mkeps($r^?$)	Empty
mkeps(r^n)	If ($n == 0$) Stars(Nil) else mkeps(r^{n-1})*
inj([$ch_1 \dots ch_n$]), c, _	If ($c \in ch$) inj(CHAR(c), c, v) else Empty
inj(r^+), c, (v . Stars(vs))	Stars(inj(r, c, v) :: vs)
inj($r^?$), c, Right(v)	inj(r, c, v)
inj($r^?$), c, Empty	Chr(c)
inj(r^n), c, (v . Stars(vs))	Stars(inj(r, c, v) :: vs)

- 3.

Fib (Fig 1)	Nested Loop (Fig 2)
(k,write)	(i,start)
(str,"fib")	(o,:=)
(s,;)	(n,0)
(k,read)	(n,0)
(i,n)	(n,1000)
(s,;)	(s,;)
(i,minus1)	(i,x)
(o,:=)	(o,:=)
(n,0)	(i,start)
(s,;)	(s,;)
(i,minus2)	(i,y)
(o,:=)	(o,:=)
(n,1)	(i,start)
(s,;)	(s,;)
(k,while)	(i,z)
(i,n)	(o,:=)
(o,>)	(i,start)
(n,0)	(s,;)
(k,do)	(k,while)
(b,{)	(n,0)
(i,temp)	(o,<)
(o,:=)	(i,x)
(i,minus2)	(k,do)
(s,;)	(b,{)
(i,minus2)	(k,while)
(o,:=)	(n,0)
(i,minus1)	(o,<)
(o,+)	(i,y)
(i,minus2)	(k,do)
(s,;)	(b,{)
(i,minus1)	(k,while)
(o,:=)	(n,0)
(i,temp)	(o,<)
(s,;)	(i,z)
(i,n)	(k,do)
(o,:=)	(b,{)
(i,n)	(i,z)
(o,-)	(o,:=)
(n,1)	(i,z)
(b,})	(o,-)
(s,;)	(n,1)
(k,write)	(b,})
(str,"result")	(s,;)
(s,;)	(i,z)
(k,write)	(o,:=)
(i,minus2)	(i,start)
	(s,;)

	(i,y)
	(o,:=)
	(i,y)
	(o,-)
	(n,1)
	(b,})
	(s,;)
	(i,y)
	(o,:=)
	(i,start)
	(s,;)
	(i,x)
	(o,:=)
	(i,x)
	(o,-)
	(n,1)
	(b,})