

## Gramatika jazyku Pepina

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**Očíslování pravidel:** (startovní pravidlo: **blokpriku**)

#	Název pravidla	Hodnota
1	blokpriku	pripraveni
2		forcykl
3		whilecykl
4		docykl
5		ifpodm
6		deklarace
7		konzole
8		ukonceni
9		switch
10		
11	vyraz	ndmd vyrazc
12		UVOZOVKY STROBSAH UVOZOVKY
13	vyrazc	PLUS ndmd vyrazc
14		MINUS ndmd vyrazc
15		
16	ndmd	zavrk ndmdc
17	ndmdc	TIMES zavrk ndmdc
18		DIVIDED zavrk ndmdc
19		MODULO zavrk ndmdc
20		INTDIV zavrk ndmdc
21		
22	zavrk	LPAR vyraz RPAR
23		IDENT
24		znamenka hodnota
25	hodnota	INTEGER_CONST
26		DOUBLE_CONST
27	switch	SELECT CASE LPAR IDENT RPAR case caseelse ENDSELECT blokpriku
28	case	CASE znamenko INTEGER_CONST COLON blokpriku case
29		
30	caseelse	DEFAULT COLON blokpriku
31		
32	pripraveni	IDENT ASSIGN vyraz SEMICOLON blokpriku
33	podminka	vyraz porovnani vyraz
34	forcykl	FOR LPAR IDENT ASSIGN znamenko INTEGER_CONST TO znamenko INTEGER_CONST forstep RPAR blokpriku NEXT blokpriku
35	forstep	STEP znamenko INTEGER_CONST
36		
37	whilecykl	WHILE LPAR podminka RPAR blokpriku WEND blokpriku
38	docykl	DO blokpriku DOWHILE LPAR podminka RPAR blokpriku
39	ifpodm	IF LPAR podminka RPAR THEN blokpriku ifelse ENDIF blokpriku
40	ifelse	ELSE blokpriku
41		
42	deklarace	typy IDENT listident SEMICOLON blokpriku
43	typy	INTEGER
44		DOUBLE
45		STRING
46	listident	COMMA IDENT listident
47		
48	konzole	vypis LPAR vyraz RPAR SEMICOLON blokpriku
49	vypis	PRINT
50		PRINTLN
51	znamenka	PLUS
52		MINUS
53		
54	porovnani	EQ
55		NE
56		GT
57		LT
58		GE
59		LE
60	ukonceni	END SEMICOLON blokpriku
61		BREAK SEMICOLON blokpriku

Množina FIRST{}

#	Krok 1	Krok 2	Krok 3	Výsledek	#
1	First(prirazeni)	IDENT		{ IDENT }	1
2	First(forcykl)	FOR		{ FOR }	2
3	First(whilecykl)	WHILE		{ WHILE }	3
4	First(docykl)	DO		{ DO }	4
5	First(ifpodm)	IF		{ IF }	5
6	First(deklarace)		INTEGER, DOUBLE, STRING	{ INTEGER, DOUBLE, STRING }	6
7	First(konsole)		PRINT, PRINTLN	{ PRINT, PRINTLN }	7
8	First(ukonceni)	END, BREAK		{ END, BREAK }	8
9	First(switch)	SELECT		{ SELECT }	9
10	€			{ € }	10
11	First(ndmd)		LPAR, IDENT, PLUS, MINUS, INTEGER_CONST, DOUBLE_CONST	{ LPAR, IDENT, PLUS, MINUS, INTEGER_CONST, DOUBLE_CONST }	11
12	UVOZOVKY			{ UVOZOVKY }	12
13	PLUS			{ PLUS }	13
14	MINUS			{ MINUS }	14
15	€			{ € }	15
16	First(zavrk)	LPAR, IDENT, First(znamenko)	PLUS, MINUS, INTEGER_CONST, DOUBLE_CONST	{ LPAR, IDENT, PLUS, MINUS, INTEGER_CONST, DOUBLE_CONST }	16
17	TIMES			{ TIMES }	17
18	DIVIDED			{ DIVIDED }	18
19	MODULO			{ MODULO }	19
20	INTDIV			{ INTDIV }	20
21	€			{ € }	21
22	LPAR			{ LPAR }	22
23	IDENT			{ IDENT }	23
24	First(znamenko)	PLUS, MINUS	INTEGER_CONST, DOUBLE_CONST	{ PLUS, MINUS, INTEGER_CONST, DOUBLE_CONST }	24
25	INTEGER_CONST			{ INTEGER_CONST }	25
26	DOUBLE_CONST			{ DOUBLE_CONST }	26
27	SELECT			{ SELECT }	27
28	CASE			{ CASE }	28
29	€			{ € }	29
30	DEFAULT			{ DEFAULT }	30
31	€			{ € }	31
32	IDENT			{ IDENT }	32
33	First(vyraz)	LPAR, IDENT, PLUS, MINUS, UVOZOVKY		{ LPAR, IDENT, PLUS, MINUS, INTEGER_CONST, DOUBLE_CONST, UVOZOVKY }	33
34	FOR			{ FOR }	34
35	STEP			{ STEP }	35
36	€			{ € }	36
37	WHILE			{ WHILE }	37
38	DO			{ DO }	38
39	IF			{ IF }	39
40	ELSE			{ ELSE }	40
41	€			{ € }	41
42	First(typy)	INTEGER, DOUBLE, STRING		{ INTEGER, DOUBLE, STRING }	42
43	INTEGER			{ INTEGER }	43
44	DOUBLE			{ DOUBLE }	44
45	STRING			{ STRING }	45
46	COMMA			{ COMMA }	46
47	€			{ € }	47
48	First(vypis)	PRINT, PRINTLN		{ PRINT, PRINTLN }	48
49	PRINT			{ PRINT }	49
50	PRINTLN			{ PRINTLN }	50
51	PLUS			{ PLUS }	51
52	MINUS			{ MINUS }	52
53	€			{ € }	53
54	EQ			{ EQ }	54
55	NE			{ NE }	55
56	GT			{ GT }	56
57	LT			{ LT }	57
58	GE			{ GE }	58
59	LE			{ LE }	59
60	END			{ END }	60
61	BREAK			{ BREAK }	61

## Množina FOLLOW{}

Pravidlo	Krok 1	Krok 2	Krok 3	Krok 4
blokprikazu	€	Follow(switch), First(case), Follow(caseelse), Follow(prirazeni), NEXT, Follow(forstep), WEND, DOWHILE, Follow(whilecykl), Follow(docycl), First(ifelse), Follow(ifpodm), Follow(ifelse), Follow(deklarace), Follow(konsole), Follow(ukonceni)	NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, First(caseelse)	DEFAULT
vyraz		First(porovnani), RPAR, SEMICOLON, Follow(podminka),	EQ, NE, GT, LT, GE, LE	EQ, NE, GT, LT, GE, LE
vyrazc		Follow(vyraz)		RPAR, SEMICOLON, EQ, NE, GT, LT, GE, LE
ndmd		First(vyrazc)	PLUS, MINUS, Follow(vyraz), Follow(vyrazc)	RPAR, SEMICOLON, EQ, NE, GT, LT, GE, LE
ndmdc		Follow(ndmd)		PLUS, MINUS, RPAR, SEMICOLON, EQ, NE, GT, LT, GE, LE
zavrk		First(ndmdc)	TIMES, DIVIDED, MODULO, INTDIV, Follow(ndmd)	RPAR, SEMICOLON, EQ, NE, GT, LT, GE, LE, PLUS, MINUS
hodnota		Follow(zavrk)		TIMES, DIVIDED, MODULO, INTDIV, RPAR, SEMICOLON, EQ, NE, GT, LT, GE, LE, PLUS, MINUS
switch		Follow(blokprikazu)		€, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT
case		First(caseelse)	DEFAULT, Follow(caseelse)	ENDSELECT
caseelse		ENDSELECT		
prirazeni		Follow(blokprikazu)		€, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT
podminka		RPAR		
forcykl		Follow(blokprikazu)		€, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT
forstep		RPAR		
whilecykl		Follow(blokprikazu)		€, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT
docycl		Follow(blokprikazu)		€, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT
ifpodm		Follow(blokprikazu)		€, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT
ifelse		ENDIF		
deklarace		Follow(blokprikazu)		€, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT
typy		IDENT		
listident		SEMICOLON		
konsole		Follow(blokprikazu)		€, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT
vypis		LPAR		
znamenko		First(hodnota), INTEGER_CONST	DOUBLE_CONST	
porovnani		First(vyraz)	LPAR, IDENT, PLUS, MINUS, INTEGER_CONST, DOUBLE_CONST, UVOZOVKY	
ukonceni		Follow(blokprikazu)		€, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT

Pravidlo	Výsledek
blokprikazu	{ €, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT }
vyraz	{ RPAR, SEMICOLON, EQ, NE, GT, LT, GE, LE }
vyrazc	{ RPAR, SEMICOLON, EQ, NE, GT, LT, GE, LE }
ndmd	{ PLUS, MINUS, RPAR, SEMICOLON, EQ, NE, GT, LT, GE, LE }
ndmdc	{ PLUS, MINUS, RPAR, SEMICOLON, EQ, NE, GT, LT, GE, LE }
zavrk	{ TIMES, DIVIDED, MODULO, INTDIV, RPAR, SEMICOLON, EQ, NE, GT, LT, GE, LE, PLUS, MINUS }
hodnota	{ TIMES, DIVIDED, MODULO, INTDIV, RPAR, SEMICOLON, EQ, NE, GT, LT, GE, LE, PLUS, MINUS }
switch	{ €, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT }
case	{ ENDSELECT, DEFAULT }
caseelse	{ ENDSELECT }
prirazeni	{ €, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT }
podminka	{ RPAR }
forcykl	{ €, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT }
forstep	{ RPAR }
whilecykl	{ €, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT }
docycl	{ €, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT }
ifpodm	{ €, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT }
ifelse	{ ENDIF }
deklarace	{ €, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT }
typy	{ IDENT }
listident	{ SEMICOLON }
konsole	{ €, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT }
vypis	{ LPAR }
znamenko	{ INTEGER_CONST, DOUBLE_CONST }
porovnani	{ LPAR, IDENT, PLUS, MINUS, INTEGER_CONST, DOUBLE_CONST, UVOZOVKY }
ukonceni	{ €, NEXT, CASE, ENDSELECT, WEND, DOWHILE, ELSE, ENDIF, DEFAULT }

## Tabulka přechodů – Rozkladová tabulka – LL(1)

**Tabulka 1: Černě: FIRST, červeně FOLLOW**