CS 161 – AI

Week 0.1

Types:

1. Thinking Humanly
2. Act Humanly: Mechanical Turk
   1. 18th Century AI
   2. Beat Napoleon and Benjamin Franklin Chess
   3. Turing Test
      1. Natural Language Processing
      2. Knowledge Representation
      3. Automated Reasoning
      4. Machin Learning

Current Definition of AI:

The study of intelligent, rational agents

1. Perception/ sensing

Rational Agent

Expected: Not perfect

No mention of humanly

W 1.1

LISP

( operator arg1 arg2…)

Ex: ( + 5 3 2) = 10

( +) = 0 , ( \*)= 1 , ( / )= error

Linked list:

( a (b c) d) : (b c) are not in the original series

( 1 2) : ( cons 1 ( cons 2 NIL) )

L = ( a (b c) d e)

Retrieve a : ( car L)

Retrieve b: ( Car ( car (cdr L)) )

Retrieve c: car cdr car cdr L

( NOT (> 3 1)) : TRUE

( Equal 3 ( + 1 2 ) ): true

Conditional

( cond ([if] ) (else if) (else if)… )

Ex: ( cond ( = x 0 ) 0)

( > x 0) pos)

(t neg )

* Function for square of a number

( defun square ( x )

( \* x x ))

Function for absolute Value:

(defun abs (x)

( cond ( = x 0 ) 0)

( > x 0) x)

(t -x )))

( defun f ( x y)

(let ((a ( + 1 () \* x y))) //defining a var: a = 1+ xy

( defun odd ( x)

(cond (( = x 0) NIL ) //base cases

((= x 1) t )

(( < x 0) (odd ( + x 2))

(t (odd (- x 2))))

Function that gives the last element of a list:

( defun last (L)

( cond (( null (cdr L)) (car L)) // if the last is null, return car L

( t ( last (cdr L))))