

CFG of X

1. $\text{program} \rightarrow \text{stmts} \mid \text{eof}$
2. $\text{stmts} \rightarrow \text{stmt} \mid \text{stmts} ; \text{stmt}$
3. $\text{stmt} \rightarrow \epsilon \mid \text{selection} \mid \text{iteration} \mid \text{assignment}$
4. $\text{selection} \rightarrow \text{if alts fi}$
5. $\text{iteration} \rightarrow \text{do alts od}$
6. $\text{alts} \rightarrow \text{alt} \mid \text{alts} :: \text{alt}$
7. $\text{alt} \rightarrow \text{guard} ? \text{stmts}$
8. $\text{guard} \rightarrow \text{expr}$
9. $\text{assignment} \rightarrow \text{vars} := \text{exprs}$

 $\mid \text{vars} := \text{subprogram} := \text{exprs}$
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10. $\text{vars} \rightarrow \text{id} \mid \text{vars} , \text{id}$
11. $\text{exprs} \rightarrow \text{expr} \mid \text{exprs} , \text{expr}$
12. $\text{subprogram} \rightarrow \text{id}$
13. $\text{expr} \rightarrow \text{disjunction}$
14. $\text{disjunction} \rightarrow \text{conjunction} \mid \text{disjunction or conjunction}$

15. conjunction \rightarrow negation | conjunction & negation

16. negation \rightarrow relation | \sim relation

17. relation \rightarrow sum

| sum < sum

| sum <= sum

| sum = sum

| sum \sim = sum

| sum >= sum

| sum > sum

18. sum \rightarrow term | - term | sum + term | sum - term

19. term \rightarrow factor | term * factor | term / factor

20. factor \rightarrow true | false | integer | real | id | (expr)