```
hw06-LET-output
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   [dshin@acacia let]$ Let /home/pl/hw06/tests/const-negative
2 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
4 % negative constant. (value=-27)
5
6
10
  [dshin@acacia let]$ Let /home/pl/hw06/tests/const-positive
12 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
14 % positive constant. (value=12)
15
16
17
18
19
20
21
   [dshin@acacia let]$ Let /home/pl/hw06/tests/diff-1
  Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
  % diff. where env=[i=1.v=5.x=10]. (value=9)
25
26
   -(x,1)
27
   %
28
  q
29
30
  [dshin@acacia let]$ Let /home/pl/hw06/tests/diff-2
32 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
  > & ______
  % diff, where env=[i=1, v=5, x=10]. (value=3)
35
36
37
38
  39
40
   [dshin@acacia let] Let /home/pl/hw06/tests/diff-error-1
  Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
  % diff, where env=[i=1, v=5, x=10]. (value=error)
45
   -(zero?(0),x)
  expval->num: arg=#(struct:bool-val #t)
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/value.scm:13:17
   : (eopl:error (quote expval->num) "arg=~a" val)
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:37:30:
   (- (expval->num (value-of expl env)) (expval->num (value-of exp2 env)))
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:37:21:
   (num-val (- (expval->num (value-of exp1 env)) (expval->num (value-of exp2 env)))
   /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:23:4:
   let-values (((val) (value-of-1 exp env))) (trace-run-exit val) val)
   /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:7:28:
   expval->string (run string))
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:7:15:
   format "~a" (expval->string (run string)))
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:7:6: (d
   isplay (format "~a" (expval->string (run string))))
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:5:4: (1
   et-values (((string) (readfile file))) (display string) (display (format "~a" ((
   ....) ....))) (newline))
```

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57		
58 59	=== context ===	
60	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.sealue-of-1	cm:28:2: v
61	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scalue-of	cm:21:2: v
62 63	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.senfile	cm:4:2: ru
64	>	
65 66	[dshin@acacia let]\$ Let /home/pl/hw06/tests/diff-error-2 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.	
67 68	> %% diff, where env=[i=1,v=5,x=10]. (value=error)	====
69 70	-(x,zero?(0))	
71 72	<b>%</b>	
72	expval->num: arg=#(struct:bool-val #t)	
74	/home/dshin/2012-ea0011-pl/eop13-programs/eop13-interpreters/let/value : (eop1:error (quote expval->num) "arg=~a" val)	.scm:13:17
75	/home/dshin/2012-ea0011-p1/eopl3-programs/eopl3-interpreters/let/run.s (- (expval->num (value-of expl env)) (expval->num (value-of exp2 env))	
76	/home/dshin/2012-ea0011-pl/eop13-programs/eop13-interpreters/let/run.sc (num-val (- (expval->num (value-of exp1 env)) (expval->num (value-of exp1))	cm:37:21:
77	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.selet-values (((val) (value-of-1 exp env))) (trace-run-exit val) val)	
78	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.sexpval->string (run string))	
79	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.seformat "~a" (expval->string (run string)))	
80	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.srisplay (format "~a" (expval->string (run string))))	
81	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.set-values (((string) (readfile file))) (display string) (display (form)))) (newline))	
82		
83 84	=== context ===	
85	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.sealue-of-1	cm:28:2: v
86	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scalue-of	cm:21:2: v
87	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.sunfile	cm:4:2: ru
88		
89 90	<pre>   </pre>	
91 92	Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.	====
93 94	% nested diff. (-11)	
95 96	-(-(44,33),22)	
97 98	\$	==
99	>	
100 101	[dshin@acacia let] \$ Let /home/pl/hw06/tests/diff-nested-right Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.	
102 103	> %% nested diff. (44)	====
104 105	-(55,-(22,11))	
106		

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107	8	=
108	44 >	
109 110	[dshin@acacia let]\$ Let /home/pl/hw06/tests/if-error	
111	Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.	
112	> % ===================================	===
113 114	% if with non bool checking. (error)	
114	if 1 then 2 else 3	
116		
117	<b>8</b>	=
118 119 120	<pre>expval-&gt;bool: arg=#(struct:num-val 1) /home/dshin/2012-ea0011-p1/eop13-programs/eop13-interpreters/let/value. : (eop1:error (quote expval-&gt;bool) "arg=~a" val) /home/dshin/2012-ea0011-p1/eop13-programs/eop13-interpreters/let/run.sc</pre>	
121	(if (expval->bool (value-of expl env)) (value-of exp2 env) (value-of exp4 home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.sc	p3 env))
122	<pre>let-values (((val) (value-of-1 exp env))) (trace-run-exit val) val) /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.sc</pre>	
123	expval->string (run string)) /home/dshin/2012-ea0011-pl/eop13-programs/eop13-interpreters/let/run.sc	m:7:15:
124	<pre>format "-a" (expval-&gt;string (run string))) /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.sc isplay (format "-a" (expval-&gt;string (run string))))</pre>	m:7:6: (d
125	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.sc et-values (((string) (readfile file))) (display string) (display (forma)))) (newline))	
126	, , , , , , , , , , , ,	
127		
128 129	=== context === /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.sc alue-of-1	m:28:2: v
130	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.sc alue-of	
131	/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.sc nfile	m:4:2: rı
133	>	
134 135	[dshin@acacia let]\$ Let /home/pl/hw06/tests/if-false-1 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.	
136	> %% if conditional. (value=4)	===
138 139 140	if zero?(1) then 3 else 4	
141	<b>%</b>	=
142	4	
143		
144 145	[dshin@acacia let]\$ Let /home/pl/hw06/tests/if-false-2 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.	
146	> % ===================================	===
147 148	% if conditional where false exp is not evaluated. (value=3)	
149 150	if zero?(0) then 3 else foo	_
151 152 153	3 >	_
154 155	[dshin@acacia let]\$ Let /home/pl/hw06/tests/if-true-1 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.	
156 157	> %% if conditional. (value=3)	===
158 159 160	if zero?(0) then 3 else 4	
161	<b>%</b>	=

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163 >
  [dshin@acacia let]$ Let /home/pl/hw06/tests/if-true-2
165 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
  % if conditional where true exp is not evaluated. (value=3)
  if zero?(1) then foo else 3
170
171
174 [dshin@acacia let]$ Let /home/pl/hw06/tests/let
175 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
177 % let. (value=3)
179 let x=3
180 in x
181
184
  [dshin@acacia let]$ Let /home/pl/hw06/tests/let-body
186 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
  % make sure the let body is evaluated. (value=7)
190 let x=8 in -(x,1)
191
192
  [dshin@acacia let]$ Let /home/pl/hw06/tests/let-nested
196 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
  198 % nested let make lexical scoping. p66. (value=3)
200 let z=5
201 in let x=3
     in let v=-(x,1)
202
       in let x=4
204
          in -(z, -(x, y))
205
206
207
208
  [dshin@acacia let] $ Let /home/pl/hw06/tests/let-shadow-body
210 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
212 % shadowing in let. (value=4)
214 let x=3
215 in let x=4
217
   8
218
219
220
221 [dshin@acacia let] $ Let /home/pl/hw06/tests/let-shadow-rhs
222 Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
224 % shadowing in let. (value=2)
225
226 let x=3
227 in let x=-(x,1)
```

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     in x
229
230
231
232
233
   [dshin@acacia let]$ Let /home/pl/hw06/tests/let-var
  Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
234
  > % -----
235
  % make sure the let var is evaluated. (value=7)
236
237
  let x=-(8.1) in x
  2
240
241
242
243
   [dshin@acacia let]$ Let /home/pl/hw06/tests/variable
   Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
  245
  % variable, where env=[i=1,v=5,x=10]. (value=10)
246
247
248
250
  1.0
251
252
   [dshin@acacia let]$ Let /home/pl/hw06/tests/variable-error-1
253
   Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
  255
   % unbound variable, where env=[i=1,v=5,x=10]. (value=error)
256
257
258
  foo
  %
261 apply-env: undefined foo
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/env.scm:13:22:
   (eopl:error (quote apply-env) "undefined ~a" search-sym)
   /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:23:4:
   let-values (((val) (value-of-1 exp env))) (trace-run-exit val) val)
   /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:7:28:
   expval->string (run string))
   /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:7:15:
   format "~a" (expval->string (run string)))
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:7:6: (d
   isplay (format "~a" (expval->string (run string))))
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:5:4: (1
   et-values (((string) (readfile file))) (display string) (display (format "~a" ((
   ....) ....))) (newline))
268
   === context ===
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:21:2: v
272 /home/dshin/2012-ea0011-pl/eop13-programs/eop13-interpreters/let/run.scm:4:2: ru
  nfile
273
274 >
   [dshin@acacia let]$ Let /home/pl/hw06/tests/variable-error-2
275
   Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
  277
  % unbound variable, where env=[i=1,v=5,x=10]. (value=error)
278
279
   -(x, foo)
281
apply-eny: undefined foo
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/env.scm:13:22:
```

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   (eopl:error (quote apply-env) "undefined ~a" search-sym)
/home/dshin/2012-ea0011-pl/eop13-programs/eop13-interpreters/let/run.scm:23:4: (
   let-values (((val) (value-of-1 exp env))) (trace-run-exit val) val)
/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:38:33:
    (expval->num (value-of exp2 env))
   /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:37:30:
   (- (expval->num (value-of expl env)) (expval->num (value-of exp2 env)))
   /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:37:21:
   (num-val (- (expval->num (value-of exp1 env)) (expval->num (value-of exp2 env)))
   /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:23:4: (
   let-values (((val) (value-of-1 exp env))) (trace-run-exit val) val)
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:7:28: (
   expval->string (run string))
   /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:7:15: (
   format "~a" (expval->string (run string)))
   /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:7:6: (d
   isplay (format "~a" (expval->string (run string))))
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:5:4: (1
   et-values (((string) (readfile file))) (display string) (display (format "~a" ((
   ....) ....))) (newline))
    === context ===
   /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:21:2: v
  /home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:28:2: v
   alue-of-1
/home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:21:2: v
   alue-of
// home/dshin/2012-ea0011-pl/eopl3-programs/eopl3-interpreters/let/run.scm:4:2: ru
   nfile
301
302
   [dshin@acacia let]$ Let /home/pl/hw06/tests/zero-false
   Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
  > 2 ______
  % zero? (value=#f)
307
308 zero? (37)
   %
311 #f
312
   [dshin@acacia let]$ Let /home/pl/hw06/tests/zero-true
   Welcome to MzScheme v372 [3m], Copyright (c) 2004-2007 PLT Scheme Inc.
% zero? (value=#t)
316
317
318 zero? (0)
323 [dshin@acacia let]$
```