Talleres

workshops

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***Resumen*— en este paper se encuentra la solución de todos los talleres planteados en clase para resolver en Lisp, para lo cual se agregan imágenes del código y el resultado del programa una vez este se a compilado.**

***Palabras clave*— Lisp, funciones, inteligencia artificial, ia, manejo de listas.**

***Abstract*— In this paper you will find the solution of all the workshops raised in class to solve in Lisp, for which images of the code are added and the result of the program once it has been compiled.**

***Key Word* —lisp, functions, artificial intelligence, IA, list management.**

I. CONTENIDO

Taller 1:

```
1  (print(* (/ (+ 3 3)(- 4 4))(* 0 9)))
```

```
$clisp main.lisp
*** - /: division by zero
```

```
1  (print(+(* 3 (- 5 3))(/ 8 4)))
```

```
$clisp main.lisp

8
```

```
1  (print(* 3 2 2 (- 8 5)))
```

```
$clisp main.lisp

36
```

```
1  (print ((*)(* 2 (- 4 2))(/ 8 2)))
```

```
$clisp main.lisp
*** - EVAL: (*) is not a function name; try using a symbol instead
```

```
1  (print (*(* 2 (- 4 2))(/ 8 2)))
```

```
$clisp main.lisp

16
```

```
1  (print (sqrt (abs(- 71(expt(+ 2 4) 4)))))
```

```
$clisp main.lisp

35
```

```
1  (print '( '+ '1    '(* 2 4)))
```

```
$clisp main.lisp

('+ '1 '(* 2 4))
```

```
1  (print (expt(mod 5 3)(abs(- 8 9))))
```

```
$clisp main.lisp

2
```

```
1  (print (quote(NIL 'NIL T 'T)))
```

```
$clisp main.lisp

(NIL 'NIL T 'T)
```

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Fecha de Aceptación: Dejar en blanco

```
1  (print (log(expt 2 (- 15 5 4))))
```

```
$clisp main.lisp

4.158883
```

```
1  (print (quote(quote(Hello ByeBye))))
```

```
$clisp main.lisp

'(HELLO BYEBYE)
```

TALLER 2:

```
(setq A 4 B 6 C 5 X ( + A B) Y ( - B C ) Z (MAX A C))

(print (+ A B C))
(print (EVAL X))
(print (EVAL Y))
(print (EVAL Z))
```

```
$clisp main.lisp

15
10
1
5
```

TALLER 3:

```
(SETQ A 4 B 6 C 5 X ( + A B) Y ( - B C) Z (MAX A C))

(print(+ (* C Z) B C))
(print(abs(+(*(- Z X A) -100) B)))
(print (* (+ (* C X)(- A Z C)) 2 Y))
```

```
$clisp main.lisp

36
906
88
```

```
(SETQ A 4 B 6 C 5 X ( + A B) Y ( - B C) Z (MAX A C))

(SETQ M ( + Z A) N ( - Y C) P (* 2 Z))

(print(+ M Z X Y P B N))
(print(- (- (* 3 Z)(/ 100 C)) A C N P))
```

```
$clisp main.lisp

37
-20
```

TALLER 4:

```
(print (cons(car '(axl wil rich))(cdr '(Este anto alla))))
```

```
$clisp main.lisp

(AXL ANTO ALLA)
```

```
(print (cons(cdar '((cons go up)))(third '(we find(all fine
    )))))
```

```
$clisp main.lisp

((GO UP) ALL FINE)
```

```
(print (car(cdr(car(cdr '((a b)(c d)(e f)))))))
```

```
$clisp main.lisp

D
```

```
(print (car(car(cdr(cdr '((a b)(c d)(e f)))))))
```

```
$clisp main.lisp

E
```

```
(print (car(car(cdr'(cdr ((a b)(c d)(e f)))))))
```

```
$clisp main.lisp

(A B)
```

```
(print '(car(car(cdr(cdr ((a b)(c d)(e f)))))))
```

```
$clisp main.lisp

(CAR (CAR (CDR (CDR ((A B) (C D) (E F))))))
```

```
1  (print (cons (car NIL) (cdr nil)))
```

```
$clisp main.lisp
```

```
(NIL)
```

```
(print (cdr(car(cdr(car '((D (E F)) G (H I))))))
```

```
$clisp main.lisp
```

```
(F)
```

```
(SETQ A '(+ 3 6))
(print(cdr A))
(print(car(cdr A)))
(print(car(cdr(cdr A))))
```

```
$clisp main.lisp
```

```
(3 6)
3
6
```

TALLER 5:

```
(setq animals'(Oso Gato Mapache Ardilla))
(print(car (cdr (cdr animals))))
```

```
$clisp main.lisp
```

```
MAPACHE
```

```
(setq animals'((oso gato)(mapache ardilla)))
(print(car (car (cdr animals))))
```

```
$clisp main.lisp
```

```
MAPACHE
```

```
(setq animals'((oso) (gato)(mapache) (ardilla)))
(print(car (cdr (cdr animals))))
```

```
$clisp main.lisp
```

```
(MAPACHE)
```

```
(setq animals'(oso (gato)((mapache)) (((ardilla)))))
(print(car(car(car(cdr (cdr animals))))))
```

```
$clisp main.lisp
```

```
MAPACHE
```

TALLER 6:

```
(SETQ A '(MANAGUA CHINANDEGA RIVAS LEON BOACO ))
(PRINT (CAR(CDR(CDR (CDR A)))))

(SETQ B '((MANAGUA)(CHINANDEGA RIVAS LEON) BOACO))
(PRINT (CAR (CDR(CDR(CAR(CDR B))))))

(SETQ C '(MANAGUA (CHINANDEGA (RIVAS LEON BOACO))))
(PRINT (CAR(CDR(CAR (CDR (CAR (CDR C)))))))

(SETQ D '(DEPORTES (BEISBOL TENIS)((FUTBOL) BILLAR)))
(PRINT (CAR (CAR (CAR (CDR(CDR D))))))
```

```
$clisp main.lisp
```

```
LEON
LEON
LEON
FUTBOL
```

TALLER 7:

```
(print(cons(second '(leo mana china))(cons(list(car '(1 2 3 4
   ))(cdr '(A B C D)))'2)))
```

```
$clisp main.lisp
```

```
(MANA (1 (B C D)) . 2)
```

```
(print(list (list '(ca ce)(last '(0 a 1 b ci)(third '(5 4 3
   2 1)))(nth 3 '(pa pe pi po pu)))))
```

```
$clisp main.lisp
```

```
(((CA CE) (1 B CI) PO))
```

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```
(print (list (append '(H O L A) '(M U N D O))(cddr '(
    arroz pollo))(car '(buen mal))(caddr '(desayuno r
    almuerzo cena))))
```

```
$clisp main.lisp

((H O L A M U N D O) (ARROZ POLLO) BUEN ALMUERZO)
```

```
(print (list '(¿como estas?)(nth 0 '(bien mal rematado
    ))(append(car '((estas) estoy))(cdr '(entiendo
    entendiendo lisp)))))
```

```
$clisp main.lisp

((¿COMO ESTAS?) BIEN (ESTAS ENTENDIENDO LISP))
```

```
(print(length(cons(car '(verdad mentira falso))(list* 'es
    'muy '(facil)))))
```

```
$clisp main.lisp

4
```

```
(print(cdr(list(subseq '(z y x w v) 0 2)(cons '(a e i) '(o u
    )))))
```

```
$clisp main.lisp

(((A E I) O U))
```

TALLER 8:

```
(SETQ paises '((Nicaragua.Managua)(Italia.Roma)(España.Madrid
    )))

(print (List 'Nicaragua 'Italia 'España(SUBLIS paises '
    (Nicaragua Italia España))(nth 1 '(eran son seran))(car
    (nthcdr 1(cdr '(pueblos estados capitales barrios
    ))))(cons 'de (cons 'estos(cons 'paises NIL)))))
```

```
$clisp main.lisp

(NICARAGUA ITALIA ESPAÑA (NICARAGUA ITALIA ESPAÑA) SON CAPITALES
 (DE ESTOS PAISES))
```

TALLER 9:

```
(SETQ PALABRAS '(GRANDE BONITO FELIZ HUMEDO))
(SETQ SINONIMOS '(ALTO BELLO CONTENTO MOJADO))
(SETQ ANTONIMOS '(PEQUEÑO FEO TRISTE SECO))
(SETQ INGLES '(BIG BEAUTIFUL HAPPY HUMID))

(SETQ PASI(PAIRLIS PALABRAS SINONIMOS))
(SETQ PAAN(PAIRLIS PALABRAS ANTONIMOS))
(SETQ PAIN(PAIRLIS PALABRAS INGLES))

(PRINT (CDR(ASSOC 'GRANDE PASI)))
(PRINT (CDR(ASSOC 'FELIZ PAAN)))
(PRINT (FIRST(ASSOC 'HUMEDO(ACONS 'PAL 'ANTO PAAN))))
(PRINT (LAST(CONS(LENGTH(ACONS 'LENGUAJE 'INGLES PAIN))(CONS
    '(AGREGANDO)(CONS '(PALABRAS)(LIST '(ALA) '(LISTA-ASOC
    )))))))
```

```
$clisp main.lisp

ALTO
TRISTE
HUMEDO
((LISTA-ASOC))
```

1. Las notas de pie de página deberán estar en la página donde se citan. Letra Times New Roman de 8 puntos