

CSC512 - Written Assignment 2

Question 1:

The following grammar is not suitable for a top-down predictive parser. Identify the problem and correct it by rewriting the grammar. Show that your new grammar satisfies the LL(1) condition.

$L \rightarrow Ra$	$R \rightarrow aba$	$Q \rightarrow bbc$
$ Qba$	$ caba$	$ bc$
	$ Rbc$	

Question 2:

Consider the following grammar:

$A \rightarrow Ba$	$C \rightarrow cB$
$B \rightarrow dab$	$C \rightarrow Ac$
$ Cb$	

- (1) Does this grammar has left recursions? If you believe so, try to rewrite the grammar to remove left recursions; the new grammar should describe the same set of expressions as the original grammar does.
- (2) Is the original grammar a LL(1) grammar? Justify your answer.

Question 3:

Write a grammar to describe all binary numbers that are multiples of four.