

# Assignment II

## THEORY OF COMPUTATION



Group Members:

**Yadav Ankit Ramesh(2020A7PS2046H)**  
**Shubh Sanjay Badjate(2020A7PS0028H)**  
**Rishi Poddar (2020A7PS1195H)**

**Dr. Raghunath Reddy M**

## Unambiguous Grammar for Basic C

$P \rightarrow DS \mid S$   
 $D \rightarrow \text{int varlist};$   
 $\text{varlist} \rightarrow \text{var, varlist} \mid \text{var}$   
 $\text{var} \rightarrow \{a-z\}^+$   
 $\text{num} \rightarrow \{0-9\}^+$   
 $S \rightarrow RS \mid WS \mid AS \mid \text{FORS} \mid R \mid W \mid A \mid \text{FOR}$   
 $R \rightarrow \text{read var};$   
 $W \rightarrow \text{write var|num};$   
 $A \rightarrow \text{var} = C;$   
 $A2 \rightarrow \text{var} = C$   
 $C \rightarrow XC'$   
 $C' \rightarrow >XC' \mid \varepsilon$   
 $X \rightarrow EX'$   
 $X' \rightarrow ==EX' \mid \varepsilon$   
 $E \rightarrow TE'$   
 $E' \rightarrow PTE' \mid \varepsilon$   
 $P \rightarrow + \mid -$   
 $T \rightarrow FT'$   
 $T' \rightarrow MFT' \mid \varepsilon$   
 $M \rightarrow * \mid /$   
 $F \rightarrow (C) \mid \text{var} \mid \varepsilon$   
 $\text{FOR} \rightarrow \text{for}(C|A2;C;C|A2)\{S\};$