

# Tarea 07 - Análisis Léxico

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## Problema 4

### Sintaxis del lenguaje:

Sintaxis Abstracta	Sintaxis Concreta
Expression := Number	const-exp(num)
Expression := Boolean	const-exp(bool)
Expression := - (Expression, Expression)	diff-exp (left right)
Expression := zero? (Expression)	zero?-exp (exp)
Expression := if Expression then Expression else Expression	if-exp (condi then else)
Expression := Identifier	var-exp(var)
Expression := let Identifier = Expression in Expression	let-exp (var val body)

### Semántica del lenguaje:

#### Valores:

Valores expresados	Valores denotados
ExpVal = Int + Bool	DenVal = Int + Bool

#### Entornos:

env es un entorno.

(extend-env var val env) agrega un valor al entorno.

(apply-env var env) busca un identificador *var* en el entorno y al encontrarlo regresa su valor.

#### Comportamiento:

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```
(value-of (const-exp n) env) = (num-val n)
```

```
(value-of (var-exp var) env) = (apply-env env var)
```

```
(value-of (diff-exp var) env) =  
  (num-val (- (expval->num (value-of left))  
              (expval->num (value-of right))))
```

```
(value-of (zero? exp) env) =  
  (bool-val #t) si (exp-val->num exp) = 0  
  (bool-val #f) en otro caso
```

```
(value-of (if-exp condi then else) env) =  
  (value-of then env) si (expval->bool condi) = #t  
  (value-of else env) si (expval->bool condi) = #f  
  
(value-of (let-exp var val body) env) =  
  (value-of body (extend-env var val env))
```

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