Parsing 2

Simple Boolean Expression Grammar

Prog -> StmtSeq StmtSeq -> Stmt StmtSeq StmtSeq -> ϵ Stmt -> Id = Expr ; Expr -> Expr || Term Expr -> Term Term -> Term && Factor Term -> Factor Factor -> ! Factor Factor -> (Expr) Factor -> Id Factor -> True Factor -> False

Example Program

Prog -> StmtSeq StmtSeq -> Stmt StmtSeq StmtSeq -> ε Stmt -> Id = Expr ; Expr -> Expr || Term Expr -> Term Term -> Term && Factor Term -> Factor Factor -> ! Factor Factor -> (Expr) Factor -> Id Factor -> True Factor -> False



x = True; y = False; w = x || y;

Example Program Top Down Parse Prog StmtSeq StmtSet Stmt Expr ; Stmt StmtSeq Term Expr ; StmtSeq (id, y) Stmt = Term (id, w) Ęxpr = Factor Term True Expr False Factor Term Factor (id,y) (id,x)

Prog -> StmtSeq StmtSeq -> Stmt StmtSeq StmtSeq -> ε Stmt -> Id = Expr ; Expr -> Expr || Term Expr -> Term Term -> Term && Factor Term -> Factor Factor -> ! Factor Factor -> (Expr) Factor -> Id Factor -> True Factor -> False



Example Program Prog StmtSeq StmtSet Stmt Expr ; (id, x) = Stmt StmtSeq Term Expr ; StmtSeq (id, y) Stmt = Factor Term (id, w) Ęxpr = Factor Term True Expr False Factor Term Factor (id,y) (id,x)

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Example Program Prog StmtSeq StmtSeq Stm Expr; (id, x) StmtSeq Stmt Term Expr ; (id, y) Stmt StmtSeq = Factor Term (id, w) Ęxpr = Factor Term True Expr False Factor Term Factor (id,y) (id,x)

Prog -> StmtSeq StmtSeq -> Stmt StmtSeq StmtSeq -> ε Stmt -> Id = Expr ; Expr -> Expr || Term Expr -> Term Term -> Term && Factor Term -> Factor Factor -> ! Factor Factor -> (Expr) Factor -> Id Factor -> True Factor -> False



Example Program Prog StmtSeq StmtSeq Stn (id, x) Expr; StmtSeq Stmt Term (id, y) Expr ; Stmt StmtSeq = Factor Term (id, w) Ęxpr = Factor Term True Expr False Factor Term Factor (id,y) (id,x)

Prog -> StmtSeq StmtSeq -> Stmt StmtSeq StmtSeq -> ε Stmt -> Id = Expr ; Expr -> Expr || Term Expr -> Term Term -> Term && Factor Term -> Factor Factor -> ! Factor Factor -> (Expr) Factor -> Id Factor -> True Factor -> False



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Example Program Prog StmtSeq StmtSeq Stn (id, x) Expr; StmtSeq Stmt Term (id, y) Expr ; Stmt StmtSeq = Factor Term (id, w) Ęxpr = Factor True Term Expr False Factor Term Factor (id,y) (id,y)

Prog -> StmtSeq StmtSeq -> Stmt StmtSeq StmtSeq -> ε Stmt -> Id = Expr ; Expr -> Expr || Term Expr -> Term Term -> Term && Factor Term -> Factor Factor -> ! Factor Factor -> (Expr) Factor -> Id Factor -> True Factor -> False



Example Program Prog StmtSeq StmtSeq Stn Expr; (id, x) Stm StmtSeq Term Expr ; (id, y) Stmt StmtSeq = Factor Term (id, w) Ęxpr = True Factor Term Expr False Factor Term Factor (id,y) (id,x)

Prog -> StmtSeq StmtSeq -> Stmt StmtSeq StmtSeq -> ε Stmt -> Id = Expr ; Expr -> Expr || Term Expr -> Term Term -> Term && Factor Term -> Factor Factor -> ! Factor Factor -> (Expr) Factor -> Id Factor -> True Factor -> False



Example Program Prog StmtSeq StmtSeq Stn Expr; (id, x) Stm StmtSeq Term Expr; (id, y) Stmt StmtSeq. Factor Term (id, w) Expr = True Factor Term Expr False Factor Term Factor (id,y) (id,x)

Prog -> StmtSeq StmtSeq -> Stmt StmtSeq StmtSeq -> ε Stmt -> Id = Expr ; Expr -> Expr || Term Expr -> Term Term -> Term && Factor Term -> Factor Factor -> ! Factor Factor -> (Expr) Factor -> Id Factor -> True Factor -> False



Example Program Prog StmtSeq StmtSeq Stn Expr; (id, x) Stm StmtSeq Term Expr; (id, y) Stmt StmtSeq. Factor (id, w) Term Ęxpr True Factor Term Expr False Factor Term Factor (id,y) (id,x)

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Example Program Prog StmtSeq StmtSeq Stmt Expr; (id, x) Stmt **StmtSeq** Term **StmtSeq** Expr; (id, y) Stmt Factor (id, w) Term Ęxpr = Factor True Term Expr False Factor Term Factor (id,y) (id,x)

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Example Program Bottom Parse

Prog -> StmtSeq StmtSeq -> Stmt StmtSeq StmtSeq -> ϵ Stmt -> Id = Expr ; Expr -> Expr || Term Expr -> Term Term -> Term && Factor Term -> Factor Factor -> ! Factor Factor -> ! Factor Factor -> Id Factor -> Id Factor -> True Factor -> False

x = True; y = False; w = x || y;

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