COMPILER LAB – Q – BATCH

SPOT QUESTION – 03-10-2024

The following ambiguous grammar leads to the dangling else problem due to nested if statements:

S -> 'if' E S | 'if' E S 'else' S | c
E -> b

In this grammar, it is unclear whether the else clause should be associated with the nearest if or a more distant one.

Describe the dangling else problem in the given grammar. Show an example of how the ambiguity occurs in nested if-else statements.

Modify the given grammar to resolve the dangling else problem. Ensure that else is always matched with the closest if. The new grammar should be unambiguous.