

Figure 1. P-Code Assembler Block Diagram

Example:

\$ pasm prime.pcd

L00004	ent	sp	L00005
	ent	ep	L00006
	lda	0	6
	ldc	i	3
	sti	i	
	lda	0	7
	lvi	0	5
	csp		sqt
	trc		
	sti	i	
L00007			
	lvi	0	6
	lvi	0	7
	leq	i	
	lvi	0	5
	lvi	0	6
	mod		
	ldc	i	0
	equ	i	
	and		
	fjp		L00008
	lda	0	6
	lvi	0	6
	ldc	i	2
	adi		
	sti	i	
	ujp		L00007
L00008			
	lda	0	0
	lvi	0	5
	lvi	0	6
	mod		
	ldc	i	0
	neq	i	
	sti	b	
	rtn	b	
#define	L00005	7	
#define	L00006	3	

Figure 2. File prime.pcd

L00001	ent	sp	L00002
	ent	ep	L00003
	ldc	i	2
	ldc	i	5
	csp		wri
	lda	0	5
	ldc	i	1
	sti	i	
	lda	0	6
	ldc	i	3
	sti	i	
L00013			
	lvi	0	5
	ldc	i	100
	les	i	
	fjp		L00014
	mst	0	
	lvi	0	6
	cup	1	L00004
	fjp		L00011
	lvi	0	6
	ldc	i	5
	csp		wri
	lda	0	5
	lvi	0	5
	ldc	i	1
	adi		
	sti	i	
	lvi	0	5
	ldc	i	10
	mod		
	ldc	i	0
	equ	i	
	fjp		L00009
	csp		wln
	ujp		L00010
L00009			
L00010			
	ujp		L00012
L00011			
L00012			
	lda	0	6
	lvi	0	6
	ldc	i	2
	adi		
	sti	i	
	ujp		L00013
L00014			
	csp		wln
	rtn	p	

Figure 2. File prime.pcd (continued)

#define	L00002	6	
#define	L00003	7	
	mst	0	
	cup	0	L00001
	stp		

Figure 2. File prime.pcd (continued)

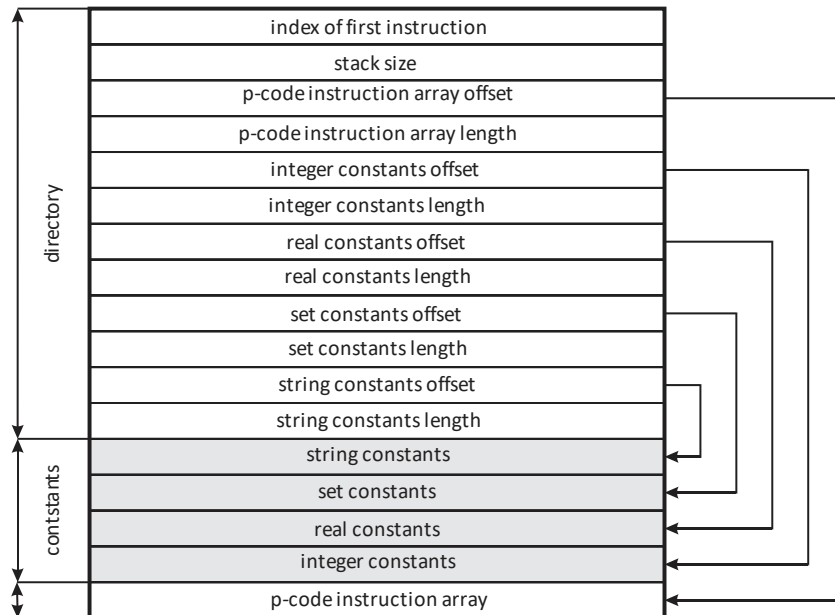


Figure 3. Anatomy of a P-Machine Executable File

Directory	
start=	78 instruction address of first instruction
ssize=	1024 stack size
doffset=	0 directory offset
dsize=	48 directory size
scoffset=	48 string constants offset
scsize=	0 string constants size
tcoffset=	0 set constants offset
tcsiz=	0 set constants size
rcoffset=	48 real constants offset
rcsize=	0 real constants size
icsize=	28 integer constants size
iaoffset=	76 instruction array offset
iasize=	324 instruction array size

Figure 4. File prime.alst

String Constants			
Index	Constant		
Set Constants			
Index	Constant		
Real Constants			
Index	Constant		
Integer Constants			
Index	Constant		
0	3		
1	0		
2	2		
3	5		
4	1		
5	100		
6	10		
P-Code Instruction Array			
PC	OP	R1	R2
0	ent(02)	sp(00)	7(0007)
1	ent(02)	ep(01)	3(0003)
2	lda(31)	0(00)	6(0006)
3	ldc(32)	i(03)	0(0000)
4	sti(3a)	i(03)	0(0000)
5	lda(31)	0(00)	7(0007)
6	lvi(37)	0(00)	5(0005)
7	csp(01)	0(00)	sqt(000c)
8	trc(2c)	0(00)	0(0000)
9	sti(3a)	i(03)	0(0000)
10	lvi(37)	0(00)	6(0006)
11	lvi(37)	0(00)	7(0007)
12	leq(0a)	i(03)	0(0000)
13	lvi(37)	0(00)	5(0005)
14	lvi(37)	0(00)	6(0006)
15	mod(10)	0(00)	0(0000)
16	ldc(32)	i(03)	1(0001)
17	equ(05)	i(03)	0(0000)
18	and(1d)	0(00)	0(0000)
19	fjp(28)	0(00)	25(0019)
20	lda(31)	0(00)	6(0006)
21	lvi(37)	0(00)	6(0006)
22	ldc(32)	i(03)	2(0002)
23	adi(0b)	0(00)	0(0000)
24	sti(3a)	i(03)	0(0000)
25	ujp(26)	0(00)	9(0009)
26	lda(31)	0(00)	0(0000)
27	lvi(37)	0(00)	5(0005)
28	lvi(37)	0(00)	6(0006)
29	mod(10)	0(00)	0(0000)
30	ldc(32)	i(03)	1(0001)

Figure 4. File prime.alst (continued)

P-Code Instruction Array			
PC	OP	R1	R2
31	neq(06)	i(03)	0(0000)
32	sti(3a)	b(01)	0(0000)
33	rtn(04)	b(01)	0(0000)
34	ent(02)	sp(00)	6(0006)
35	ent(02)	ep(01)	7(0007)
36	ldc(32)	i(03)	2(0002)
37	ldc(32)	i(03)	3(0003)
38	csp(01)	0(00)	wri(0007)
39	lda(31)	0(00)	5(0005)
40	ldc(32)	i(03)	4(0004)
41	sti(3a)	i(03)	0(0000)
42	lda(31)	0(00)	6(0006)
43	ldc(32)	i(03)	0(0000)
44	sti(3a)	i(03)	0(0000)
45	lvi(37)	0(00)	5(0005)
46	ldc(32)	i(03)	5(0005)
47	les(09)	i(03)	0(0000)
48	fjp(28)	0(00)	75(004b)
49	mst(03)	0(00)	0(0000)
50	lvi(37)	0(00)	6(0006)
51	cup(00)	1(01)	0(0000)
52	fjp(28)	0(00)	69(0045)
53	lvi(37)	0(00)	6(0006)
54	ldc(32)	i(03)	3(0003)
55	csp(01)	0(00)	wri(0007)
56	lda(31)	0(00)	5(0005)
57	lvi(37)	0(00)	5(0005)
58	ldc(32)	i(03)	4(0004)
59	adi(0b)	0(00)	0(0000)
60	sti(3a)	i(03)	0(0000)
61	lvi(37)	0(00)	5(0005)
62	ldc(32)	i(03)	6(0006)
63	mod(10)	0(00)	0(0000)
64	ldc(32)	i(03)	1(0001)
65	equ(05)	i(03)	0(0000)
66	fjp(28)	0(00)	68(0044)
67	csp(01)	0(00)	wln(000b)
68	ujp(26)	0(00)	68(0044)
69	ujp(26)	0(00)	69(0045)
70	lda(31)	0(00)	6(0006)
71	lvi(37)	0(00)	6(0006)
72	ldc(32)	i(03)	2(0002)
73	adi(0b)	0(00)	0(0000)
74	sti(3a)	i(03)	0(0000)
75	ujp(26)	0(00)	44(002c)
76	csp(01)	0(00)	wln(000b)
77	rtn(04)	p(07)	0(0000)
78	mst(03)	0(00)	0(0000)
79	cup(00)	0(00)	33(0021)
80	stp(30)	0(00)	0(0000)

Figure 4. File prime.alst (continued)

Label Table				
Label	Address	Resolved	Reference	List
L00004	0	true	51	
L00005	7	true	0	
L00006	3	true	1	
L00007	9	true	25	
L00008	25	true	19	
L00001	33	true	79	
L00002	6	true	34	
L00003	7	true	35	
L00013	44	true	75	
L00014	75	true	48	
L00011	69	true	52	
L00009	68	true	66	

Figure 4. File prime.alst (continued)