

Assignment 2 (IT3202-AUD)

① Design a Turing Machine for the following Language
 $L = \{ww^R \mid w \in \{0,1\}^*\}$

② Design a TM for $L = \{a^n b^{n+1} \mid n \geq 1\}$

③ Design a TM to find 2's complement.

④ Compute First() & Follow() for the following grammar:

(i) $P \rightarrow \alpha QRS$

$Q \rightarrow yz/z$

$R \rightarrow w/e$

$S \rightarrow \gamma$

(ii) $S \rightarrow (L)/a$

$L \rightarrow SL'$

$L' \rightarrow ,SL'/\epsilon$

⑤ Check whether following grammar is LL(1) or not.

$S \rightarrow iCtSS'/a$ $C \rightarrow b$

$S' \rightarrow eS/\epsilon$

⑥ Construct LR(0) canonical items for the following grammars:-

(i) $S \rightarrow aAB/Ba$

$A \rightarrow c$

$B \rightarrow c$

(ii) $E \rightarrow E+T/T$

$T \rightarrow T \times F/F$

$F \rightarrow (E)/id$

Check above grammar can be used for LR(0) parser?
If yes, then parse any valid input string using stack.

⑦ In context of LR(0), what do you mean by handle and ~~handle~~ handle pruning.

Submission Date:- 24/04/2024 till 5pm.
(Deadline)