Name: Dakshitha Suriyaaratchie
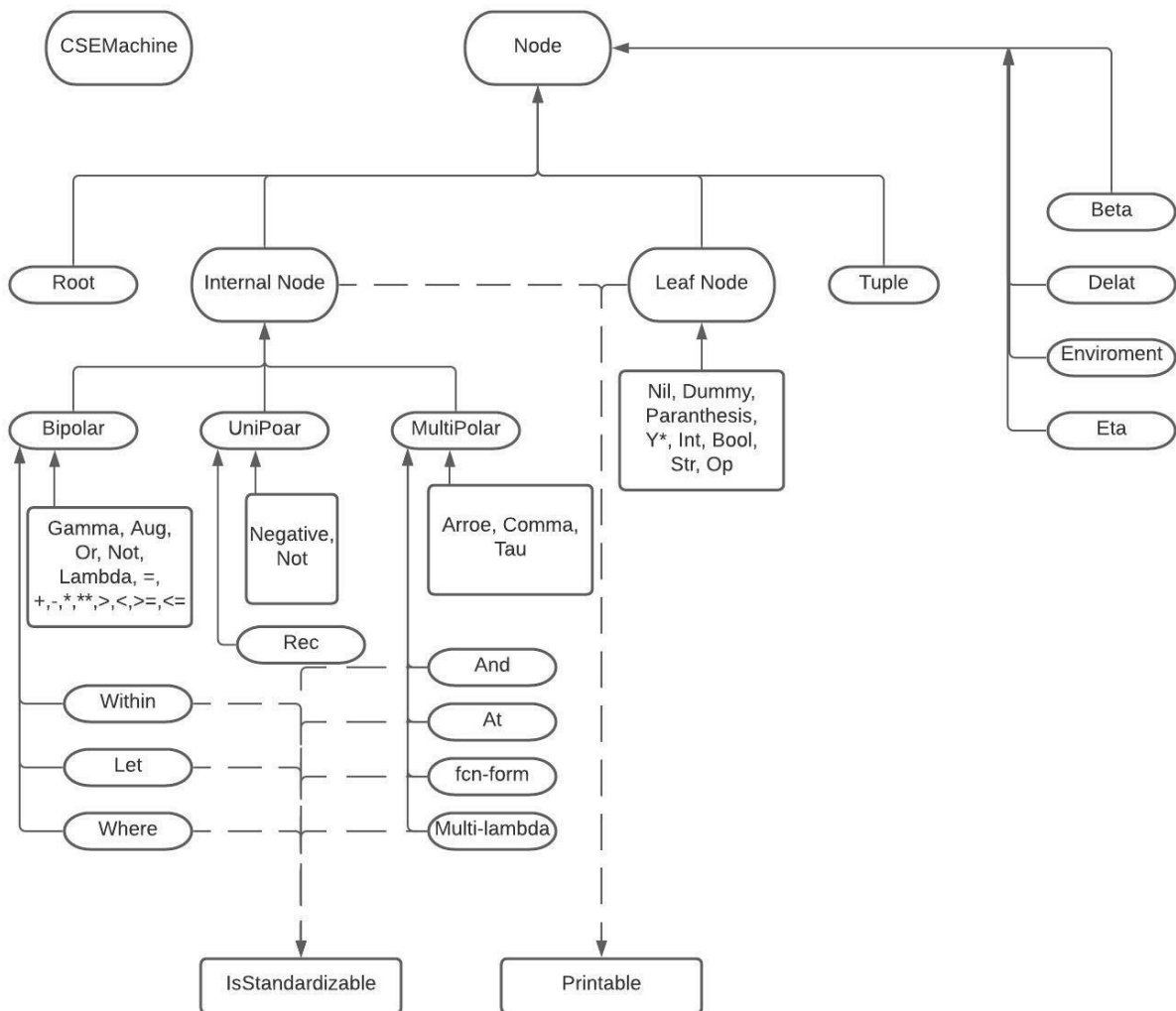
Index No : 180626A

CS 3512 - Programming Languages Programming Project 01

Input format: java Myrpal <filename> [-st] [-ast]

; -st , -ast is optional. It used to generate abstract syntax tree & Standardize tree

The basic Structure of the program as follows;

➢ In Myrpal class – read input file, Create abstract syntax tree, Standardize abstract syntax tree
➢ In CSEMacgine class – evaluate the standardize tree

Testing

This code has been tested for 37 sample test cases.

Sample Input: Myrpal <given example> -st -ast

Output:

```
let
|-- function_form
|   |-- Sum
|   |-- A
|   |__ where
|       |-- gamma
|       |   |-- Psum
|       |   |__ tau
|       |       |-- A
|       |       |__ gamma
|       |           |-- Order
|       |           |__ A
|       |__ rec
|           |__ function_form
|               |-- Psum
|               |-- ,
|               |   |-- T
|               |   |__ N
|               |__ ->
|                   |-- eq
|                   |   |-- N
|                   |   |__ 0
|                   |-- 0
|                   |__ +
|                       |-- gamma
|                       |   |-- Psum
|                       |   |__ tau
|                       |       |-- T
|                       |       |__ -
|                       |           |-- N
|                       |           |__ 1
|                       |__ gamma
|                           |-- T
|                           |__ N
|__ gamma
    |-- Print
    |__ gamma
        |-- Sum
        |__ tau
            |-- 1
            |-- 2
            |-- 3
            |-- 4
            |__ 5
```

```
gamma
|-- lambda
|    |-- Sum
|    |__ gamma
|        |-- Print
|        |__ gamma
|            |-- Sum
|            |__ tau
|                |-- 1
|                |-- 2
|                |-- 3
|                |-- 4
|                |__ 5
|__ lambda
     |-- A
     |__ gamma
         |-- lambda
         |    |-- Psum
         |    |__ gamma
         |        |-- Psum
         |        |__ tau
         |            |-- A
         |            |__ gamma
         |                |-- Order
         |                |__ A
         |__ gamma
             |-- Y*
             |__ lambda
                 |-- Psum
                 |__ lambda
                     |-- ,
                     |    |-- T
                     |    |__ N
                     |__ ->
                         |-- eq
                         |   |-- N
                         |   |__ 0
                         |-- 0
                         |__ +
                             |-- gamma
                             |   |-- Psum
                             |   |__ tau
                             |       |-- T
                             |       |__ -
                             |           |-- N
                             |           |__ 1
                             |__ gamma
                                 |-- T
                                 |__ N
```