## UML Diagram Description

Our design is based on the CUP and LEX files given in the draft solution. At the root we have the Node Class ,which all the classes inherit from and that has the line and column instance variables to improve the error reporting.

Three main classes lay below Node and extend it, the ExprNode (for expression) , StmtNode (for statement) and DeclNode (for declaration) and 2 helper classes for type(TypeNode and VarTypeNode(id:type construction in Q)) and 6 container classes StatementListNode, ExprListNode, ParamListNode, DeclListNode, BlockNode and ProgramNode which represents the root of the AST.

Declarations are represented by DeclNode children DatatypeNode, FuncDeclNode and VarDeclNode while statements by RptUntilNode, WhileStmtNode, IfElseNode , ReturnStmtNode, AssignNode and FuncCallStmtNode, for the latter we just keep a reference to FuncCallNode which is an expression.

The rest of the classes extend ExprNode, Term and then Factor are used to handle priority and resolve ambiguity. The BrkExprNode Class was used because the CUP action needs to return an object of type FinalNode.