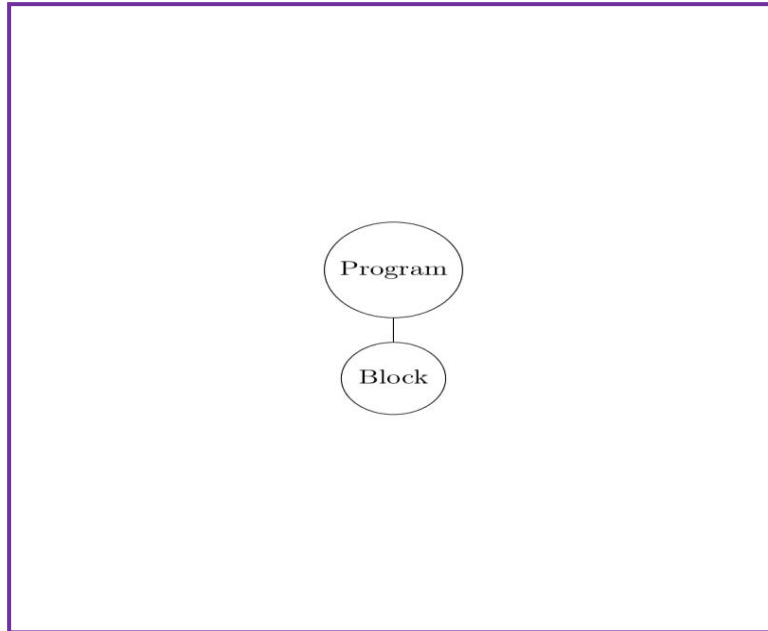
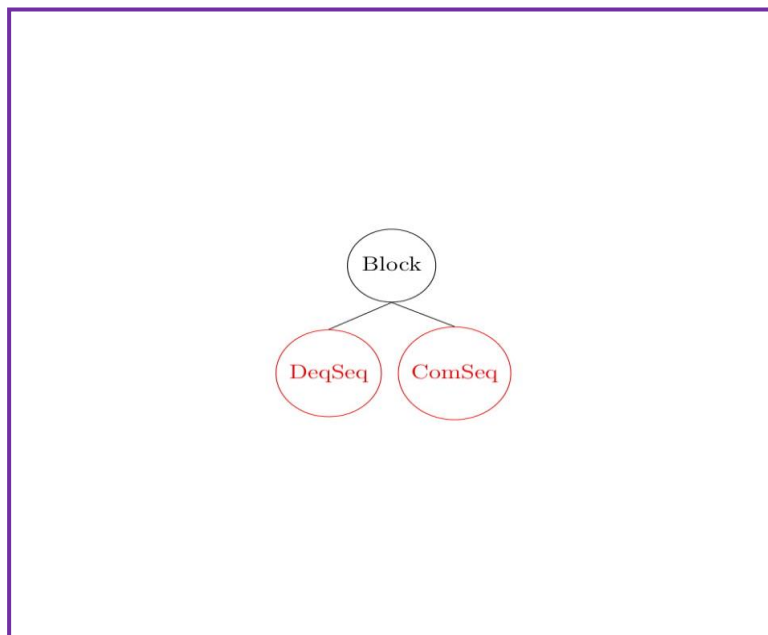


VEN: Abstract Syntax Tree

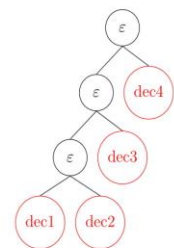
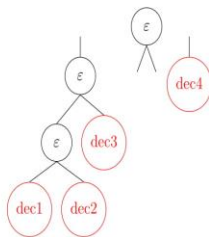
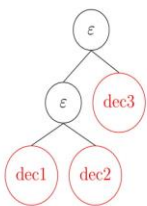
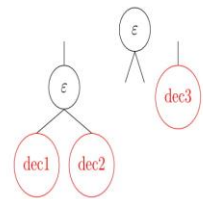
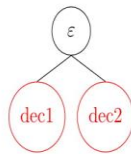
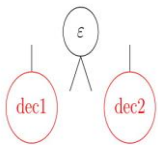
Program \leftarrow Program(Block)



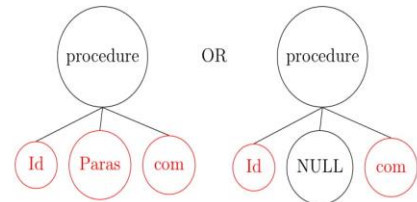
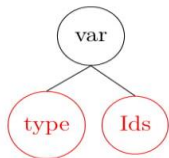
Block \leftarrow Block(Declseq , ComSeq)



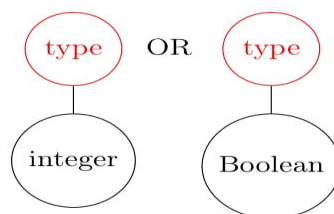
DecSeq \leftarrow Declaration⁺ SB ϵ



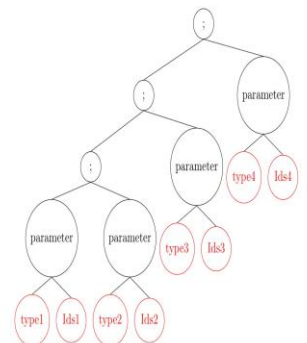
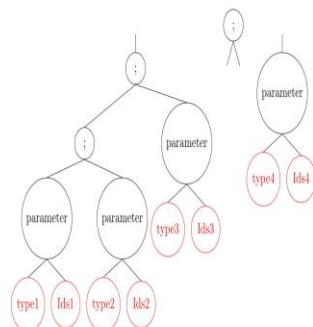
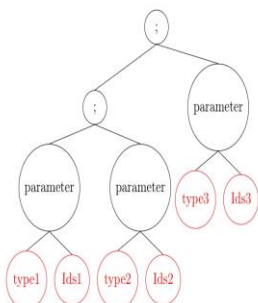
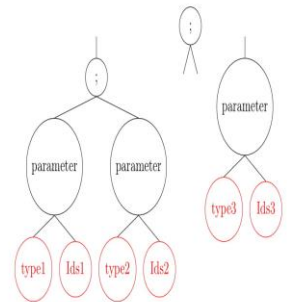
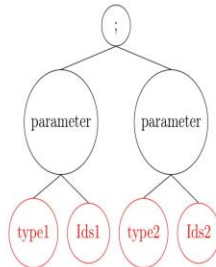
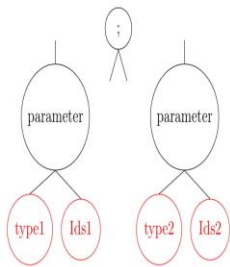
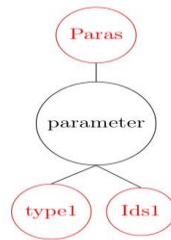
Declaration \leftarrow var(type, Ids) | proc(Id, Paras?, command)



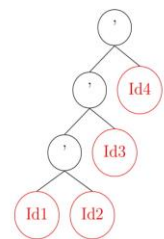
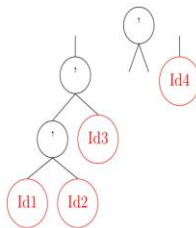
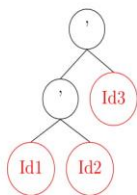
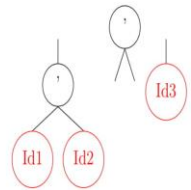
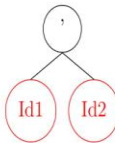
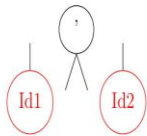
type \leftarrow integer | Boolean



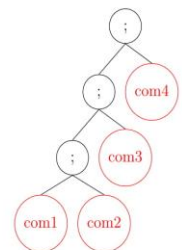
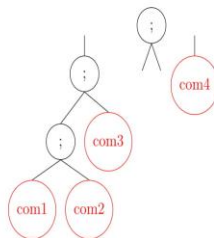
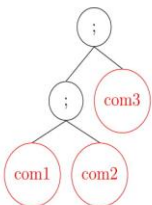
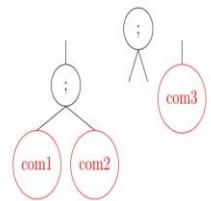
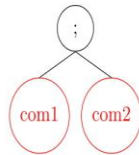
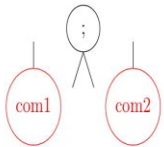
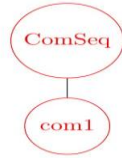
Paras \leftarrow Paras (type , lds)⁺ SB ;



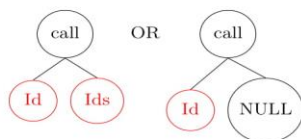
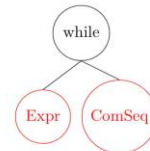
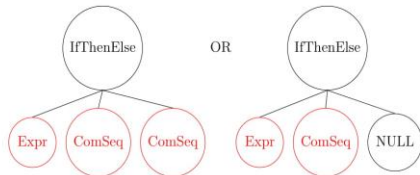
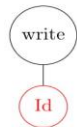
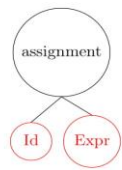
$Ids \leftarrow Id^+ SB,$



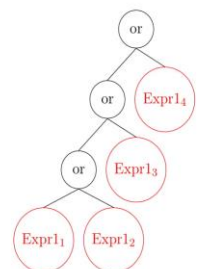
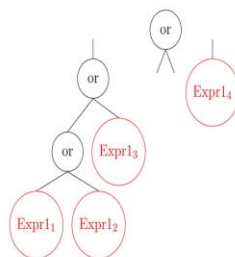
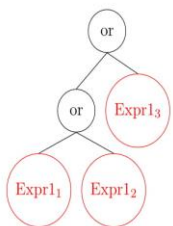
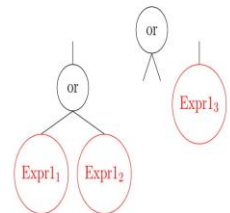
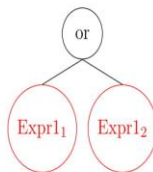
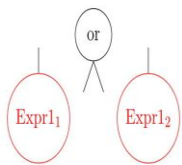
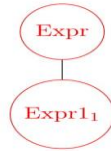
ComSeq \leftarrow command⁺ SB ;



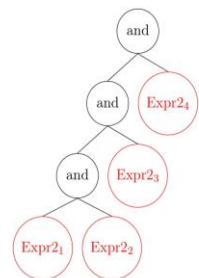
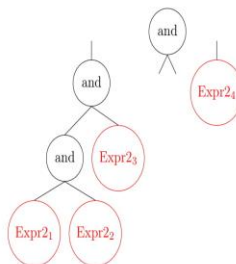
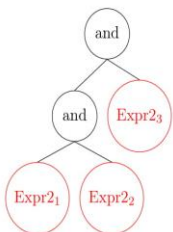
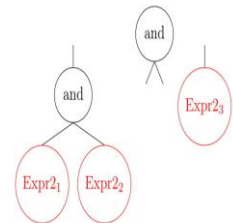
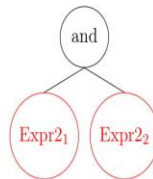
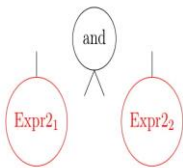
Command \leftarrow Assign(**Id** , Expr) |
 Read(**Id**) |
 Write(**Id**) |
 IfThenElse (Expr , ComSeq , ComSeq?) |
 While(Expr , ComSeq) |
 Call(**Id** , Ids?)



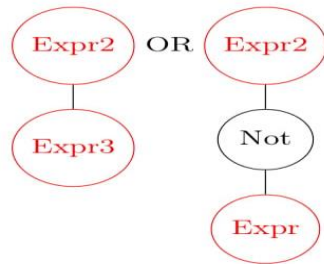
$\text{Expr} \leftarrow \text{Expr}_1^+ \text{ SB or}$



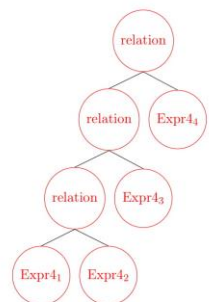
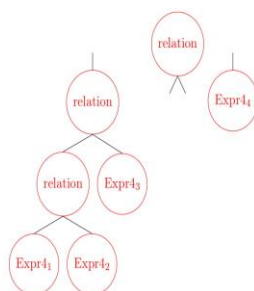
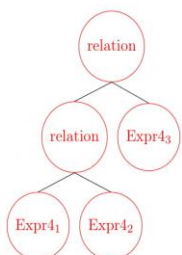
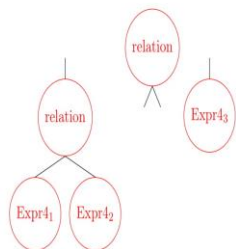
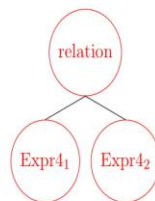
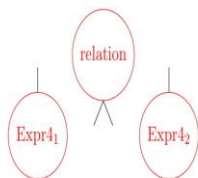
Expr1 \leftarrow Expr2⁺ SB and



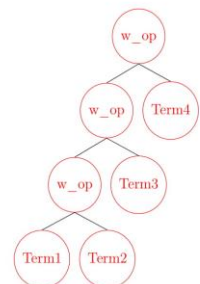
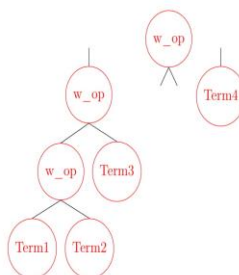
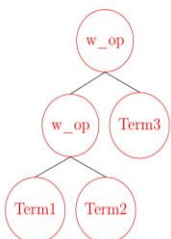
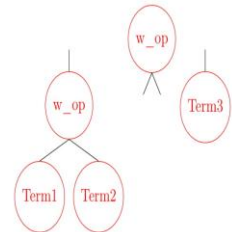
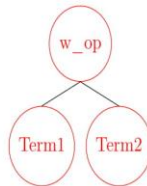
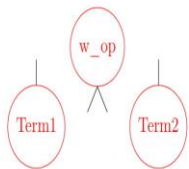
Expr2 ← Expr3 | Not(Expr)



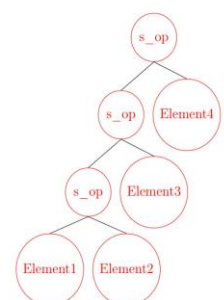
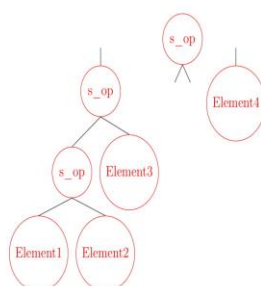
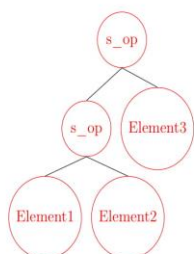
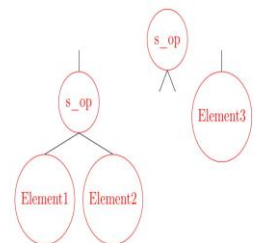
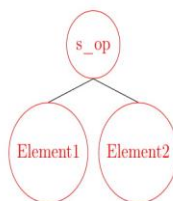
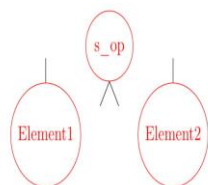
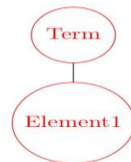
Expr3 \leftarrow Expr4⁺ SB relation



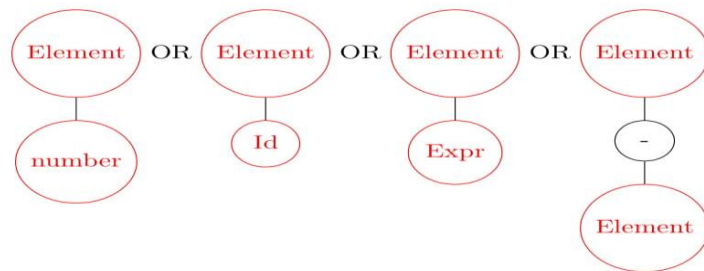
Expr4 \leftarrow Term⁺ SB w_op



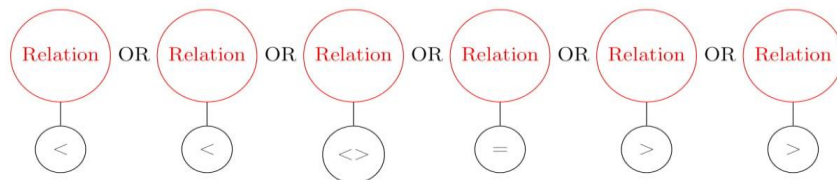
Term \leftarrow Element⁺ SB s_op



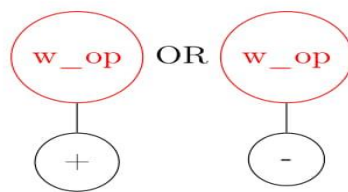
Element \leftarrow Number | Id | Expr | -(Element)



<relation> ::= < | <= | <> | = | > | >=



<weak op> ::= + | -



<strong op> ::= * | /

