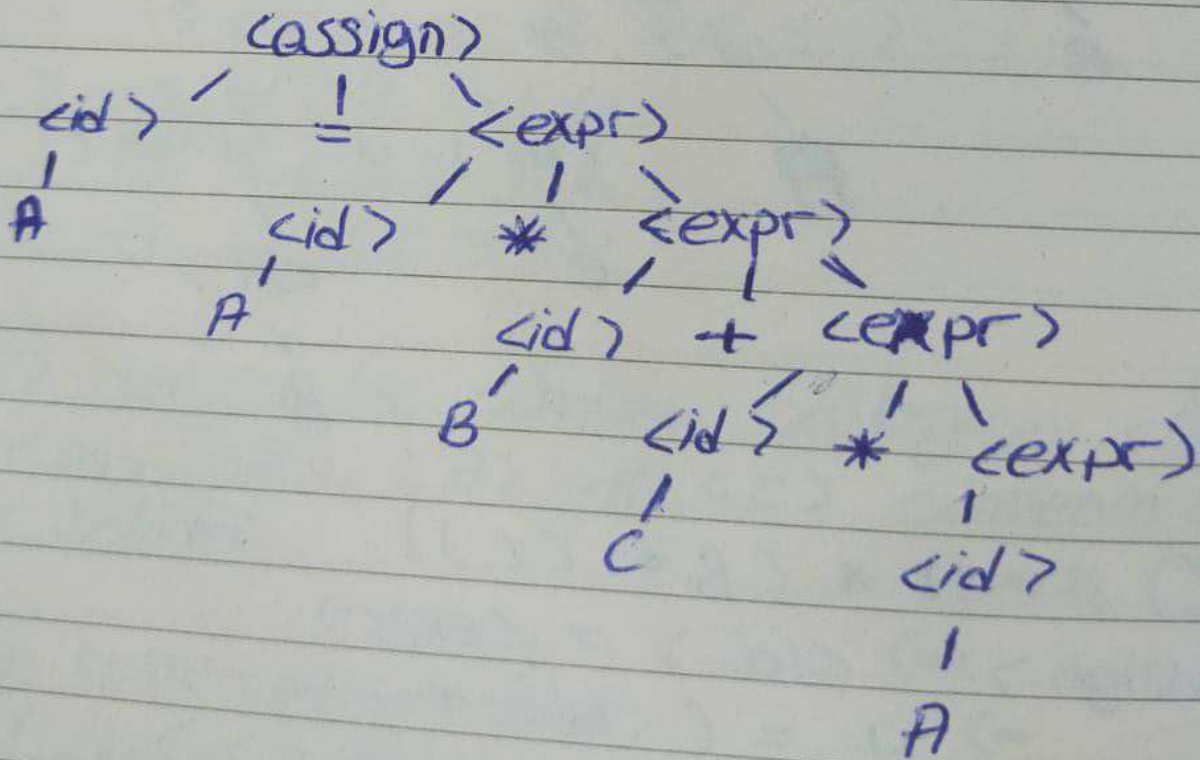


$$A = A * (B + (C * A))$$

a) $\langle \text{assign} \rangle \Rightarrow \langle \text{id} \rangle = \langle \text{expr} \rangle$ /...../.....
 $\Rightarrow A = \langle \text{id} \rangle * \langle \text{expr} \rangle$
 $\Rightarrow A = A * \langle \text{expr} \rangle$
 $\Rightarrow A = A * (\langle \text{id} \rangle + \langle \text{expr} \rangle)$
 $\Rightarrow A = A * (B + \langle \text{expr} \rangle)$
 $\Rightarrow A = A * (B + (\langle \text{id} \rangle * \langle \text{expr} \rangle))$
 $\Rightarrow A = A * (B + (C * \langle \text{expr} \rangle))$
 $\Rightarrow A = A * (B + (C * \langle \text{id} \rangle))$
 $\Rightarrow A = A * (B + (C * A))$



$$B = C * (A * C + B)$$

b) $\langle \text{assign} \rangle \Rightarrow \langle \text{id} \rangle = \langle \text{expr} \rangle$

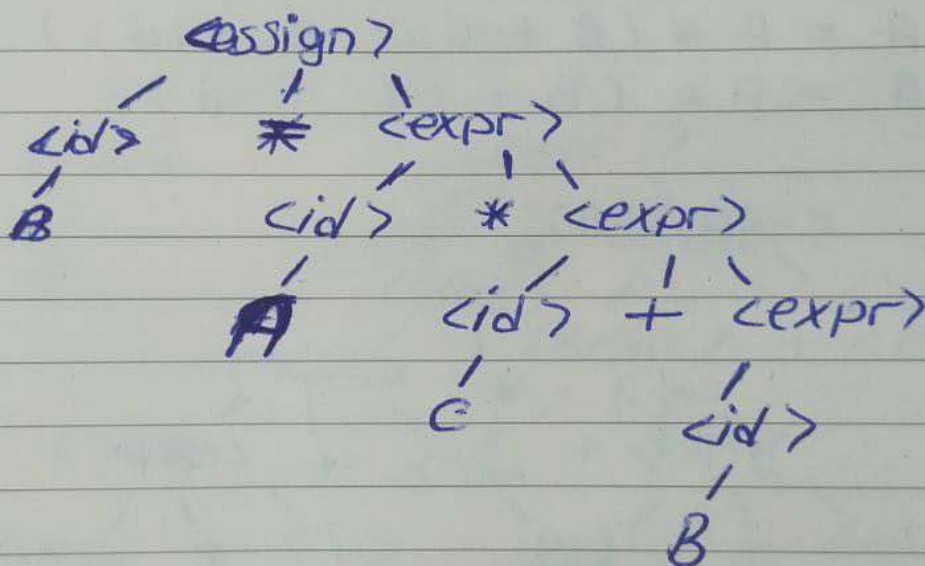
$$\Rightarrow C = \langle \text{expr} \rangle$$

$$\Rightarrow C = \langle \text{id} \rangle * \langle \text{expr} \rangle$$

$$\Rightarrow C = A * \langle \text{id} \rangle + \langle \text{expr} \rangle$$

$$\Rightarrow C = A * \langle \text{id} \rangle + \langle \text{id} \rangle$$

$$\Rightarrow C = A * C + B$$



c) $A = A * (B + (C))$

$\langle \text{assign} \rangle \Rightarrow \langle \text{id} \rangle = \langle \text{expr} \rangle$

$$\Rightarrow A = (\langle \text{id} \rangle * \langle \text{expr} \rangle)$$

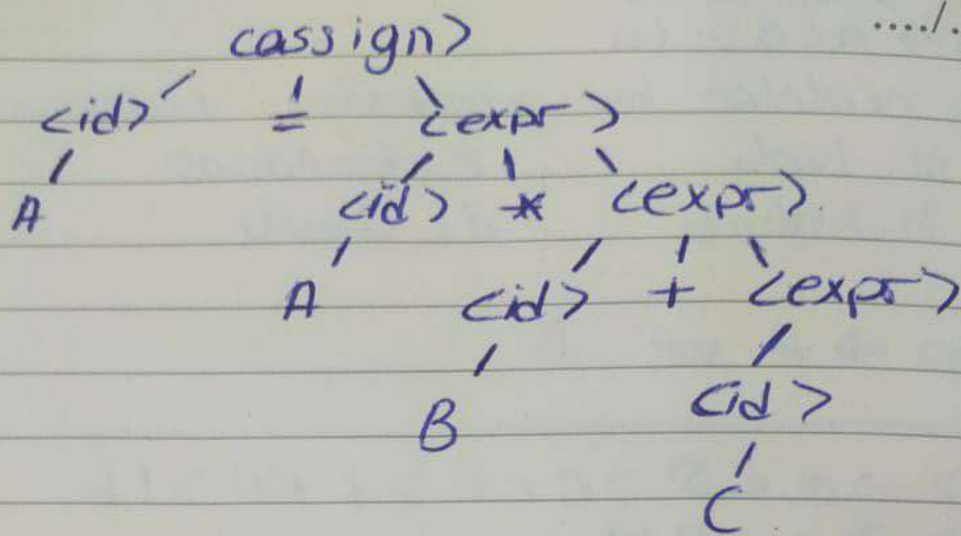
$$\Rightarrow A = A * (\langle \text{expr} \rangle)$$

$$\Rightarrow A = A * (\langle \text{id} \rangle + \langle \text{expr} \rangle)$$

$$\Rightarrow A = A * (\langle \text{id} \rangle + (\langle \text{id} \rangle))$$

$$\Rightarrow A = A * (B + (C))$$

C şıkkının parse tree 'si



$\langle S \rangle \rightarrow \langle A \rangle \langle B \rangle \langle C \rangle$

$\langle A \rangle \rightarrow a \langle A \rangle \mid a$

$\rightarrow b \langle B \rangle \mid b$

$\rightarrow c \langle C \rangle \mid c$

$\langle S \rangle$ simgesi bir cümlelerin başlangıcını ifade ederken, $\langle A \rangle$, $\langle B \rangle$ ve $\langle C \rangle$ cümlelerin yapısını belirler.

$\langle A \rangle$ kısmı aa ya da a

$\langle B \rangle$ kısmı bb ya da b

$\langle C \rangle$ kısmı cc ya da c olabilir.

Örnek olarak aabbcc cümlesi bu gramerden türemiş olabilir.

$\langle S \rangle \rightarrow \langle A \rangle a \langle B \rangle b$

$\langle A \rangle \rightarrow \langle A \rangle b \mid b$

$\langle B \rangle \rightarrow a \langle B \rangle \mid a$

..../..../....

Hangi cümleler bu gramerden türemiştir?

a. baab

c. bbaaaaa

b. bbbab

d. bbaab

Cevap \Rightarrow A ve D

$\langle S \rangle \rightarrow a \langle S \rangle c \langle B \rangle \mid \langle A \rangle \mid b$

$\langle A \rangle \rightarrow c \langle A \rangle \mid c$

$\langle B \rangle \rightarrow d \mid \langle A \rangle$

Hangi cümleler bu gramerden türemiştir?

a. abcd

b. acccbcd

c. acccbcc

d. acd

e. accc

Cevap \Rightarrow A, C ve B