

# Parsing 2

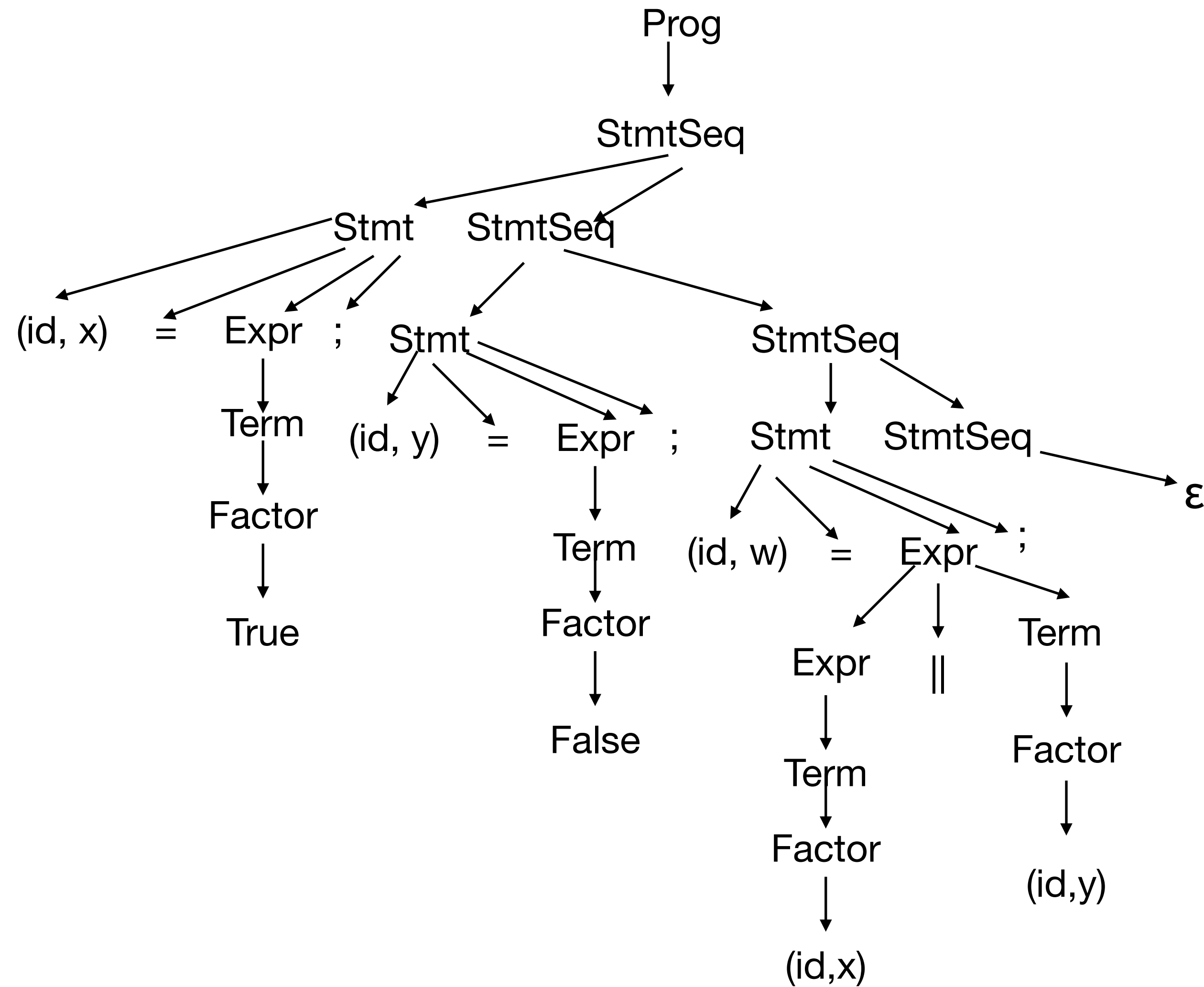
# Simple Boolean Expression Grammar

Prog -> StmtSeq  
StmtSeq -> Stmt StmtSeq  
StmtSeq ->  $\epsilon$   
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  
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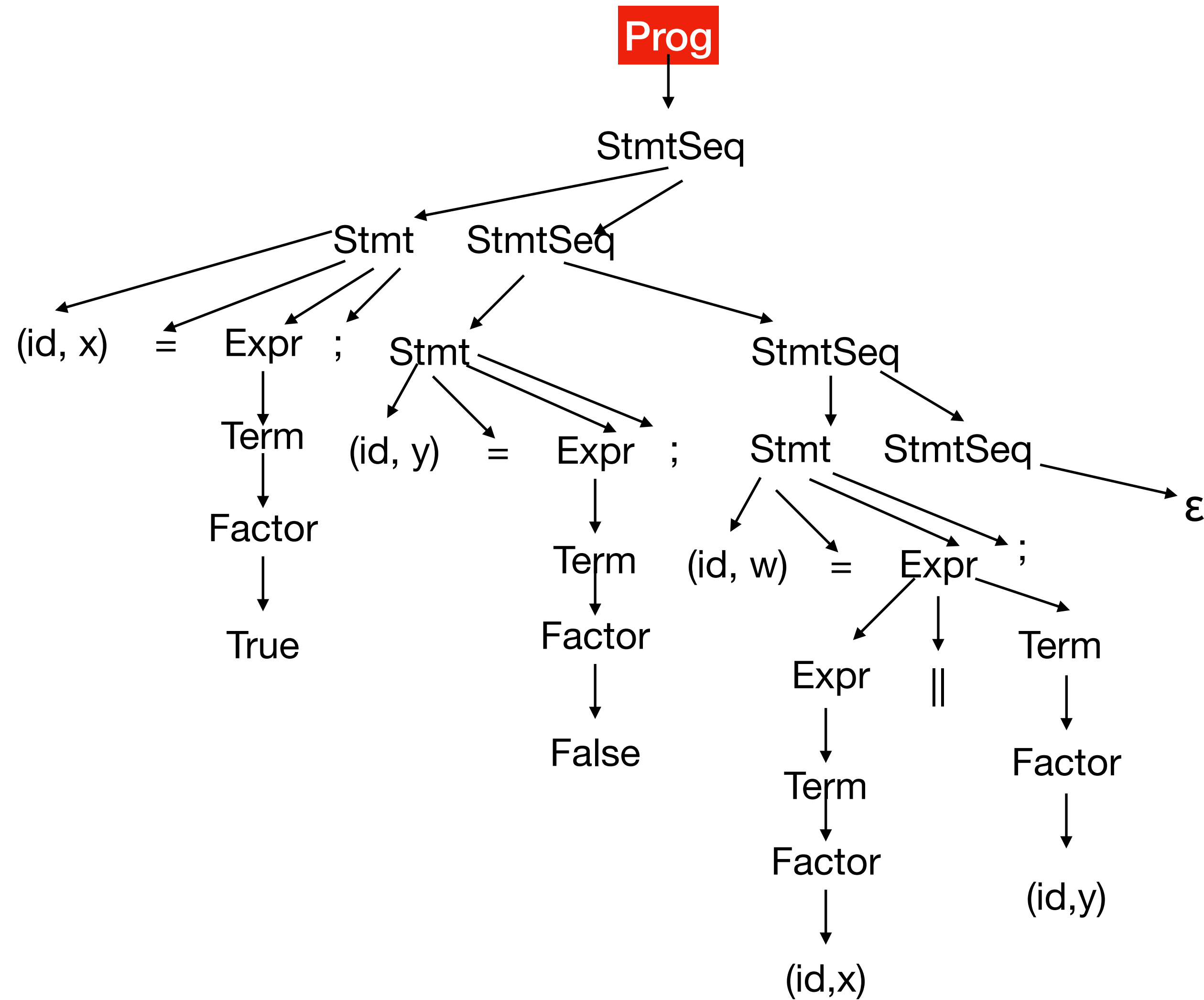
x = True;  
y = False;  
w = x || y;



# Example Program

## Top Down Parse

Prog -> StmtSeq  
 StmtSeq -> Stmt StmtSeq  
 StmtSeq ->  $\epsilon$   
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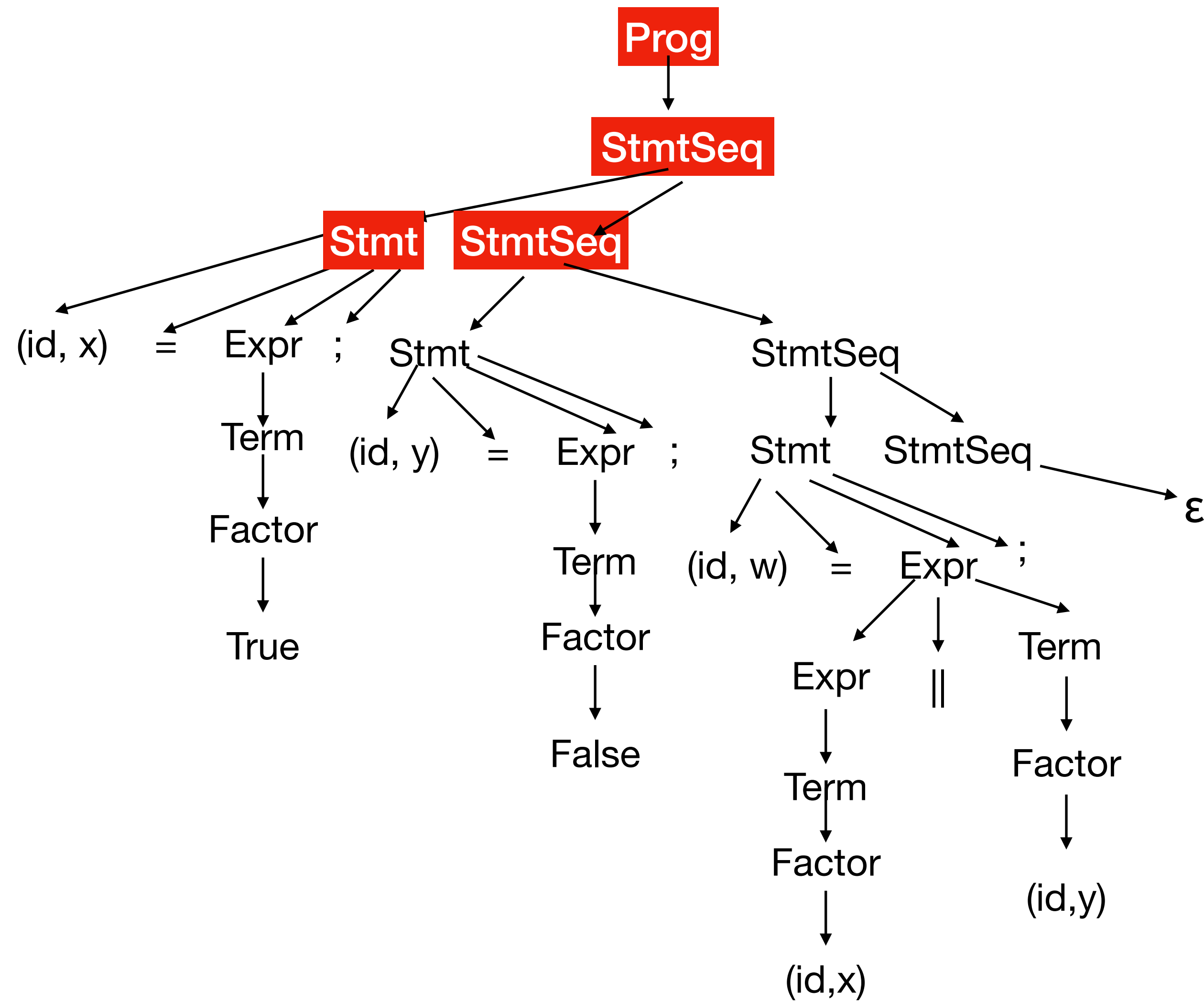


x = True;  
 y = False;  
 w = x || y;



# Example Program

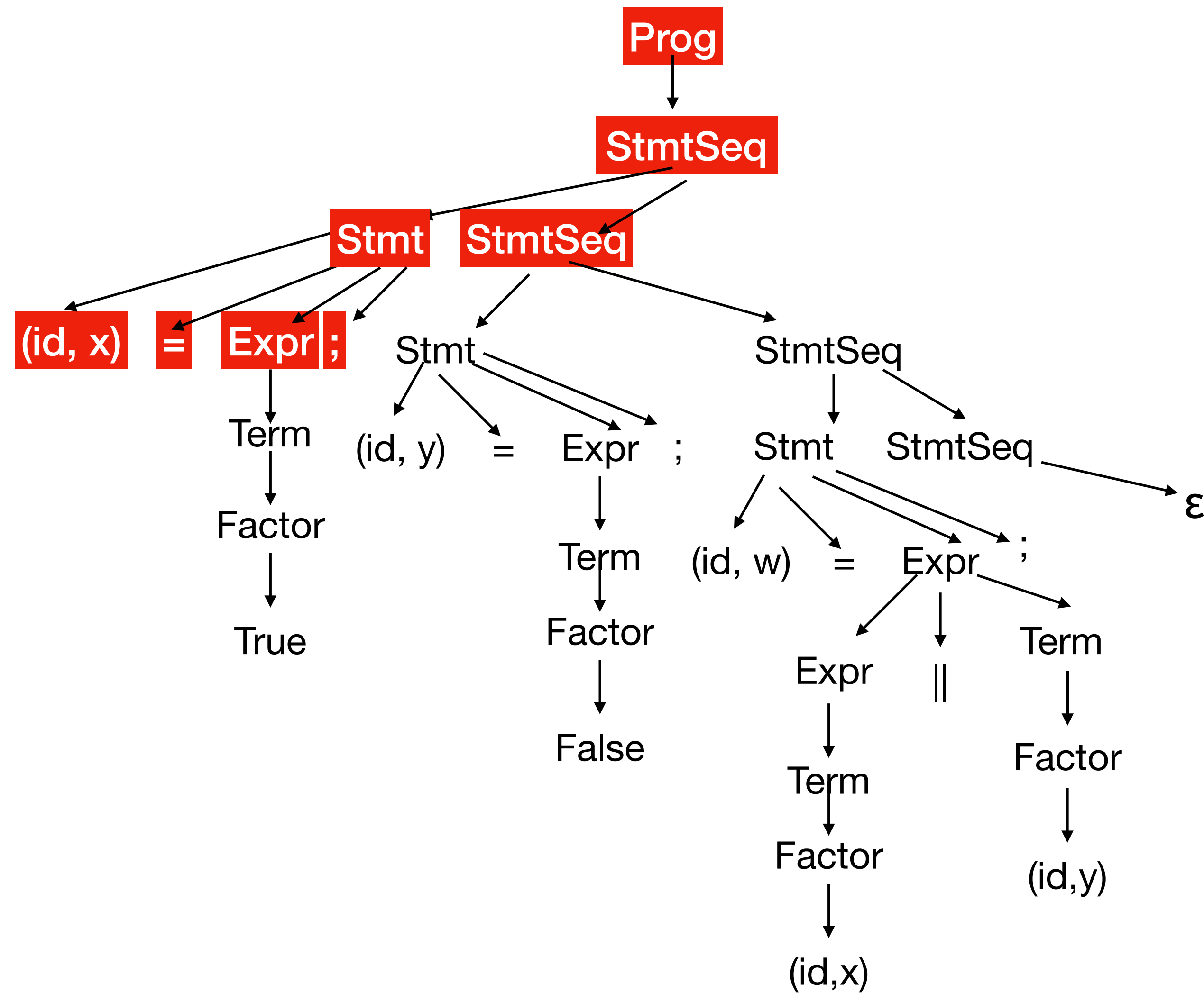
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# Example Program

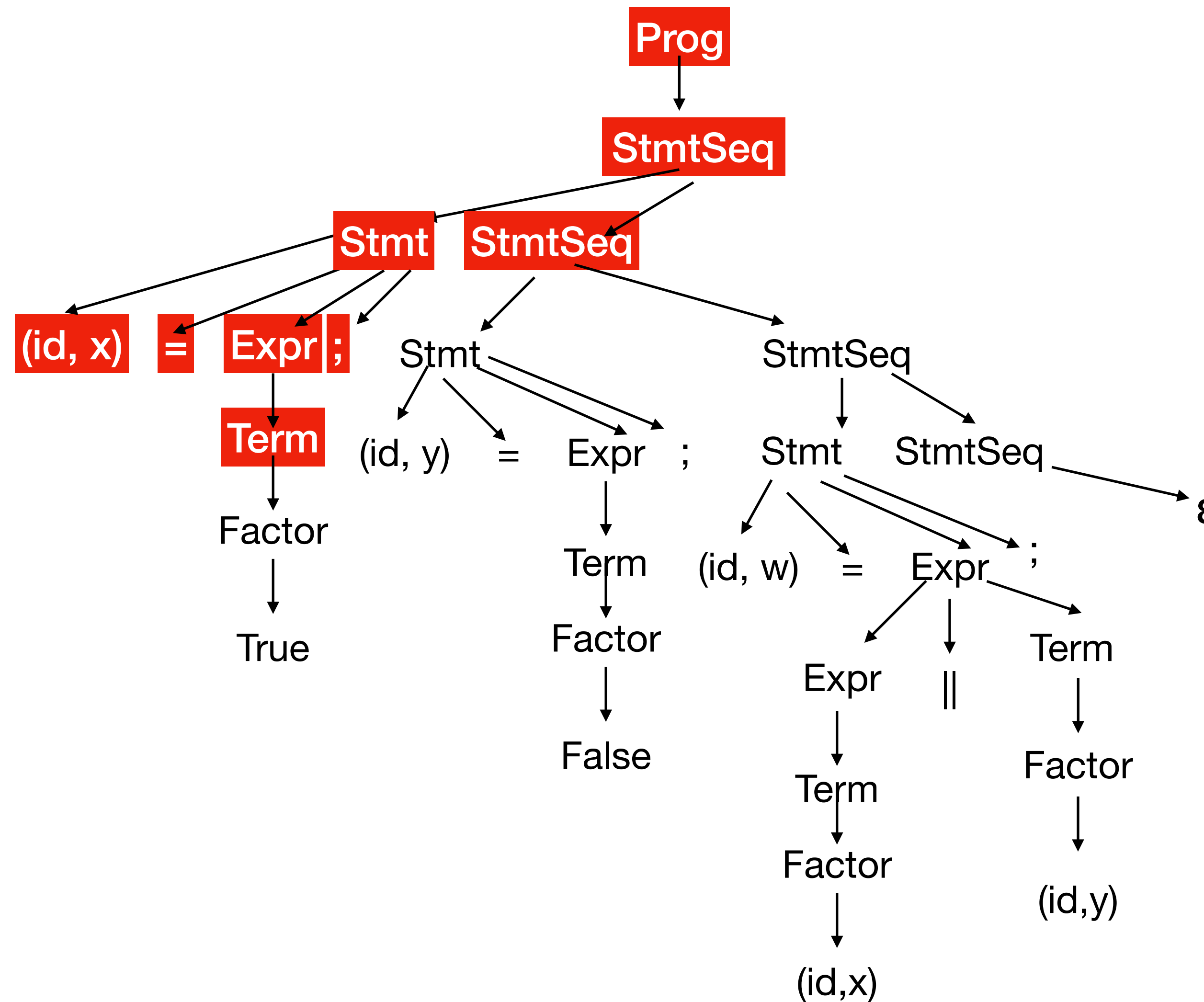
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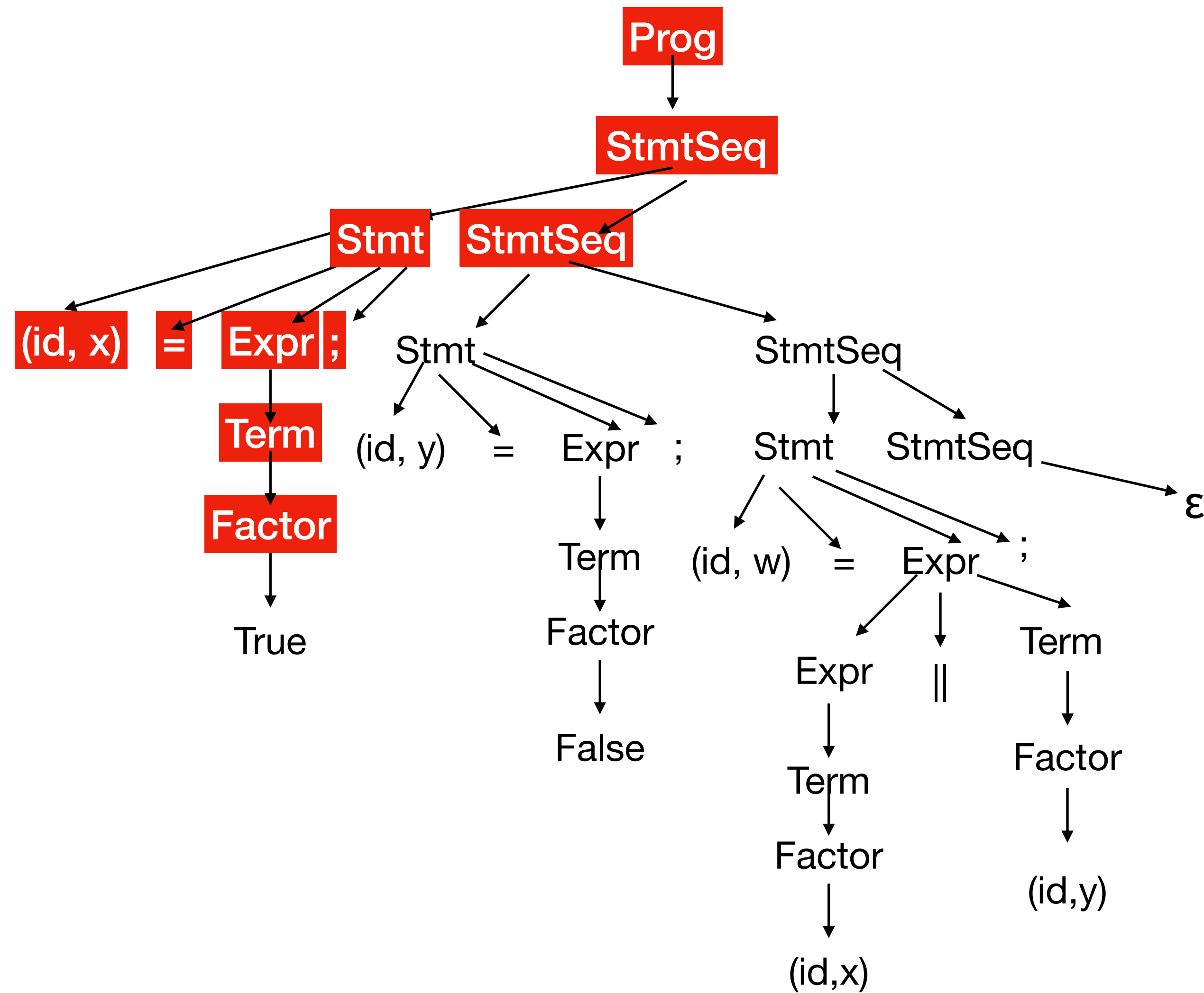


x = True;  
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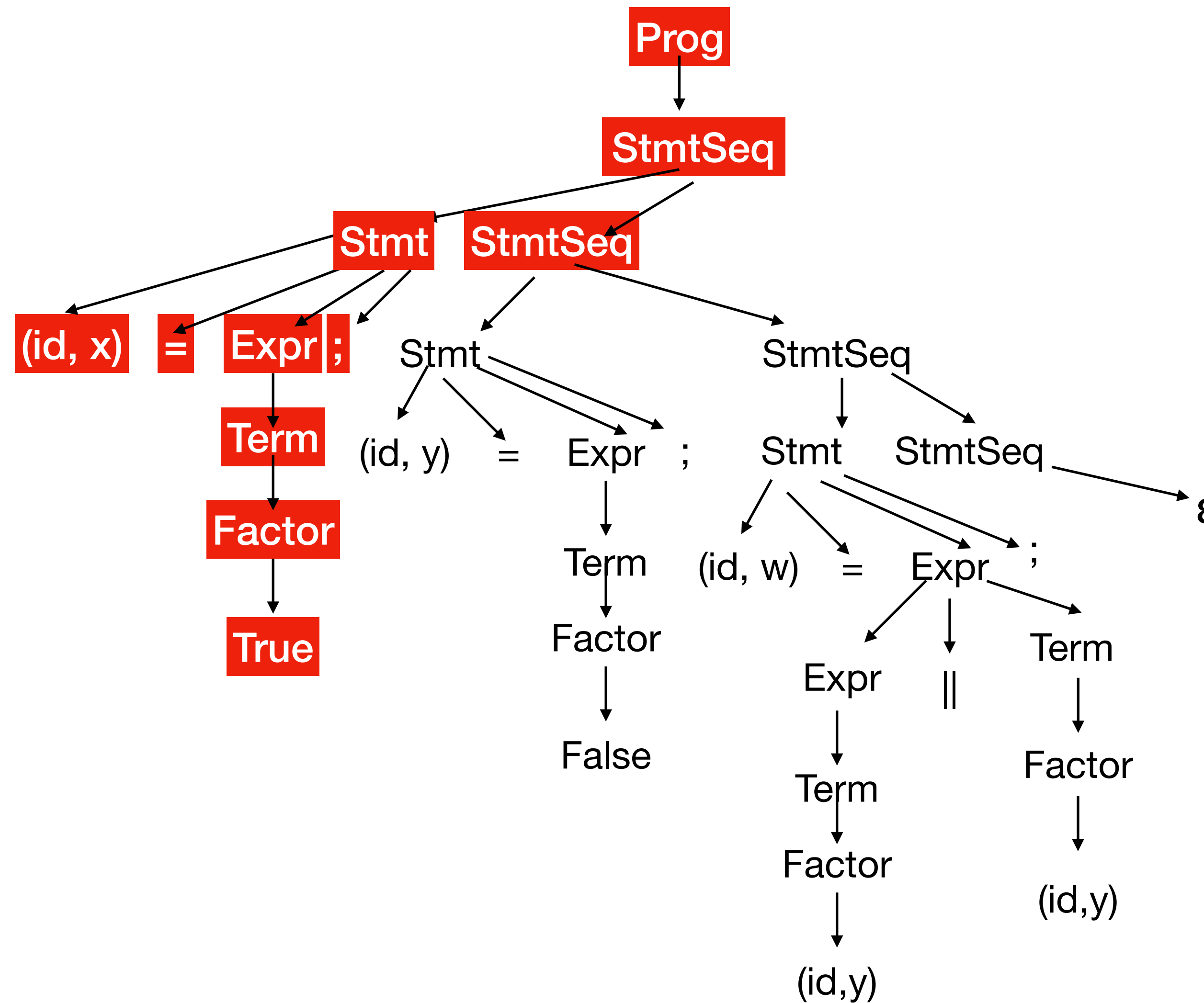
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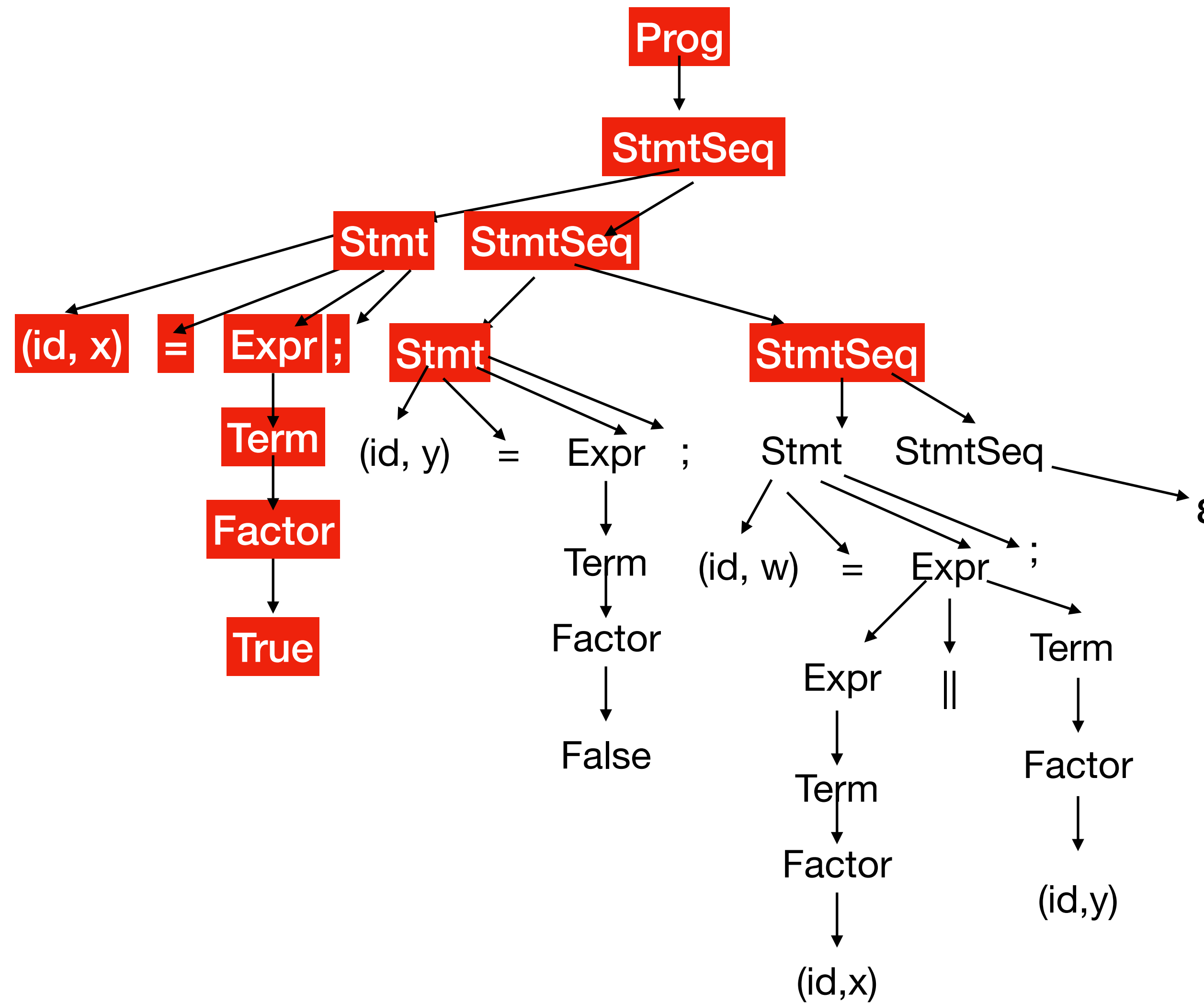
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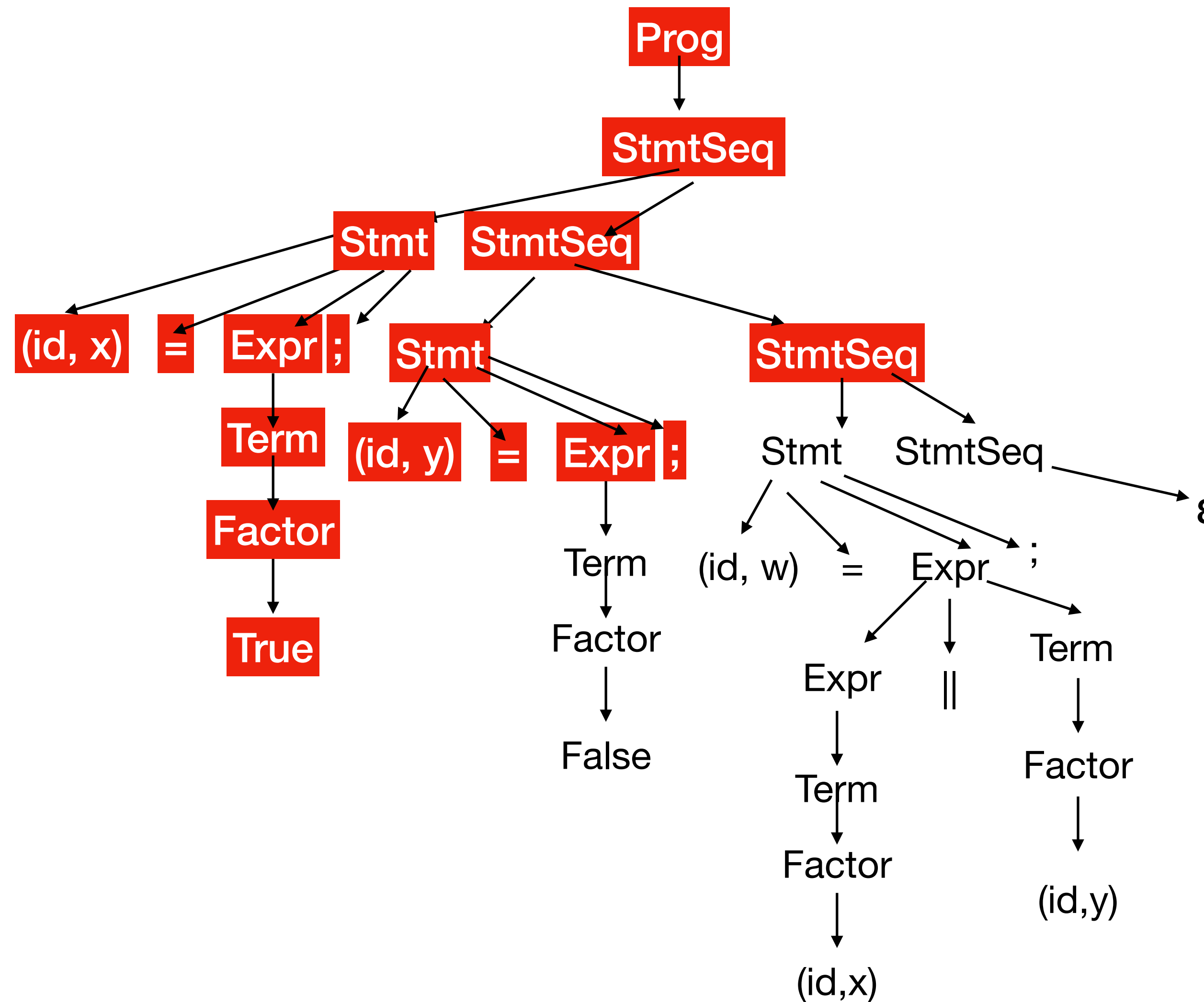
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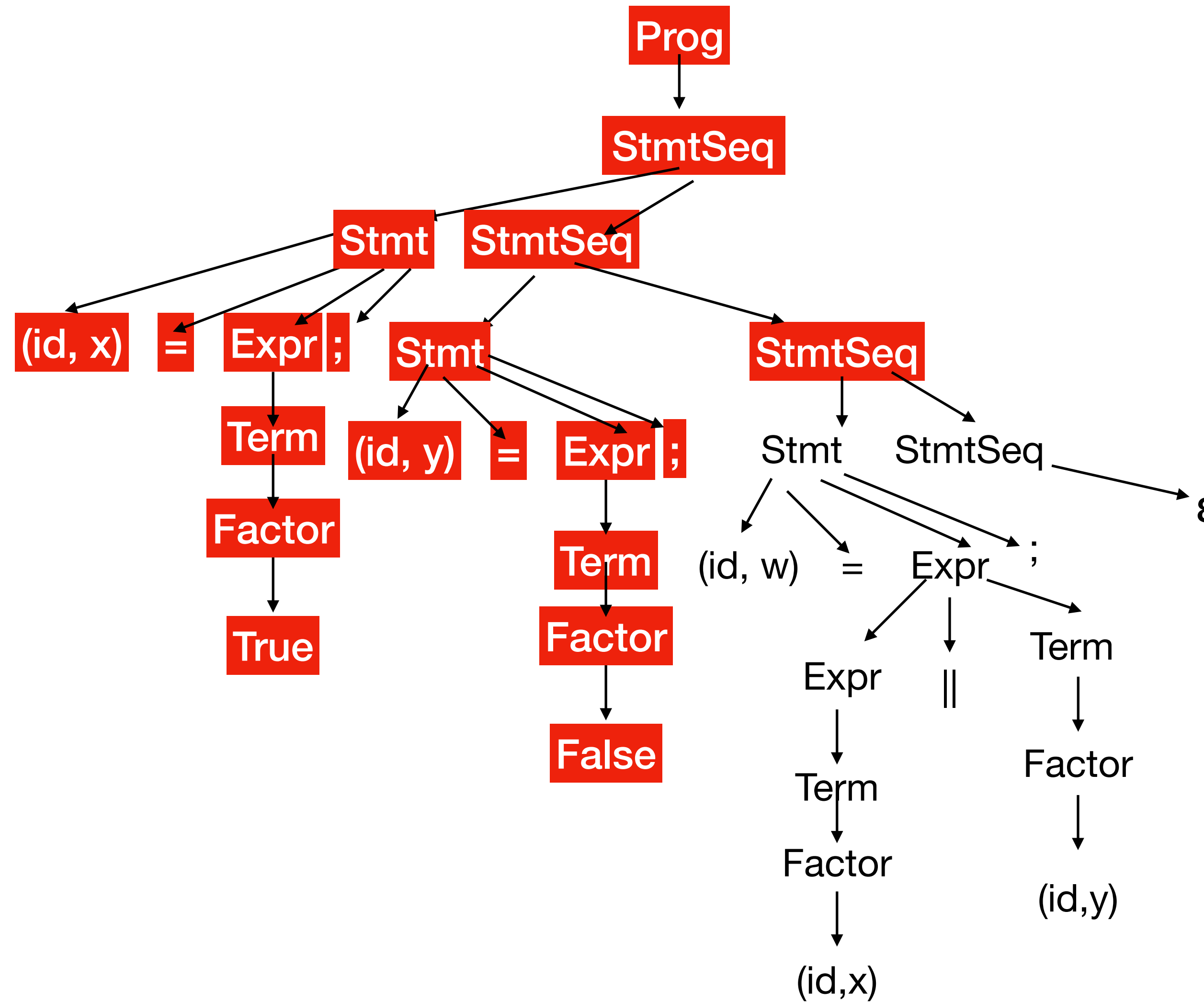
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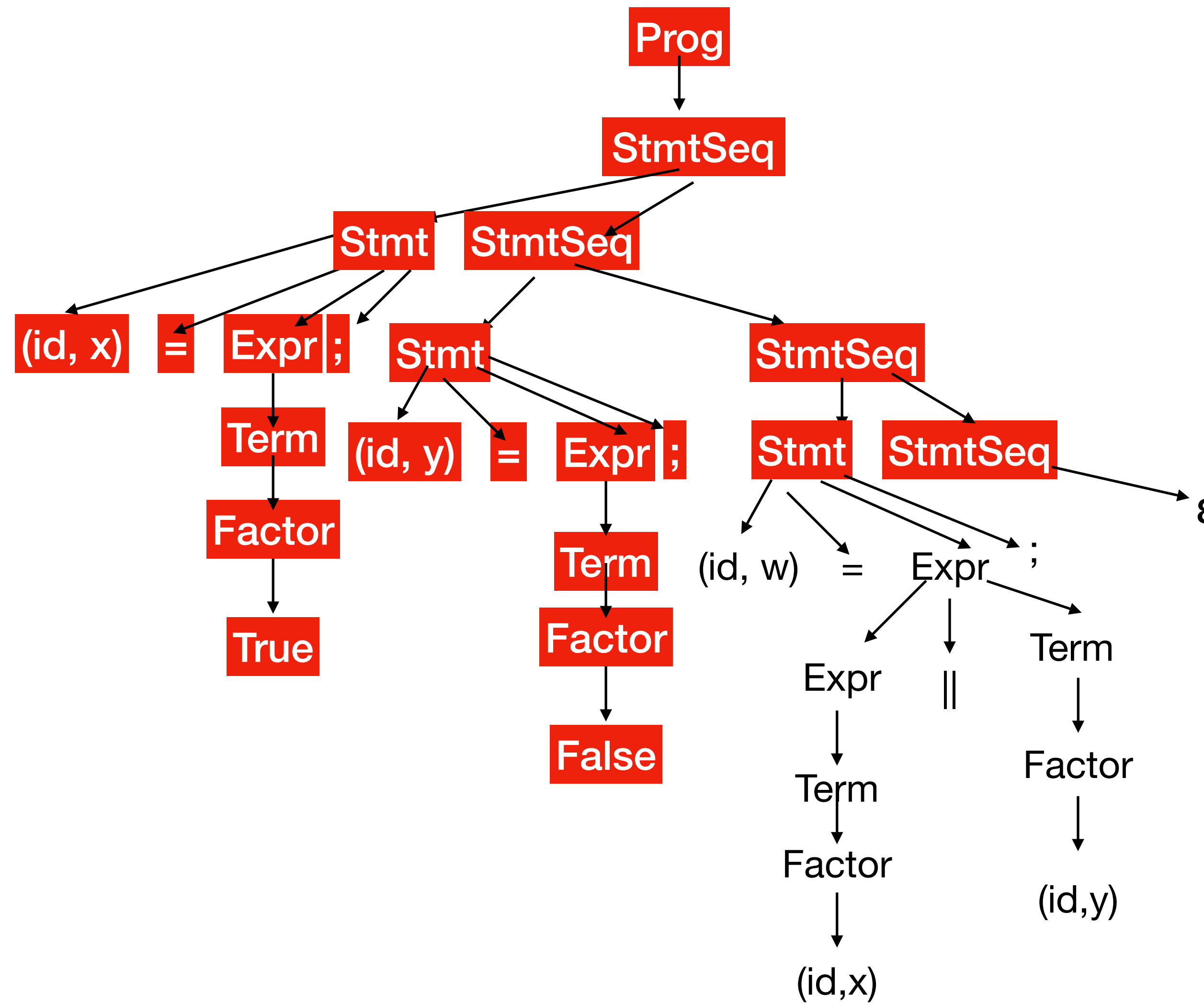
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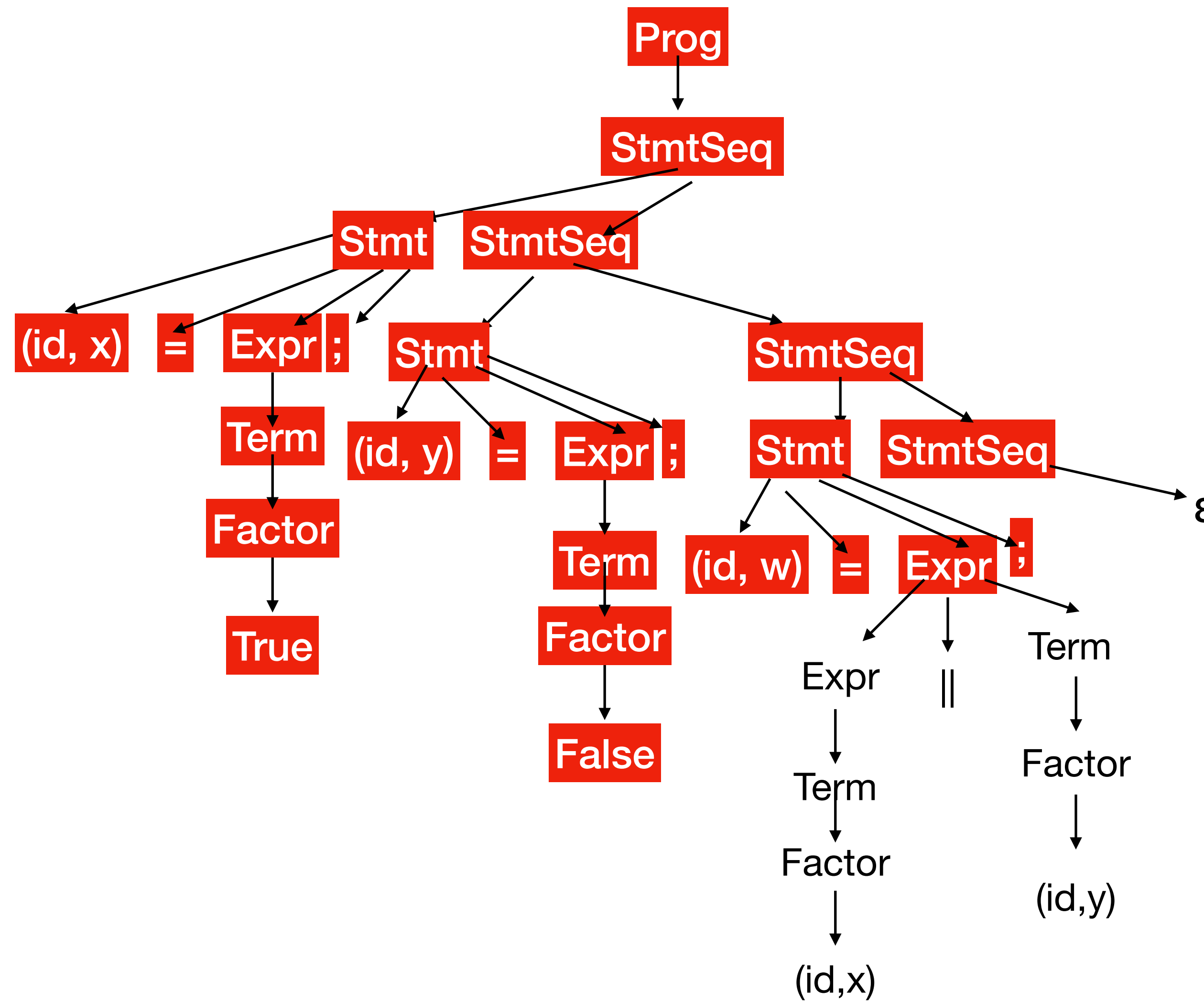


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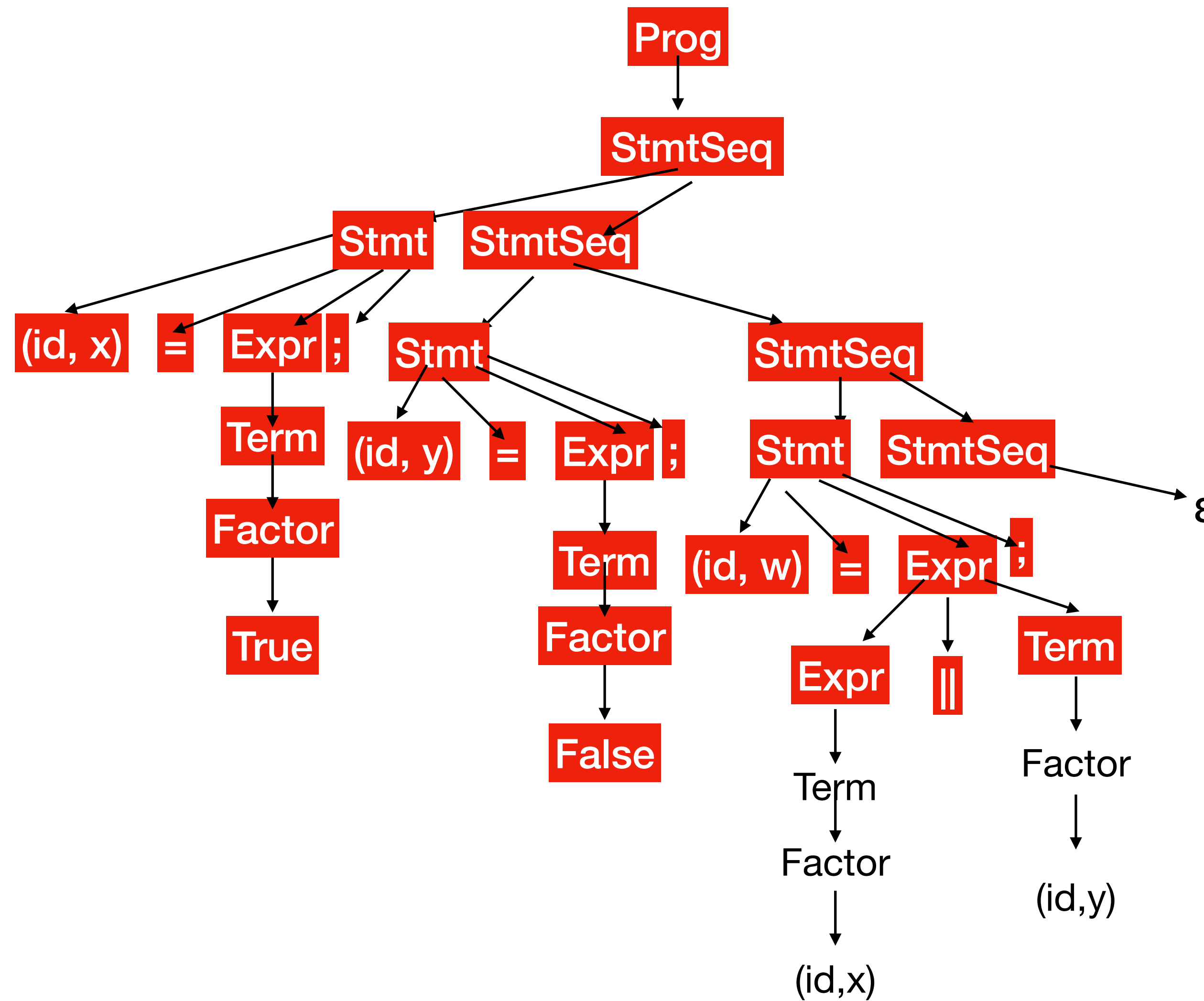
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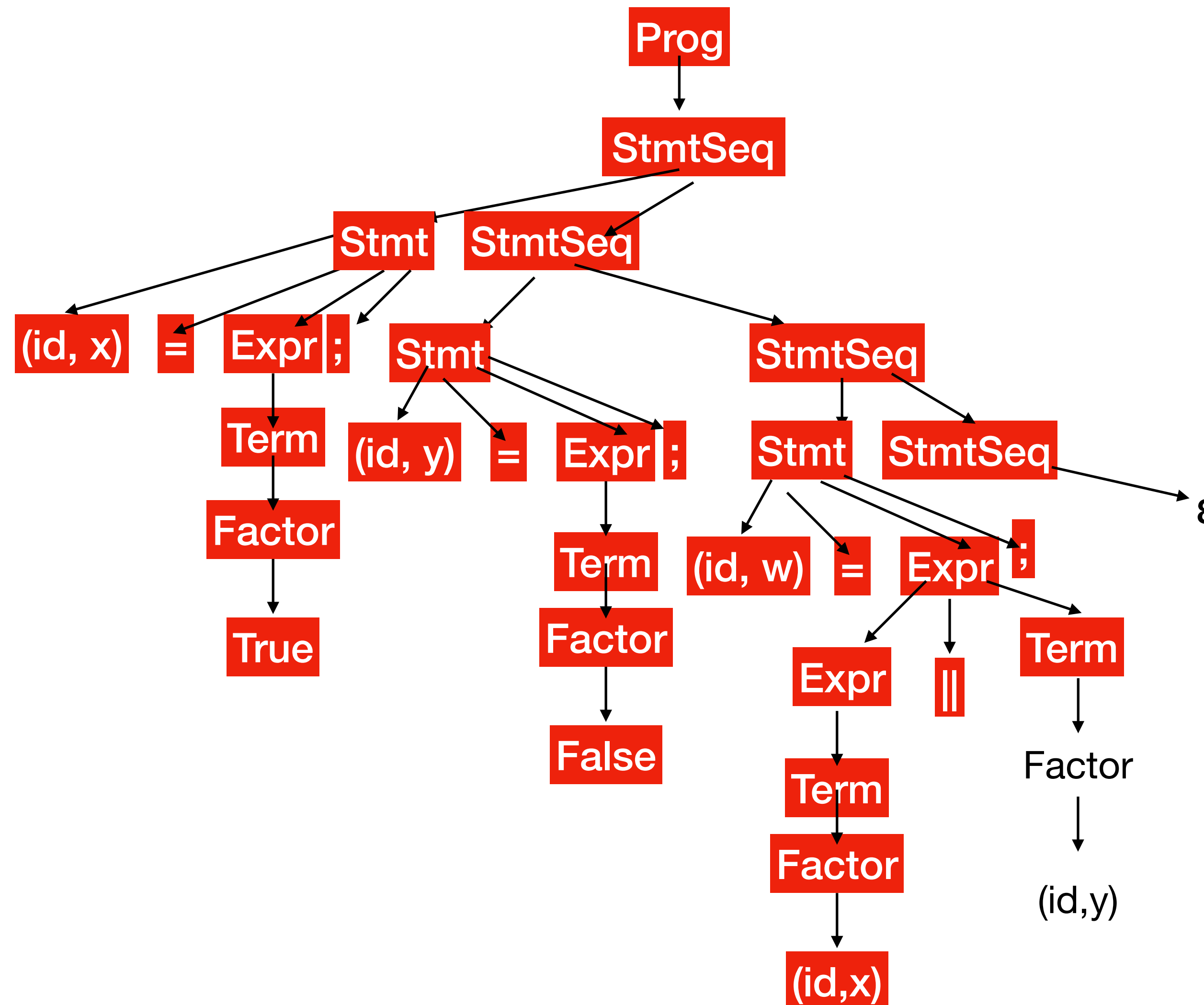


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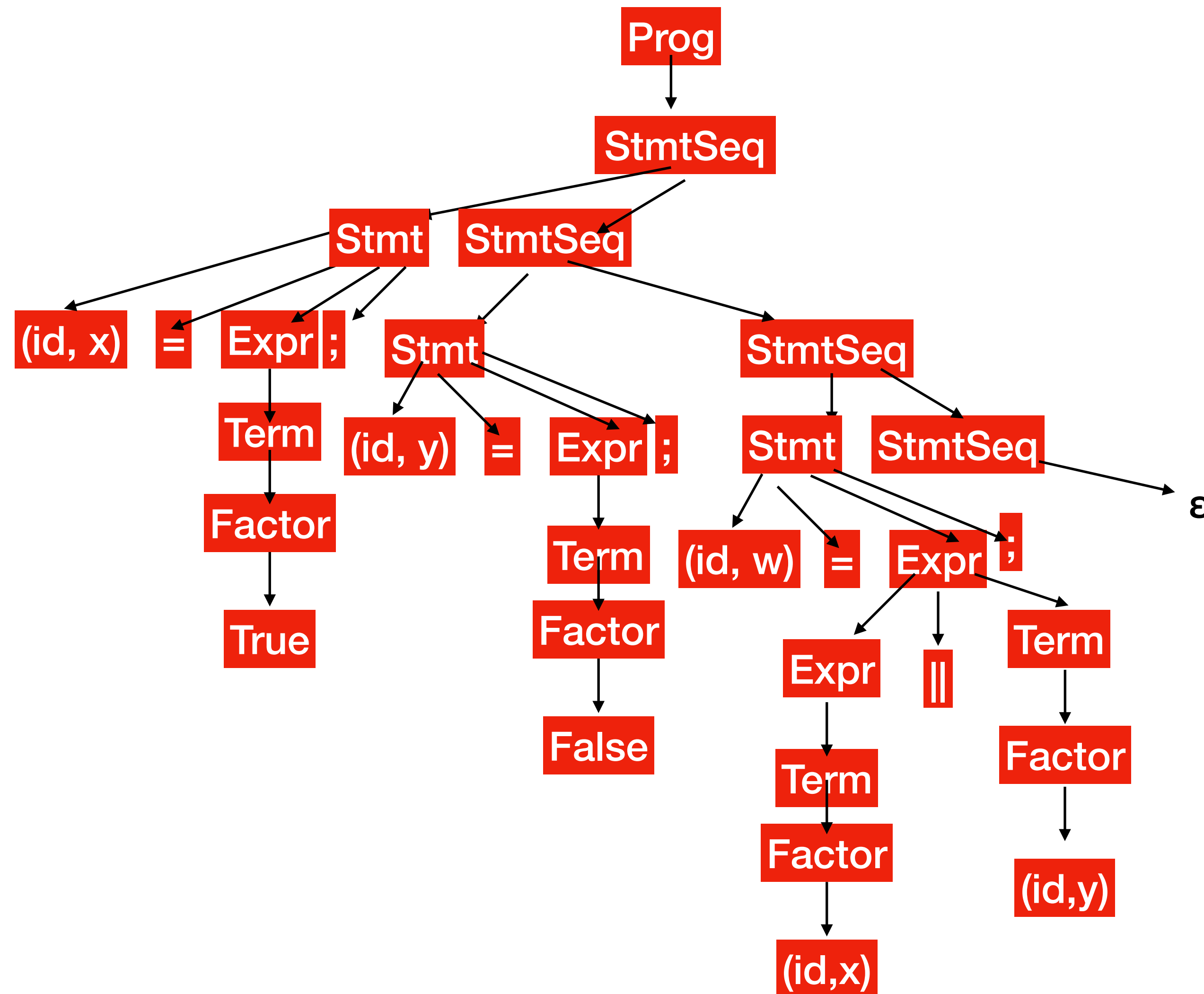
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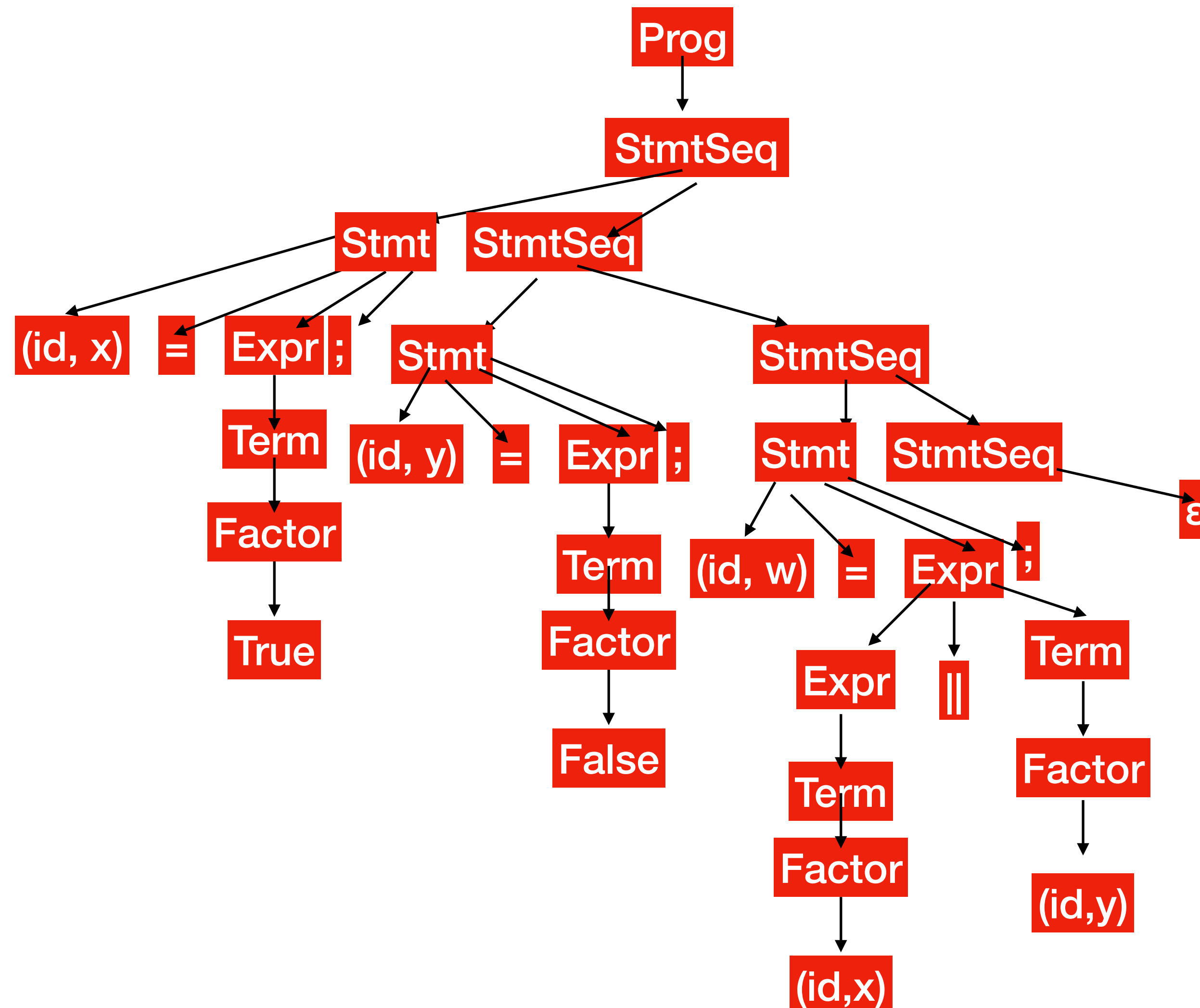
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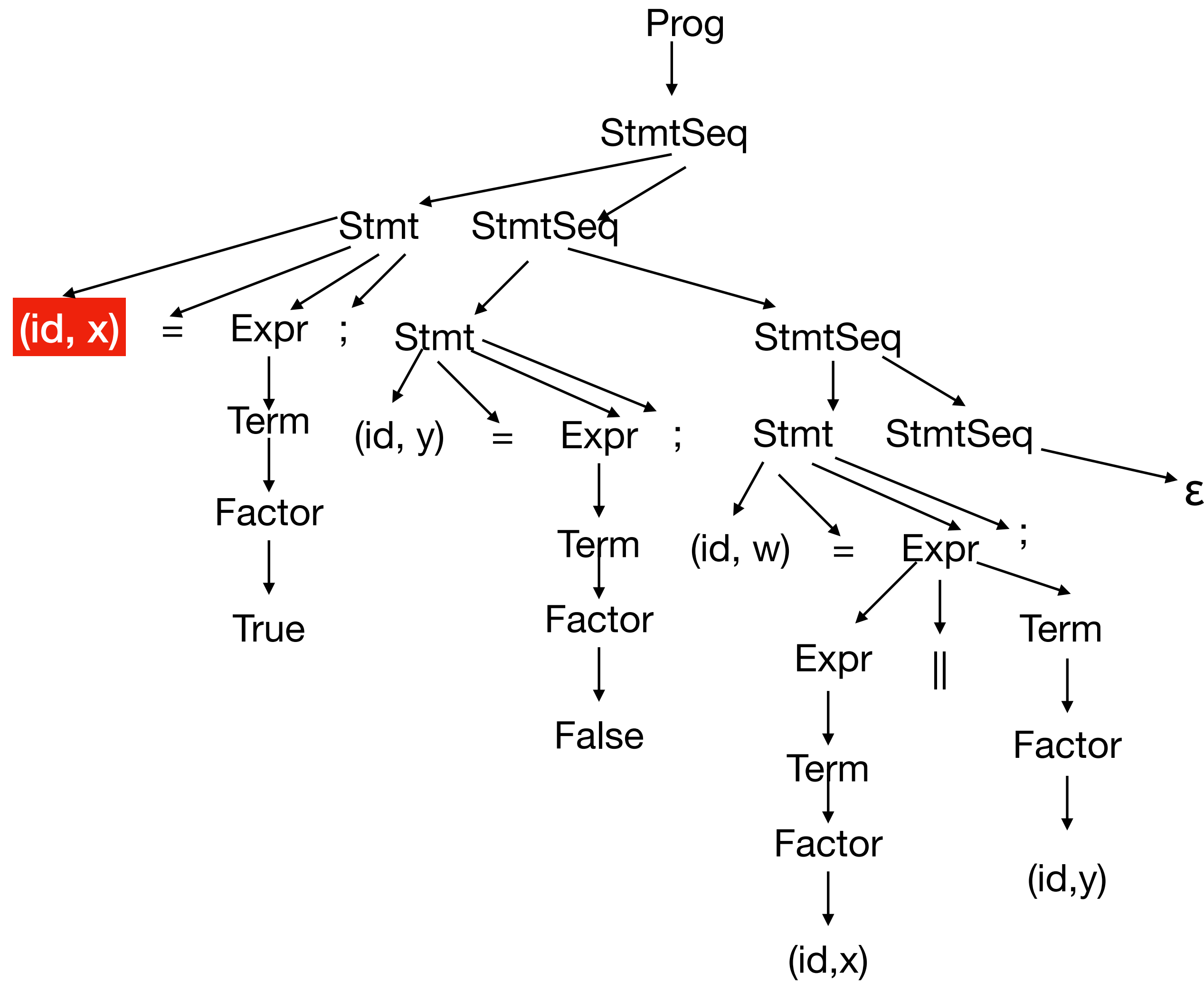
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# Example Program

## Bottom Parse

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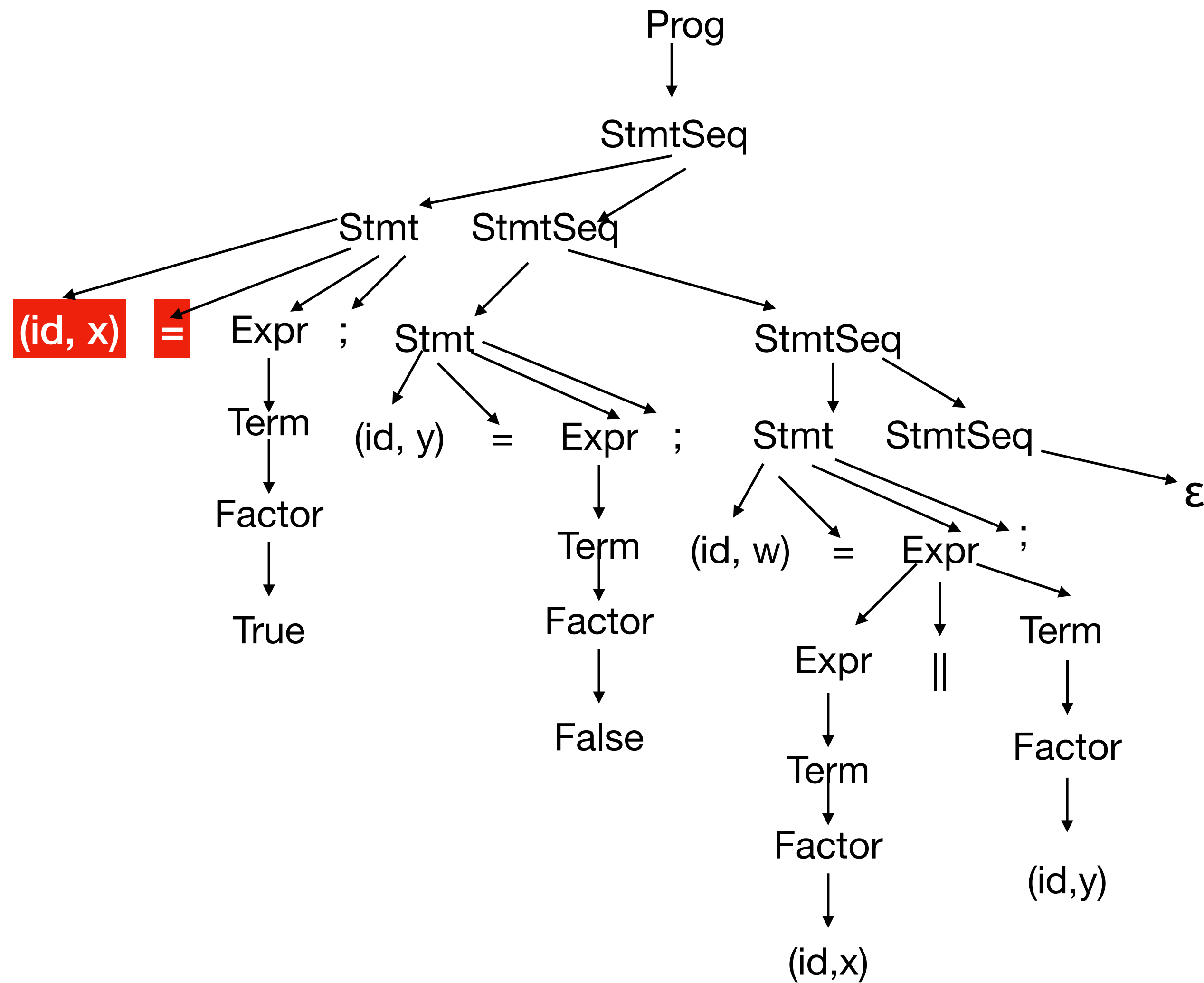
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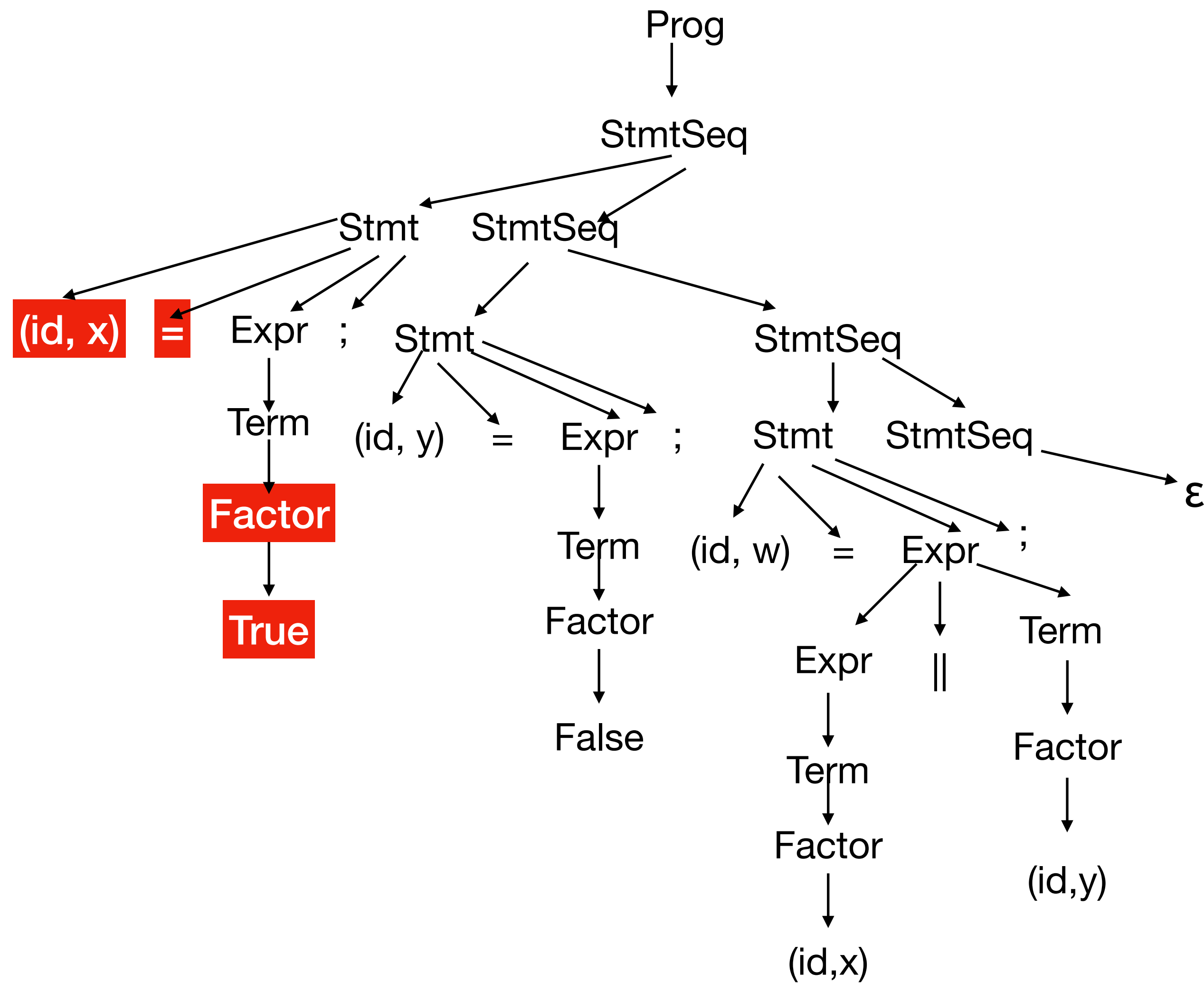
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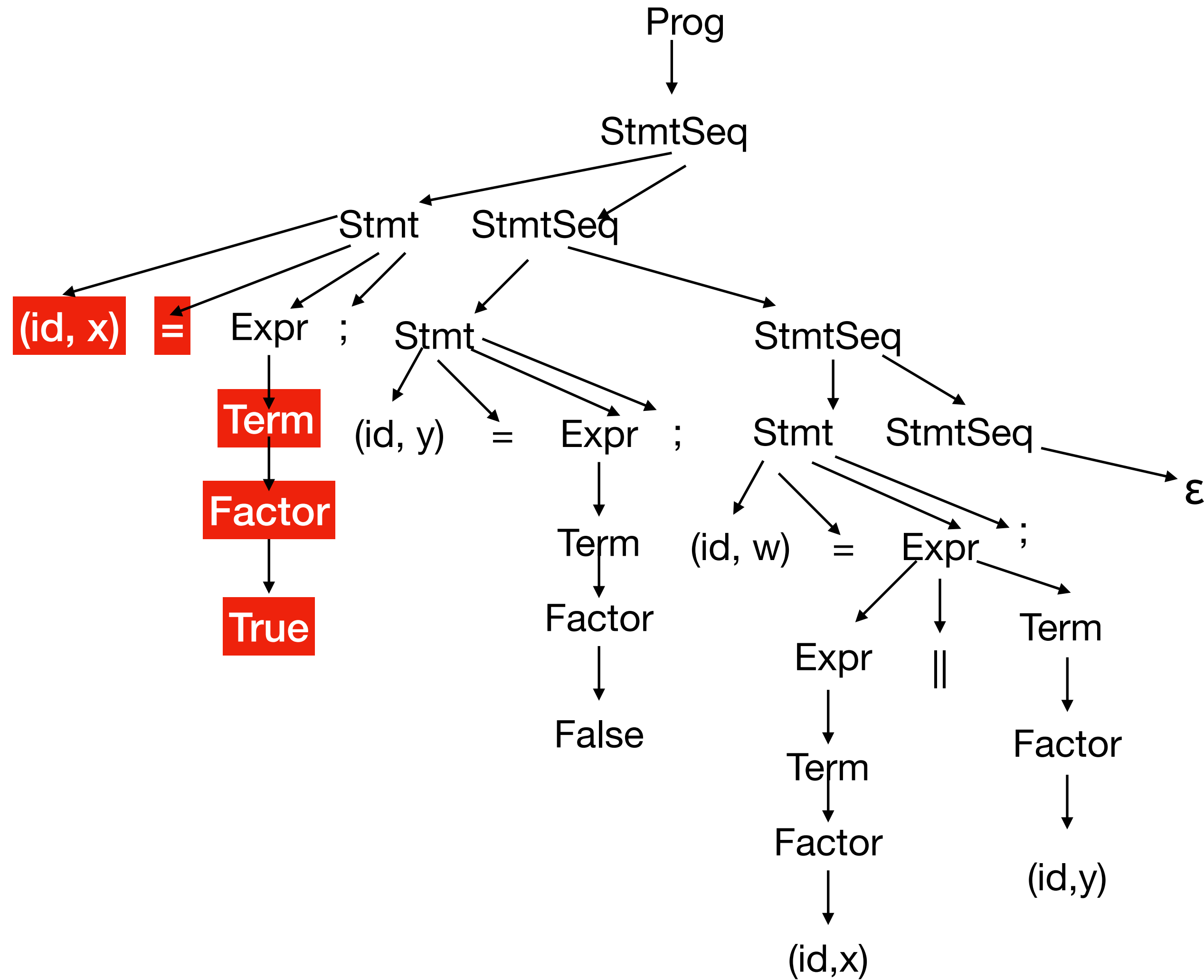


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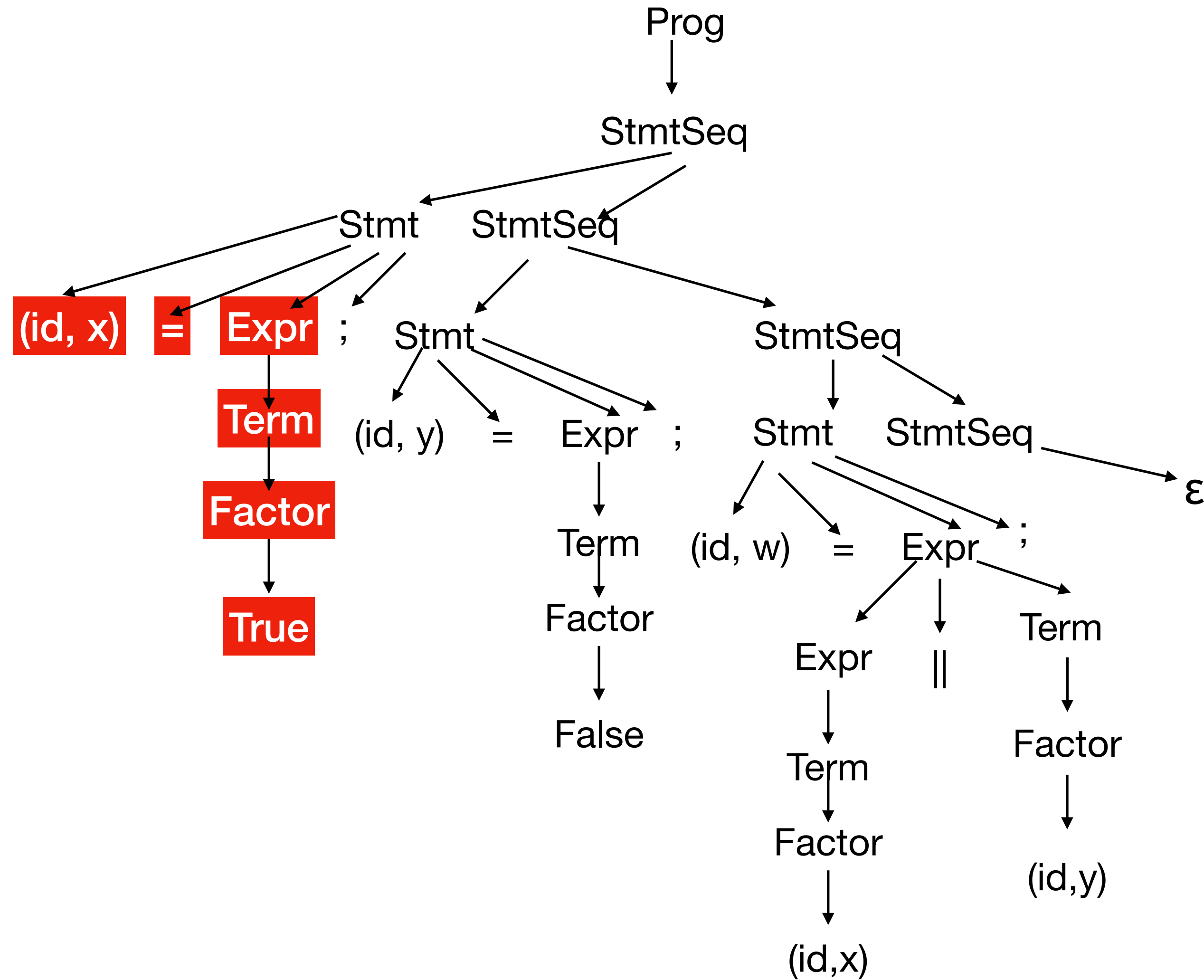
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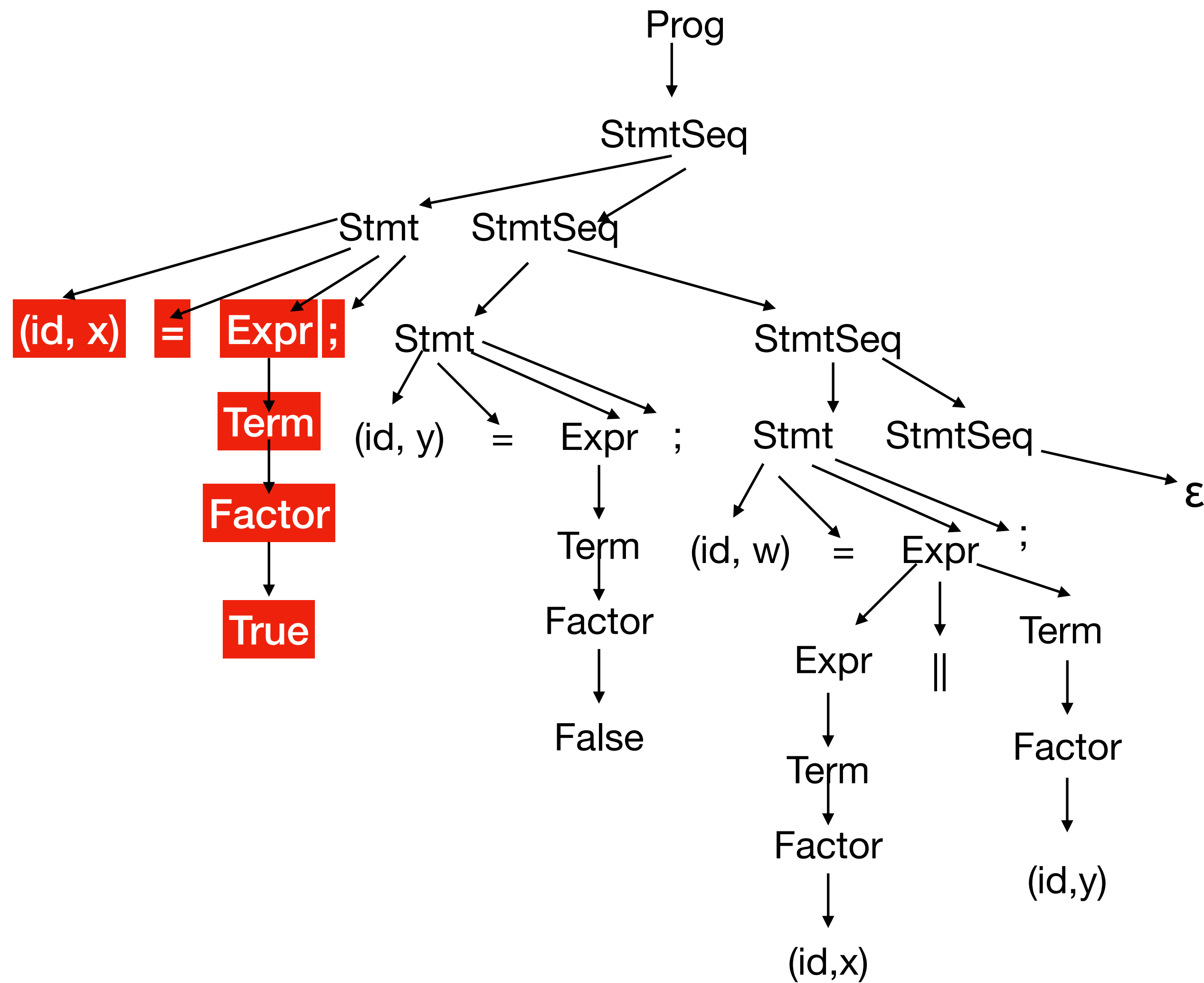


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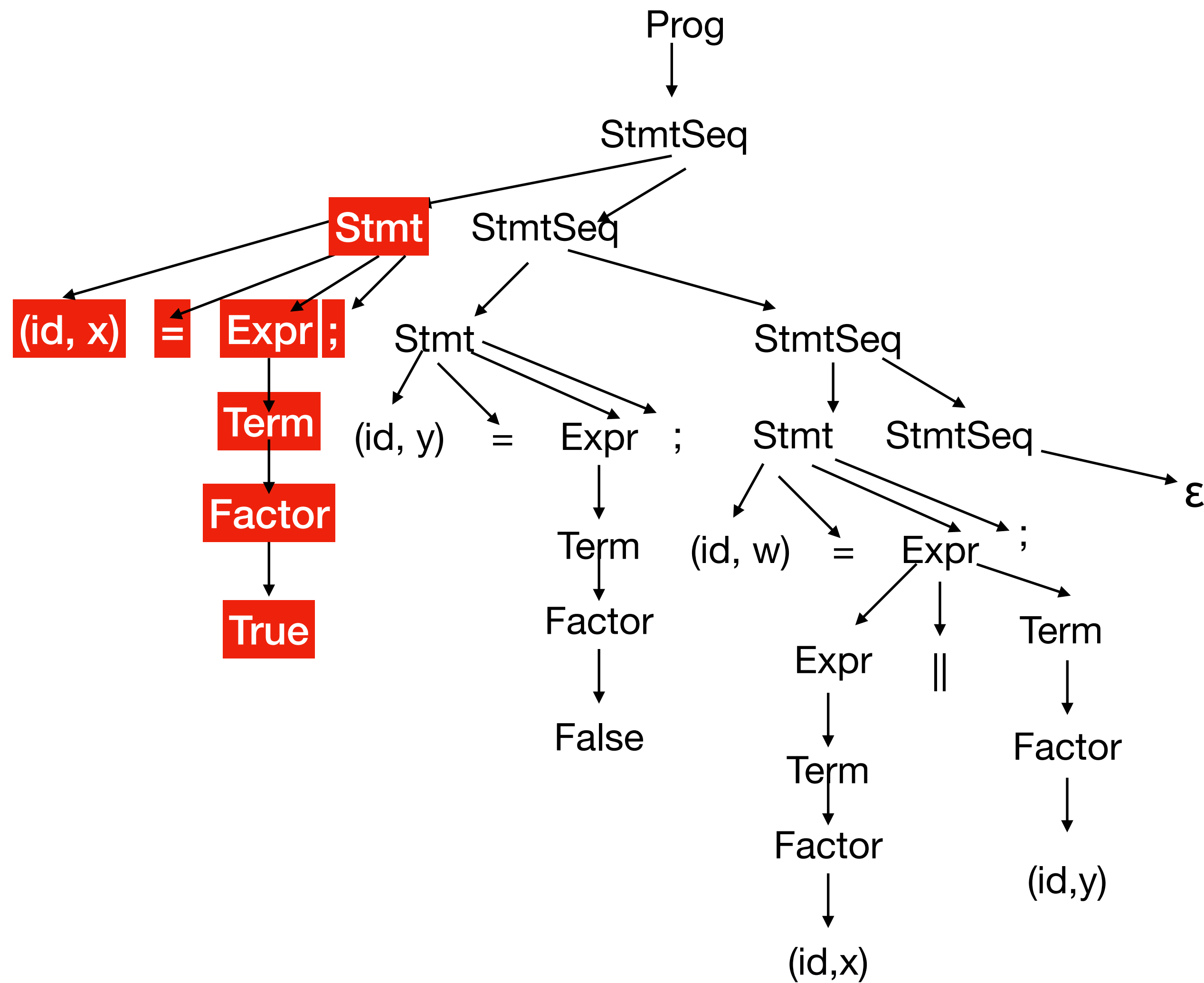


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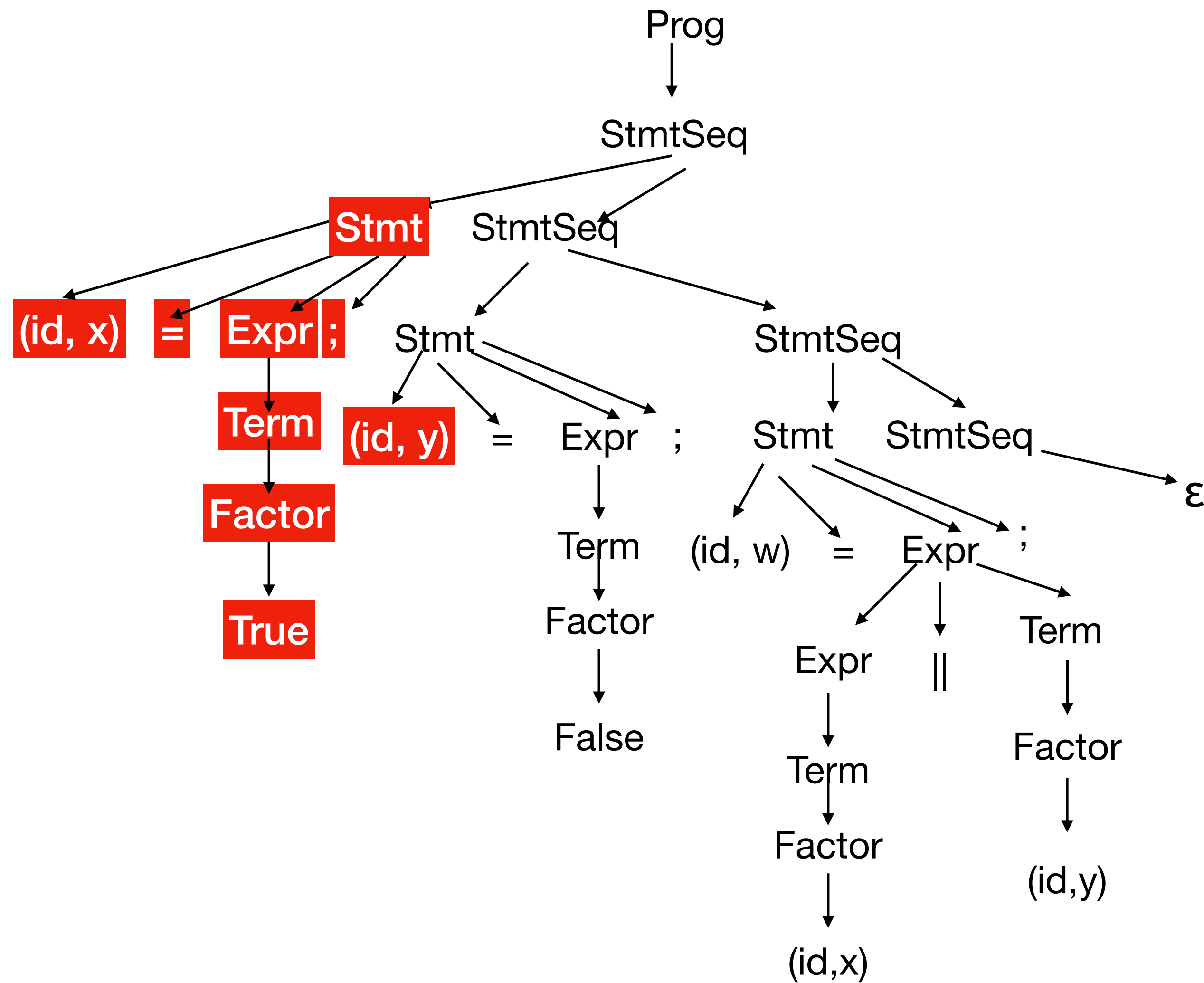


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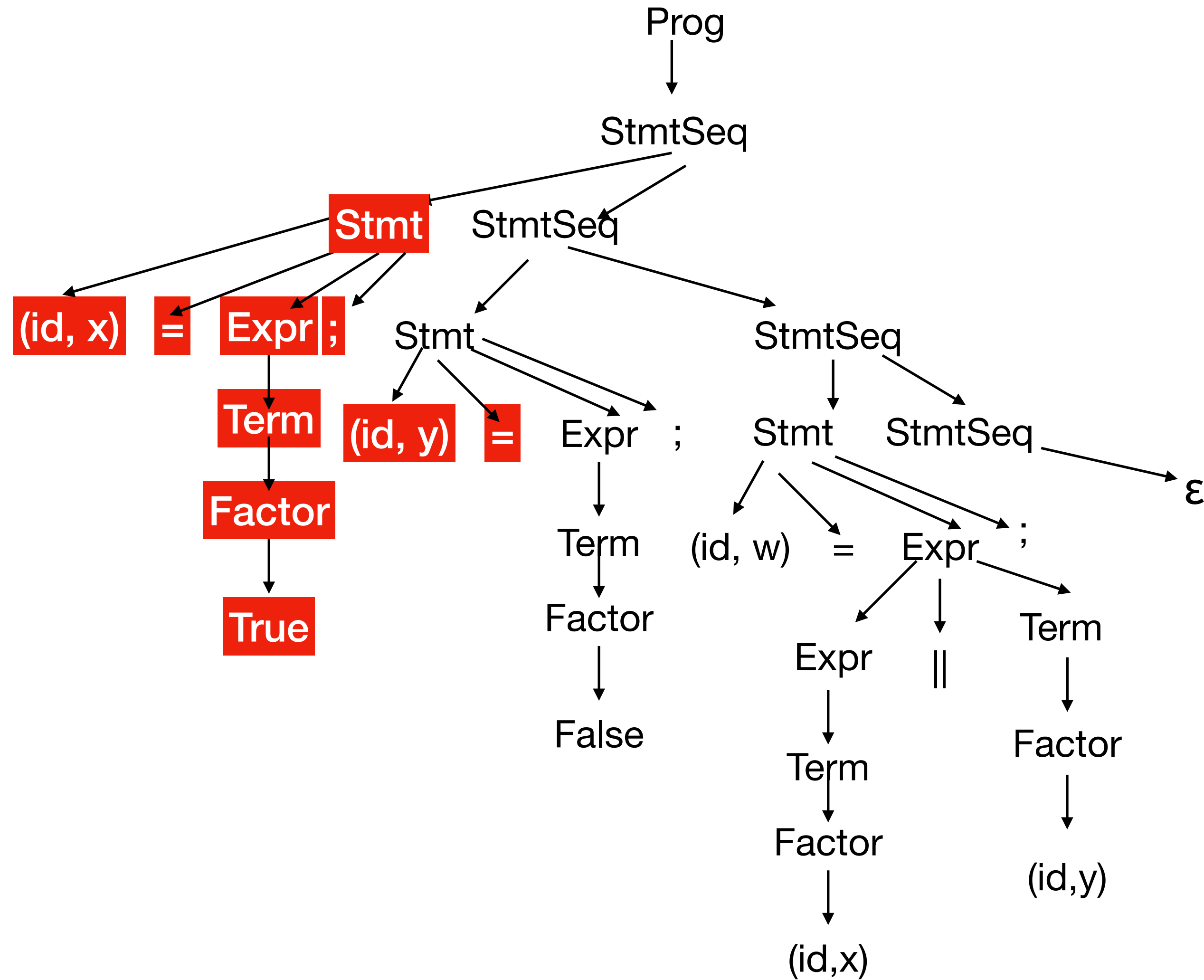


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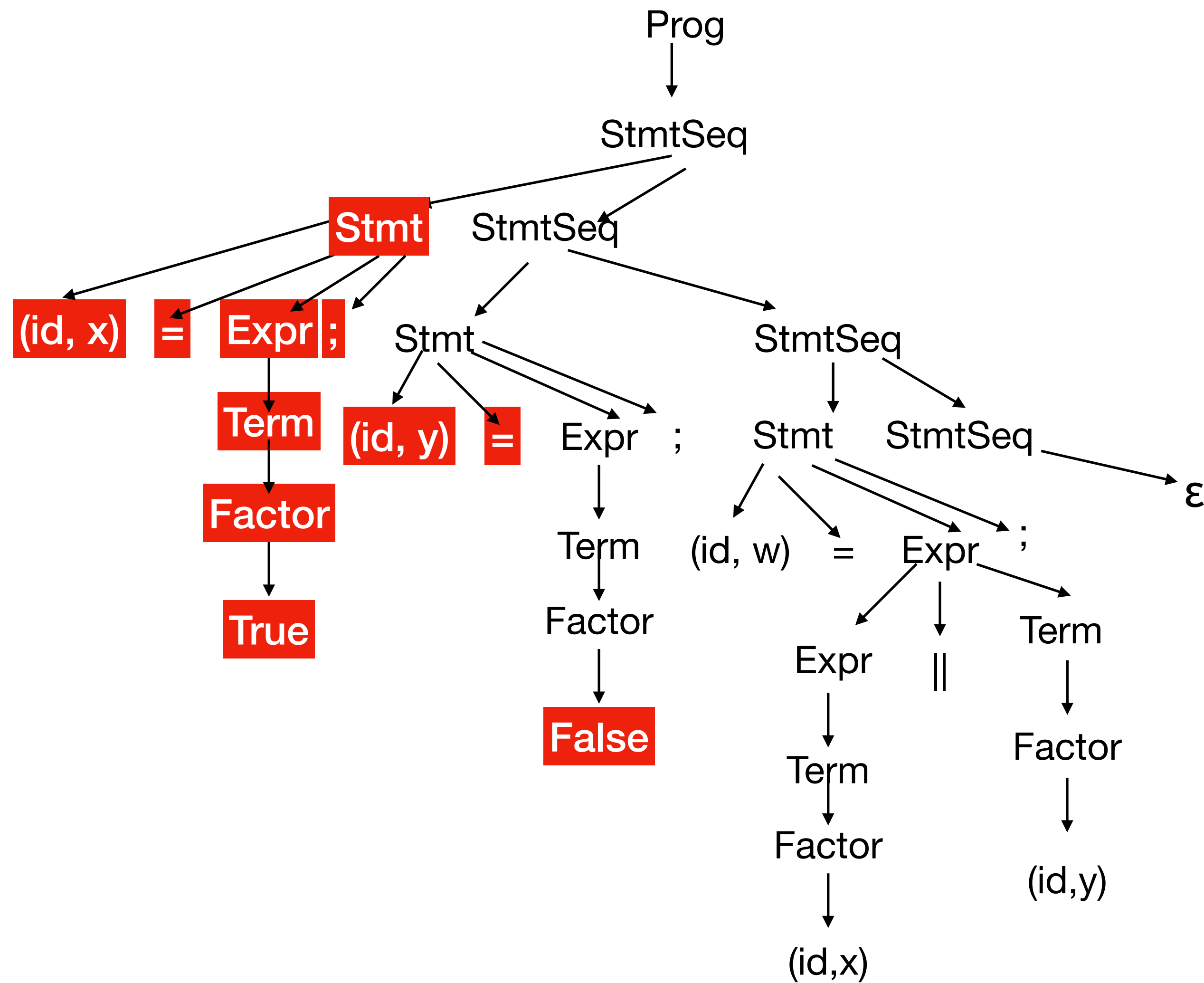


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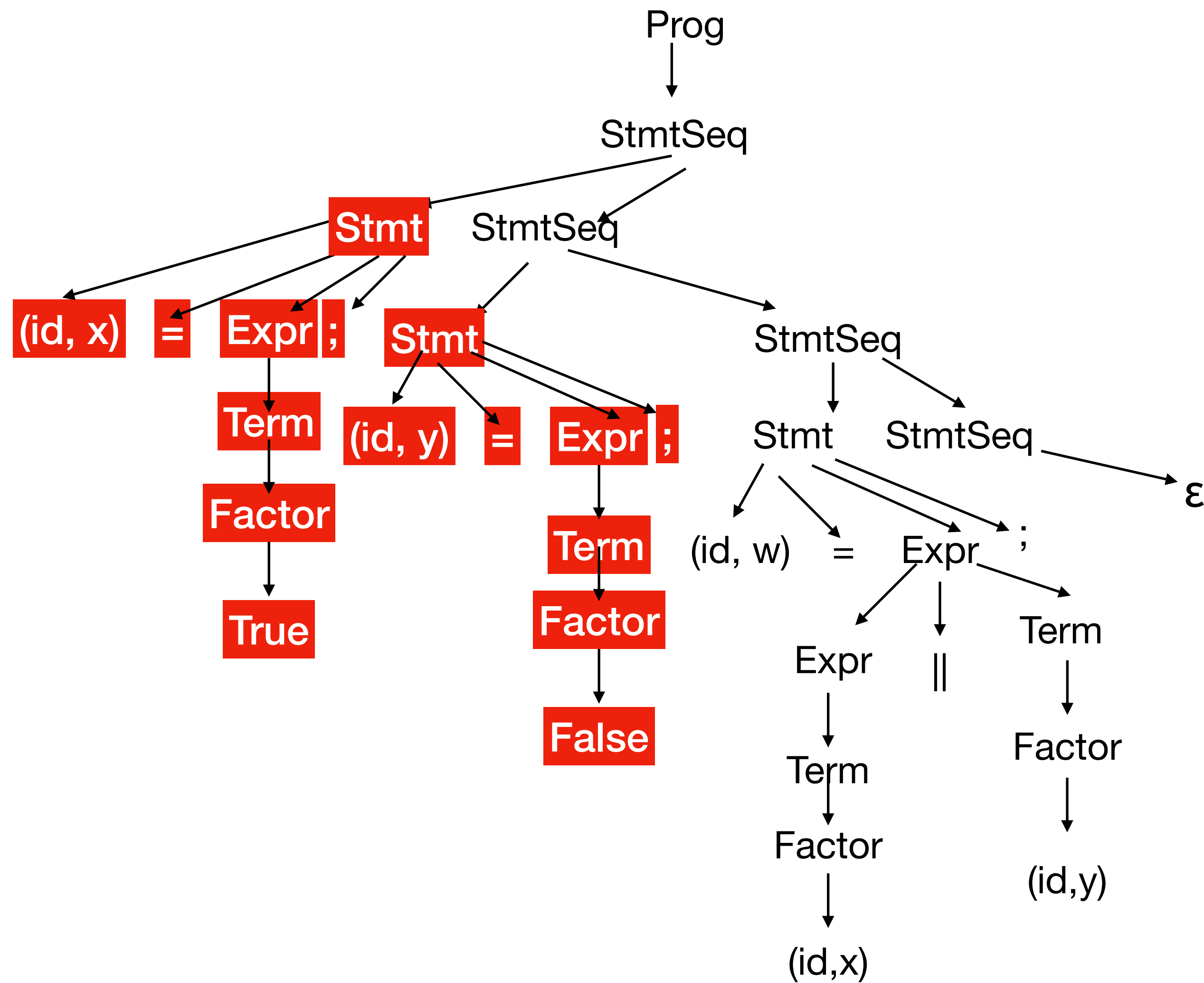


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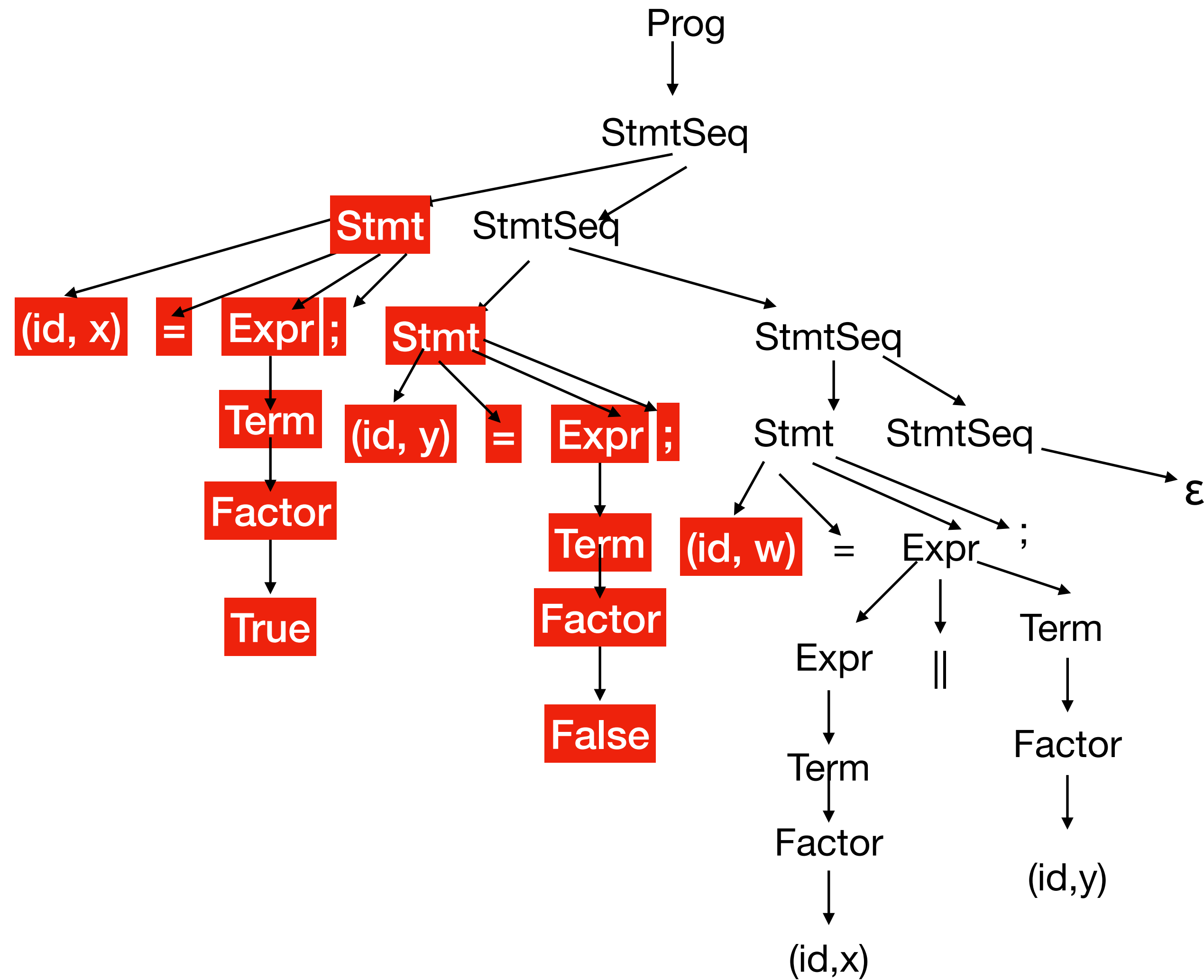


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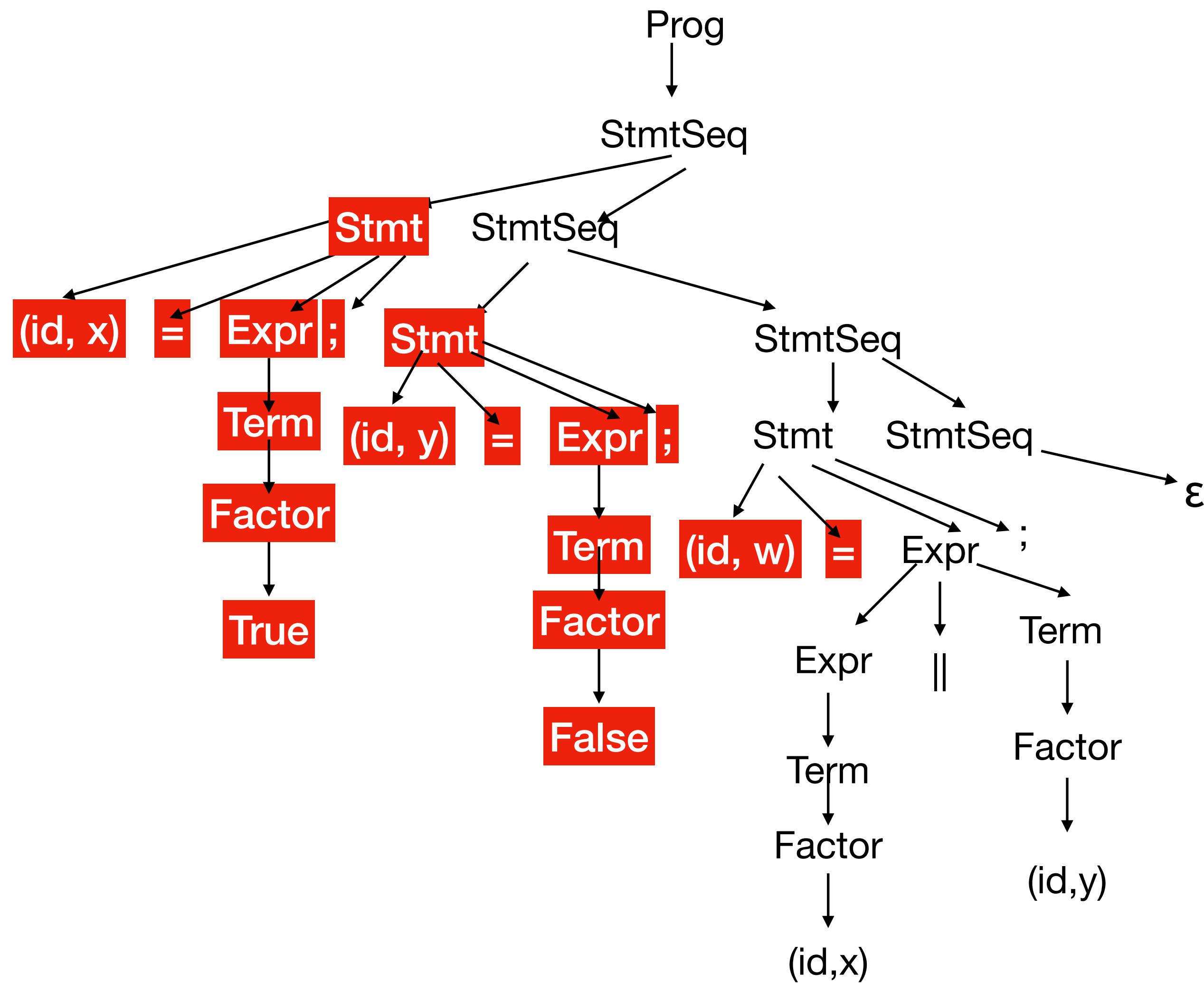
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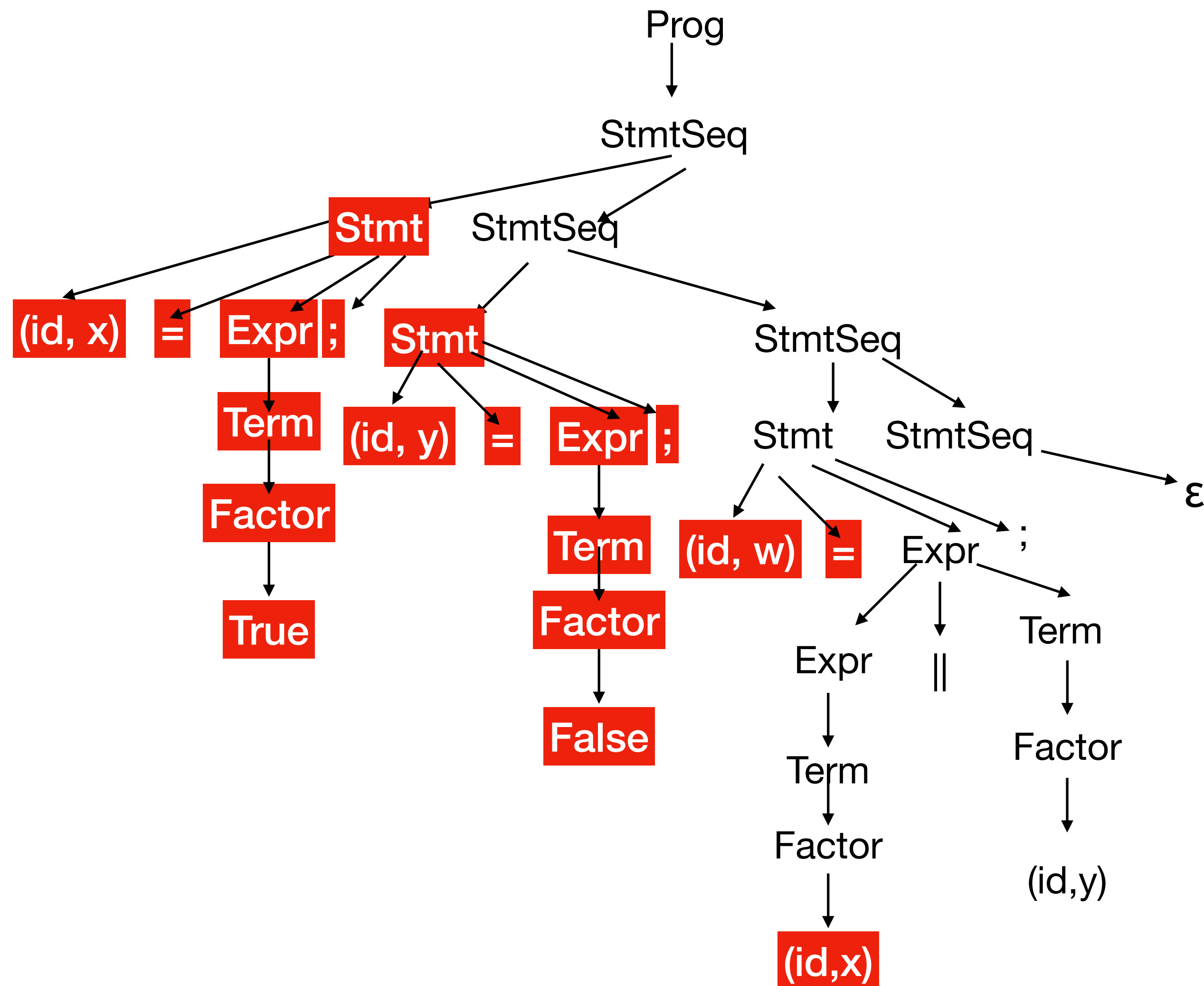


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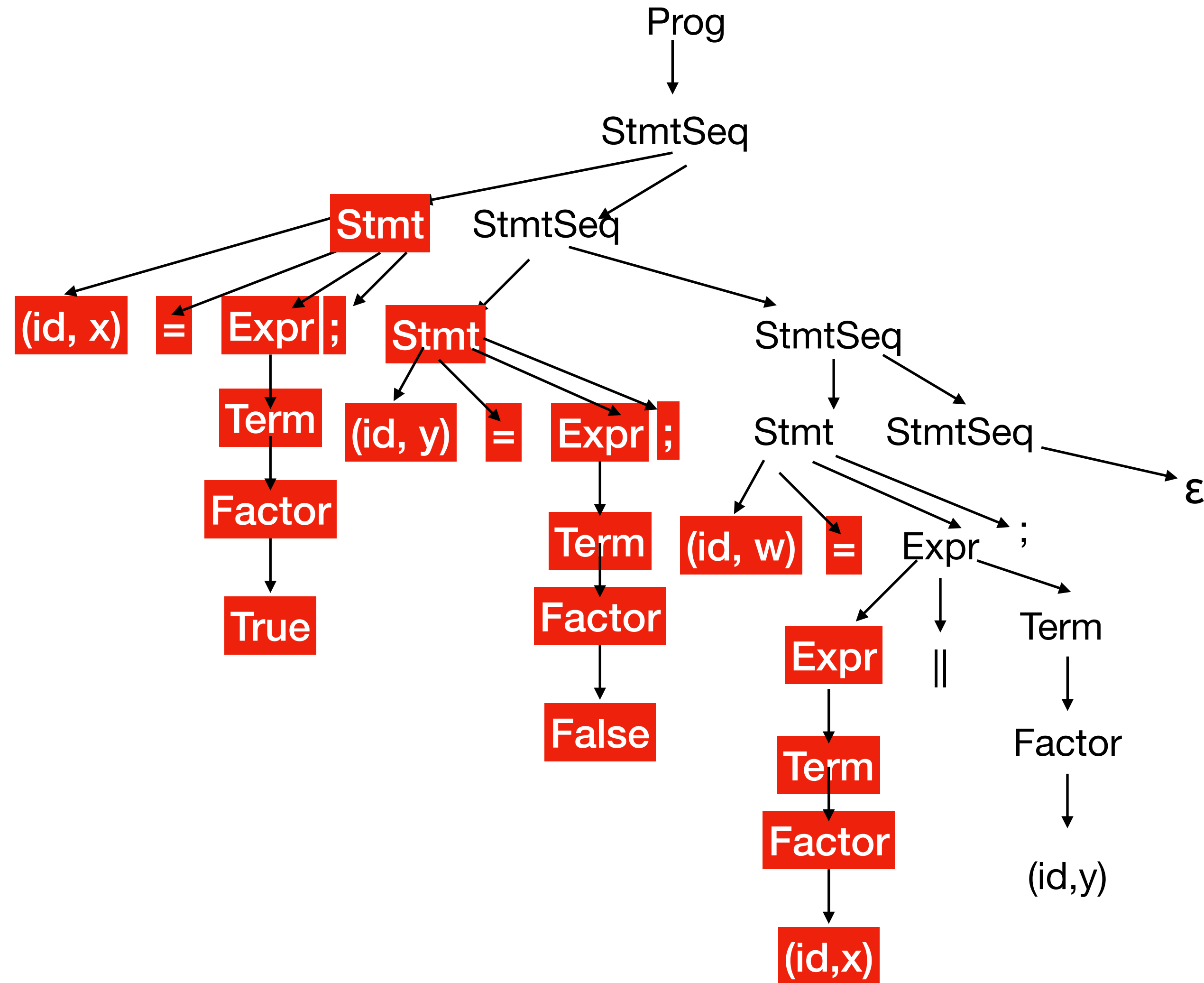


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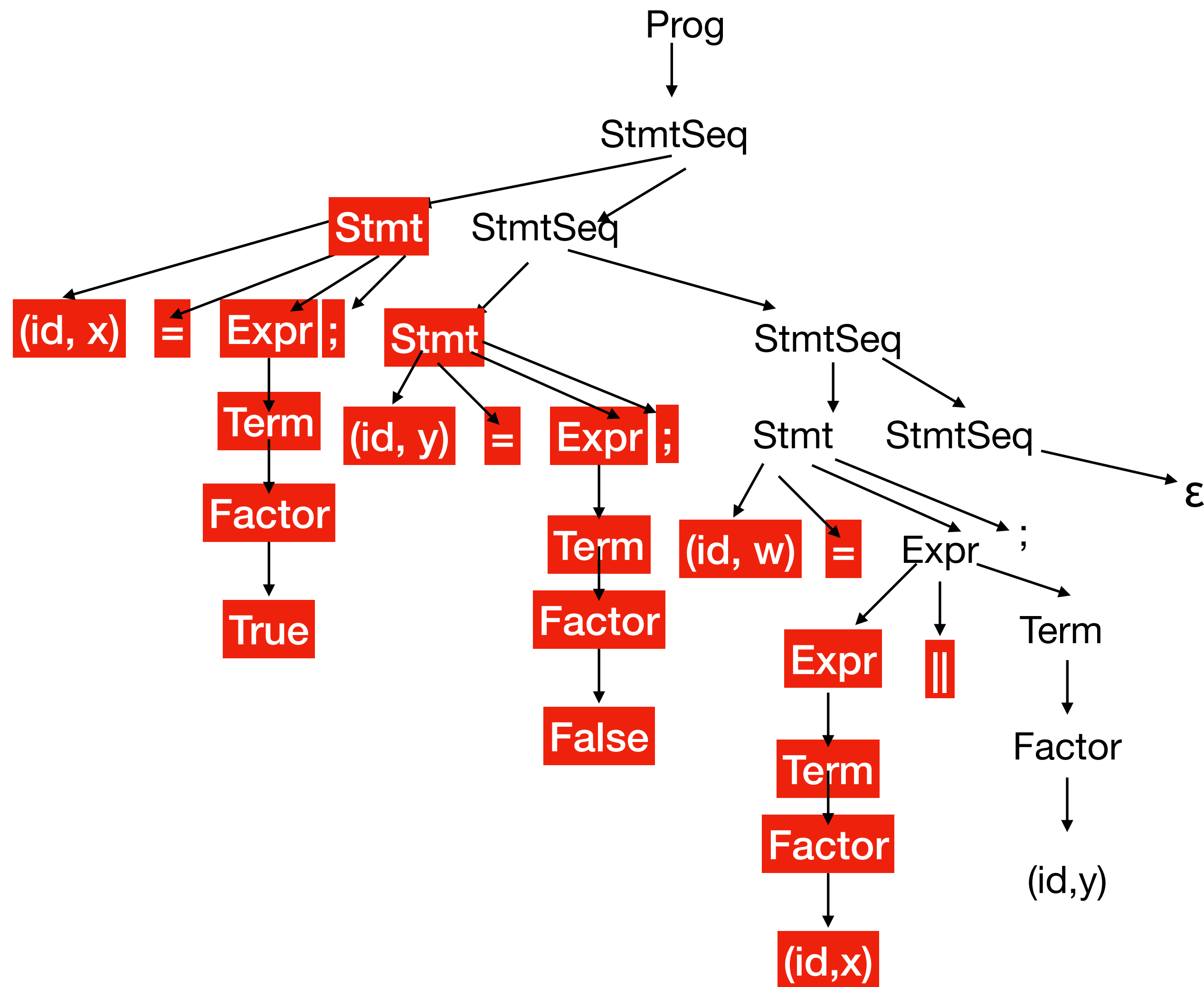


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 Term  $\rightarrow$  Term && Factor  
 Term  $\rightarrow$  Factor  
 Factor  $\rightarrow$  ! Factor  
 Factor  $\rightarrow$  ( Expr )  
 Factor  $\rightarrow$  Id  
 Factor  $\rightarrow$  True  
 Factor  $\rightarrow$  False

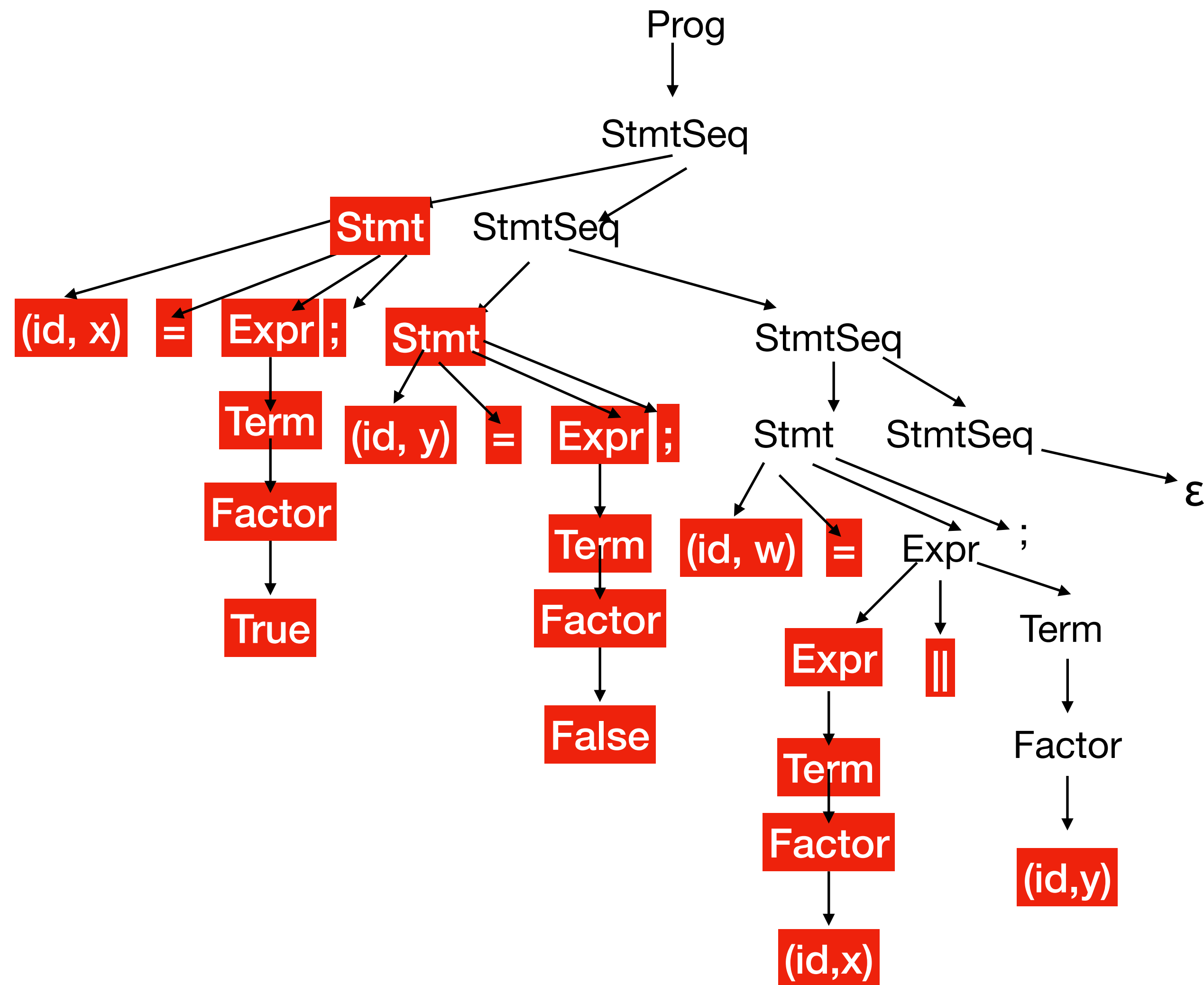


x = True;  
 y = False;  
 w = x || y;

# Example Program

## Bottom Parse

Prog  $\rightarrow$  StmtSeq  
 StmtSeq  $\rightarrow$  Stmt StmtSeq  
 StmtSeq  $\rightarrow$   $\epsilon$   
 Stmt  $\rightarrow$  Id = Expr ;  
 Expr  $\rightarrow$  Expr || Term  
 Expr  $\rightarrow$  Term  
 Term  $\rightarrow$  Term && Factor  
 Term  $\rightarrow$  Factor  
 Factor  $\rightarrow$  ! Factor  
 Factor  $\rightarrow$  ( Expr )  
 Factor  $\rightarrow$  Id  
 Factor  $\rightarrow$  True  
 Factor  $\rightarrow$  False



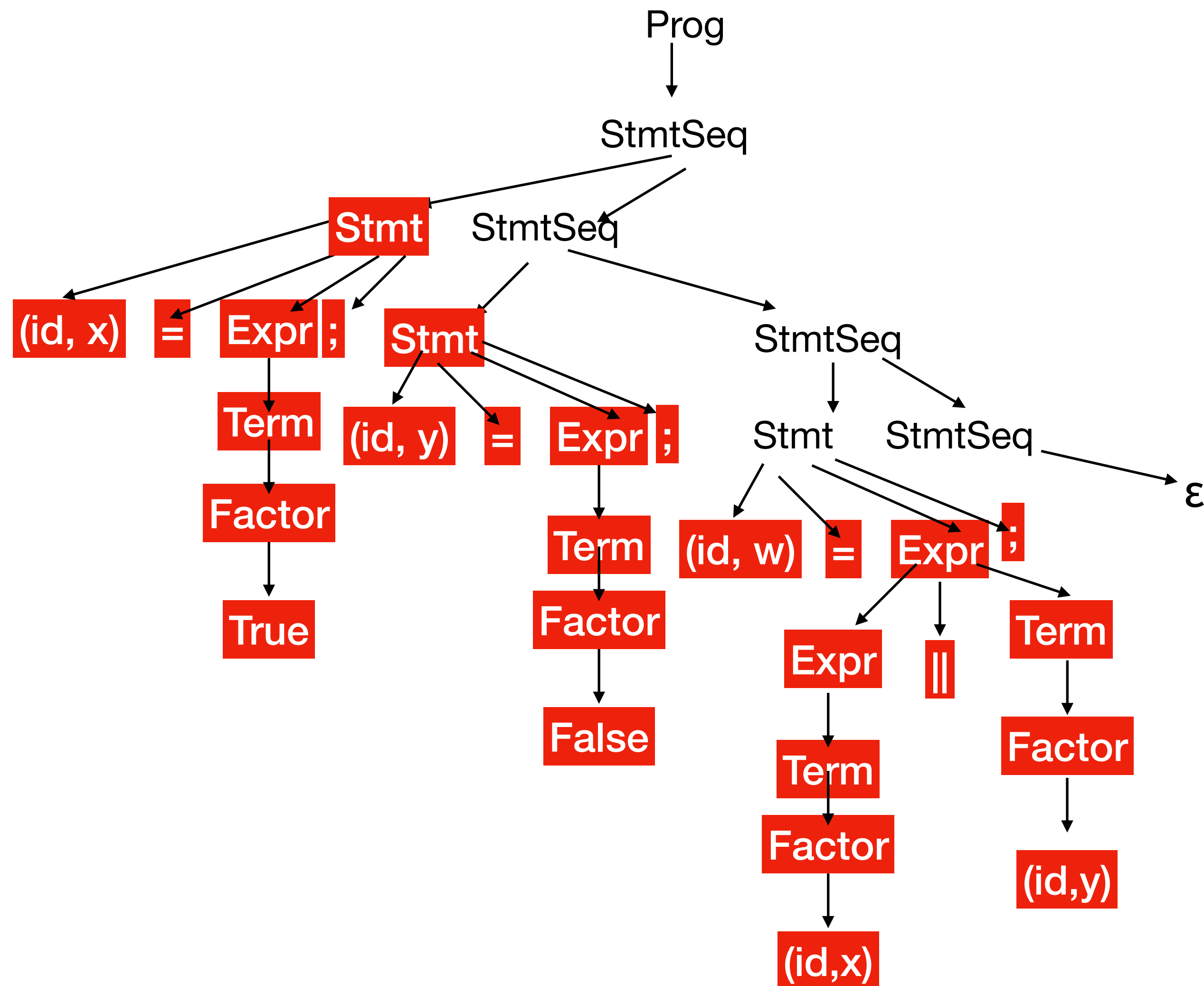
x = True;  
 y = False;  
 w = x || y;



# Example Program

## Bottom Parse

Prog  $\rightarrow$  StmtSeq  
 StmtSeq  $\rightarrow$  Stmt StmtSeq  
 StmtSeq  $\rightarrow$   $\epsilon$   
 Stmt  $\rightarrow$  Id = Expr ;  
 Expr  $\rightarrow$  Expr || Term  
 Expr  $\rightarrow$  Term  
 Term  $\rightarrow$  Term && Factor  
 Term  $\rightarrow$  Factor  
 Factor  $\rightarrow$  ! Factor  
 Factor  $\rightarrow$  ( Expr )  
 Factor  $\rightarrow$  Id  
 Factor  $\rightarrow$  True  
 Factor  $\rightarrow$  False

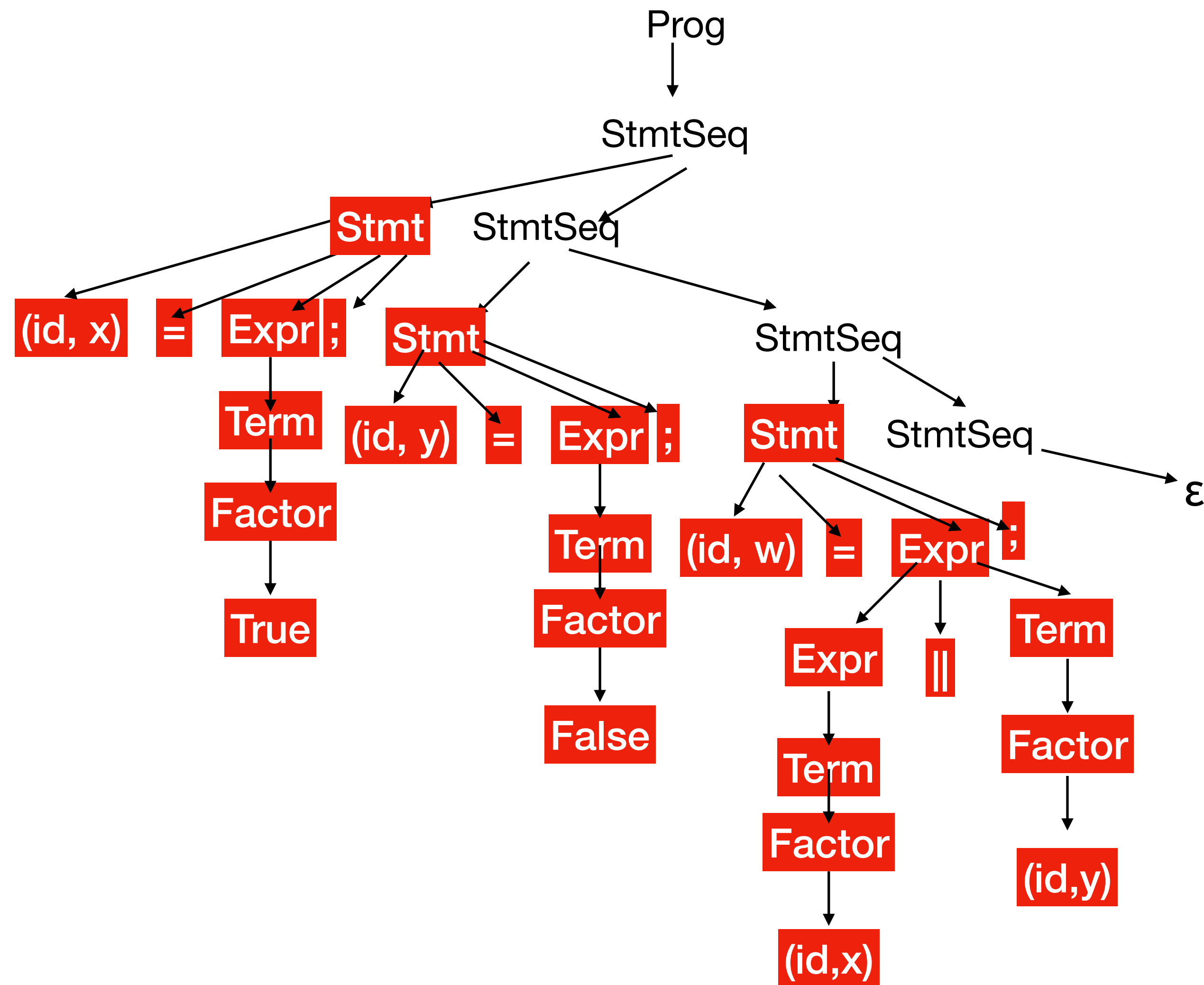


x = True;  
 y = False;  
 w = x || y;

# Example Program

## Bottom Parse

Prog  $\rightarrow$  StmtSeq  
 StmtSeq  $\rightarrow$  Stmt StmtSeq  
 StmtSeq  $\rightarrow$   $\epsilon$   
 Stmt  $\rightarrow$  Id = Expr ;  
 Expr  $\rightarrow$  Expr || Term  
 Expr  $\rightarrow$  Term  
 Term  $\rightarrow$  Term && Factor  
 Term  $\rightarrow$  Factor  
 Factor  $\rightarrow$  ! Factor  
 Factor  $\rightarrow$  ( Expr )  
 Factor  $\rightarrow$  Id  
 Factor  $\rightarrow$  True  
 Factor  $\rightarrow$  False



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

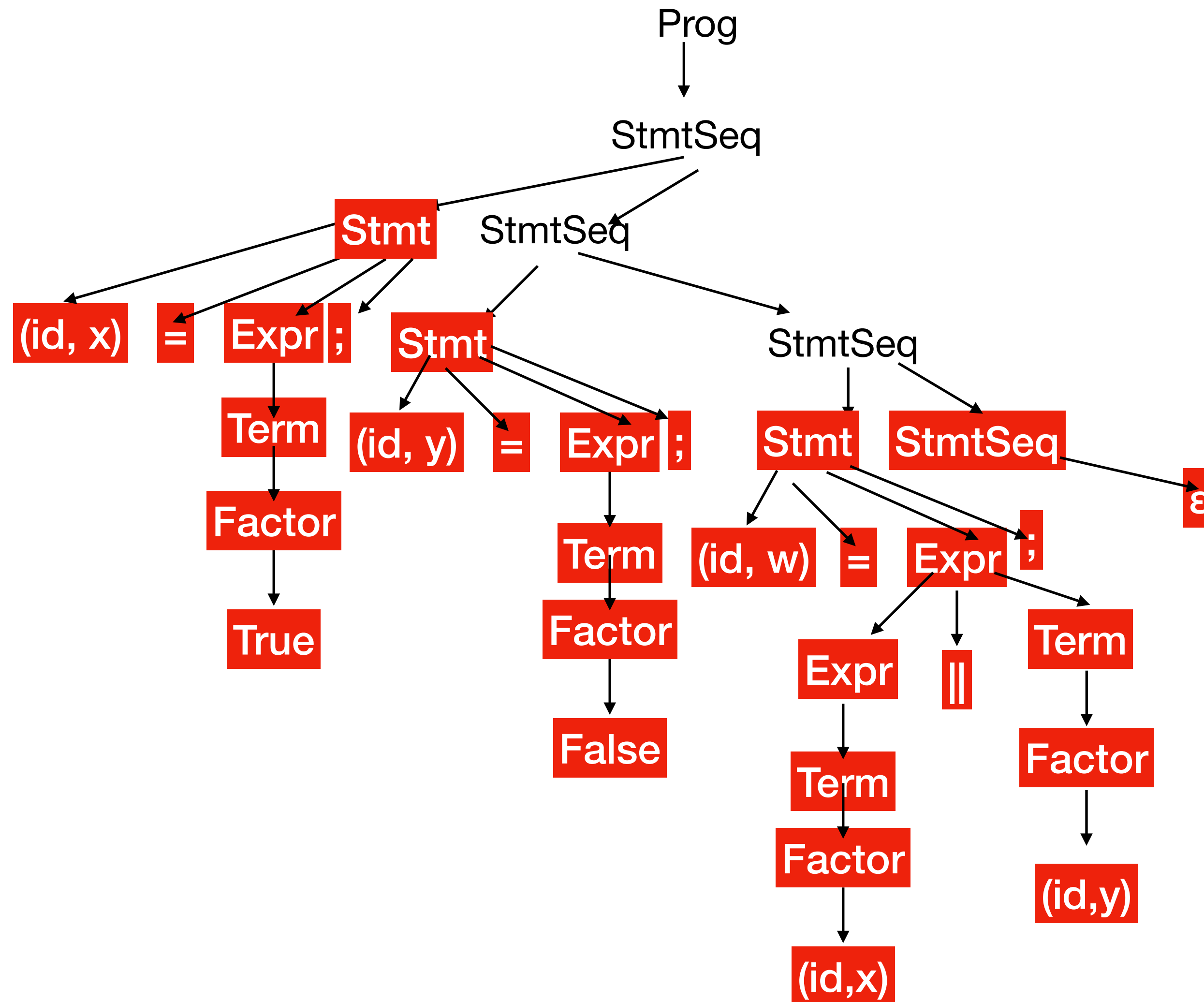


# Example Program

## Bottom Parse

Prog  $\rightarrow$  StmtSeq  
 StmtSeq  $\rightarrow$  Stmt StmtSeq  
 StmtSeq  $\rightarrow$   $\epsilon$   
 Stmt  $\rightarrow$  Id = Expr ;  
 Expr  $\rightarrow$  Expr || Term  
 Expr  $\rightarrow$  Term  
 Term  $\rightarrow$  Term && Factor  
 Term  $\rightarrow$  Factor  
 Factor  $\rightarrow$  ! Factor  
 Factor  $\rightarrow$  ( Expr )  
 Factor  $\rightarrow$  Id  
 Factor  $\rightarrow$  True  
 Factor  $\rightarrow$  False

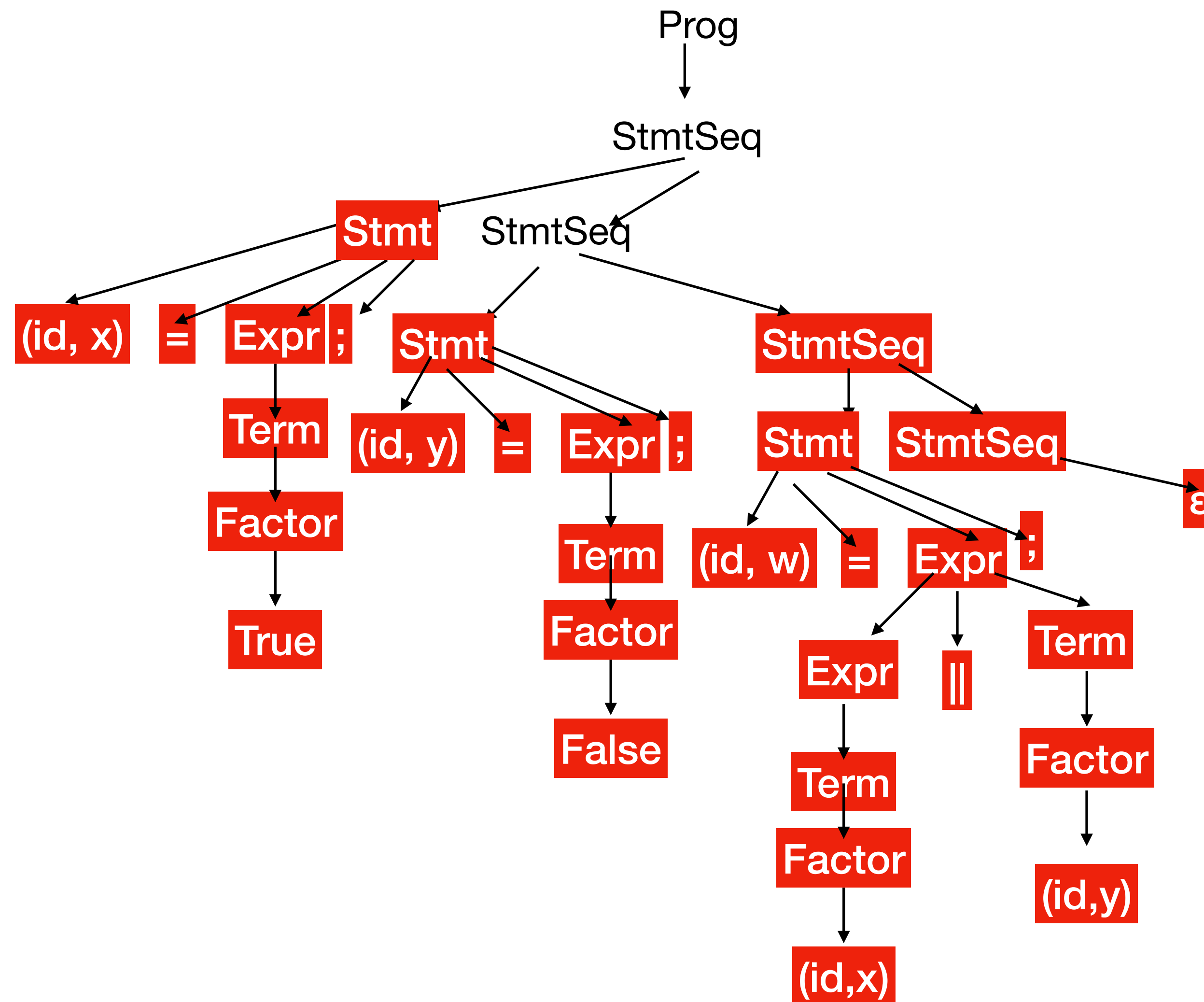
x = True;  
 y = False;  
 w = x || y;



# Example Program

## Bottom Parse

Prog  $\rightarrow$  StmtSeq  
 StmtSeq  $\rightarrow$  Stmt StmtSeq  
 StmtSeq  $\rightarrow$   $\epsilon$   
 Stmt  $\rightarrow$  Id = Expr ;  
 Expr  $\rightarrow$  Expr || Term  
 Expr  $\rightarrow$  Term  
 Term  $\rightarrow$  Term && Factor  
 Term  $\rightarrow$  Factor  
 Factor  $\rightarrow$  ! Factor  
 Factor  $\rightarrow$  ( Expr )  
 Factor  $\rightarrow$  Id  
 Factor  $\rightarrow$  True  
 Factor  $\rightarrow$  False

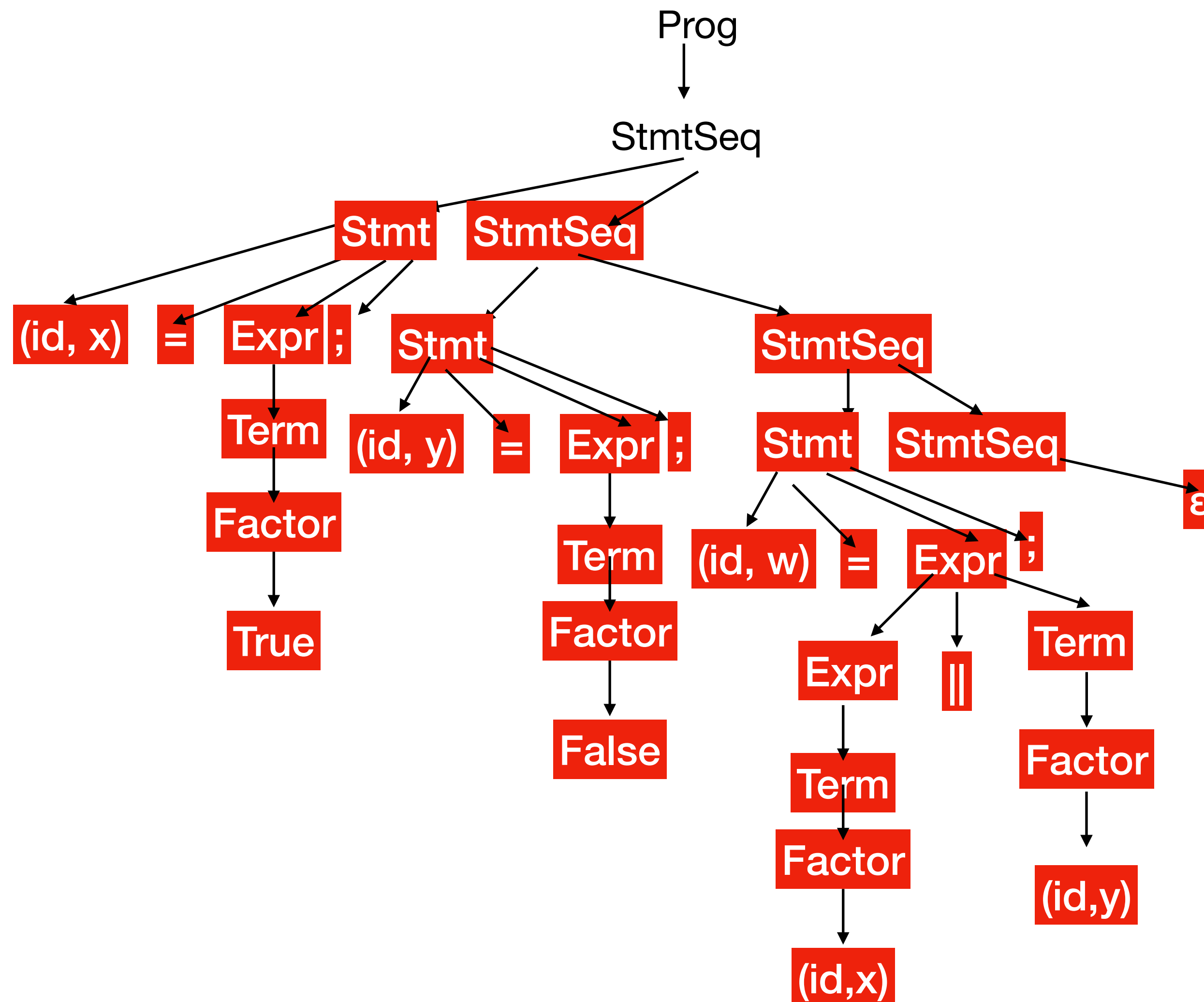


x = True;  
 y = False;  
 w = x || y;

# Example Program

## Bottom Parse

Prog  $\rightarrow$  StmtSeq  
 StmtSeq  $\rightarrow$  Stmt StmtSeq  
 StmtSeq  $\rightarrow$   $\epsilon$   
 Stmt  $\rightarrow$  Id = Expr ;  
 Expr  $\rightarrow$  Expr || Term  
 Expr  $\rightarrow$  Term  
 Term  $\rightarrow$  Term && Factor  
 Term  $\rightarrow$  Factor  
 Factor  $\rightarrow$  ! Factor  
 Factor  $\rightarrow$  ( Expr )  
 Factor  $\rightarrow$  Id  
 Factor  $\rightarrow$  True  
 Factor  $\rightarrow$  False

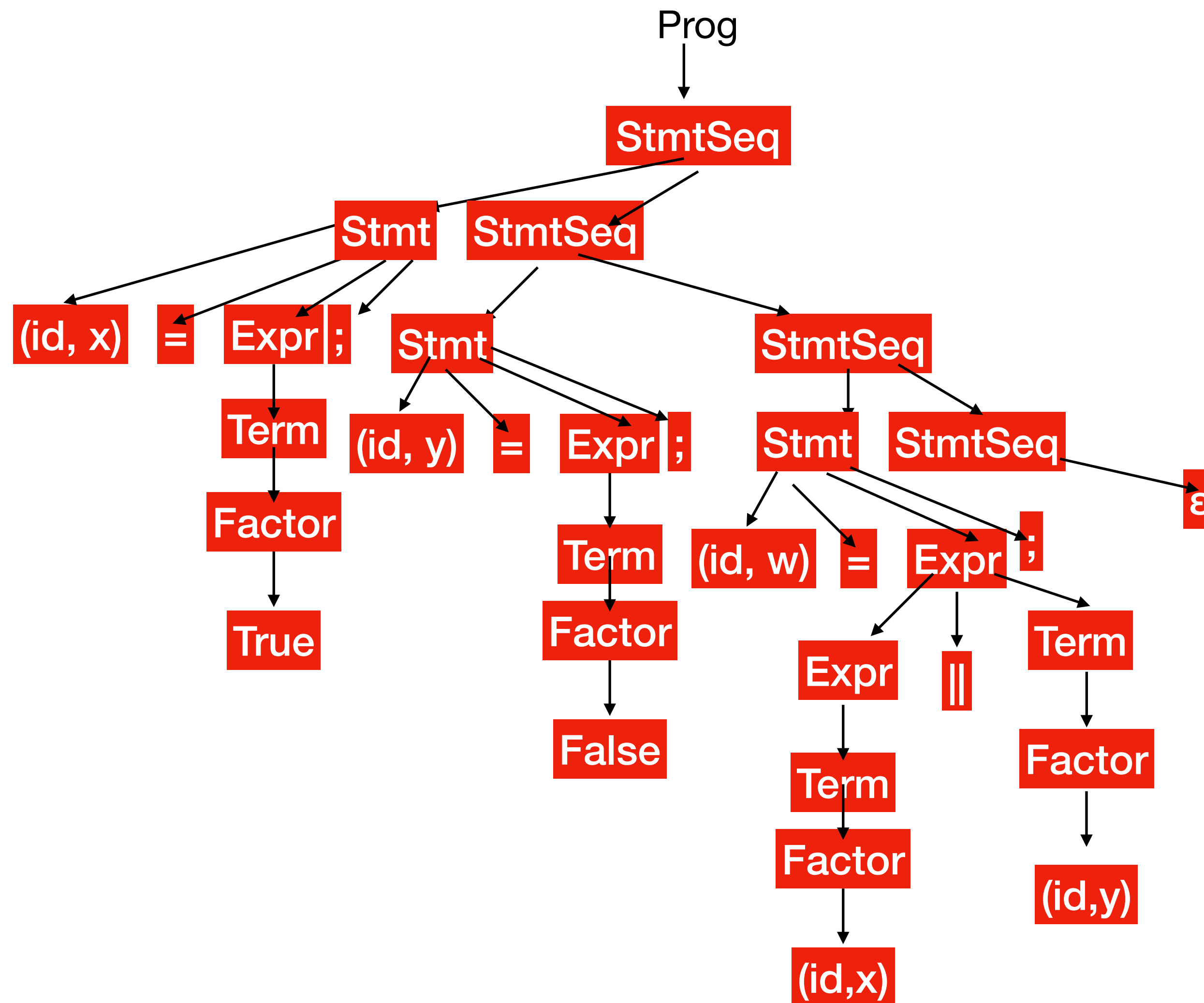


x = True;  
 y = False;  
 w = x || y;

# Example Program

## Bottom Parse

Prog  $\rightarrow$  StmtSeq  
 StmtSeq  $\rightarrow$  Stmt StmtSeq  
 StmtSeq  $\rightarrow$   $\epsilon$   
 Stmt  $\rightarrow$  Id = Expr ;  
 Expr  $\rightarrow$  Expr || Term  
 Expr  $\rightarrow$  Term  
 Term  $\rightarrow$  Term && Factor  
 Term  $\rightarrow$  Factor  
 Factor  $\rightarrow$  ! Factor  
 Factor  $\rightarrow$  ( Expr )  
 Factor  $\rightarrow$  Id  
 Factor  $\rightarrow$  True  
 Factor  $\rightarrow$  False



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

# Example Program

## Bottom Parse

Prog -> StmtSeq  
 StmtSeq -> Stmt StmtSeq  
 StmtSeq ->  $\epsilon$   
 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;

