

ASSIGNMENT - 2

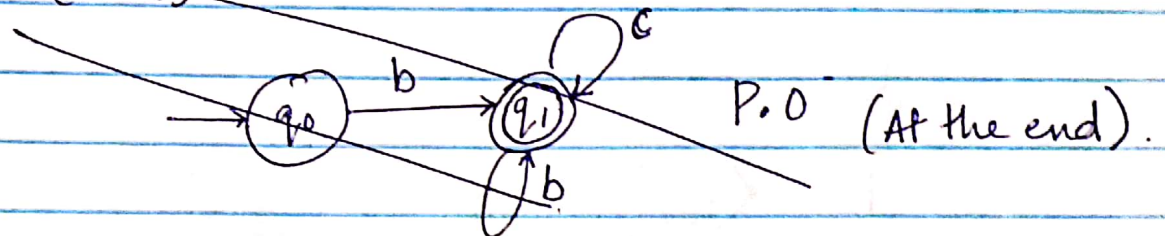
PROGRAMMING LANGUAGES

Q1. REGULAR EXPRESSION

1. $[a]^+ (a|b)^*$

Q2. AUTOMATION

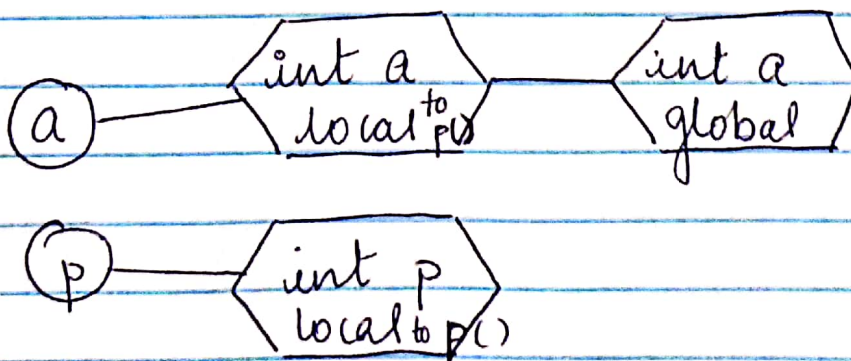
$b(c+b)^*$

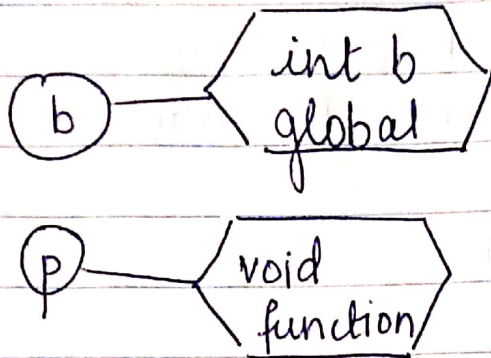


Q3. Symbol Table:

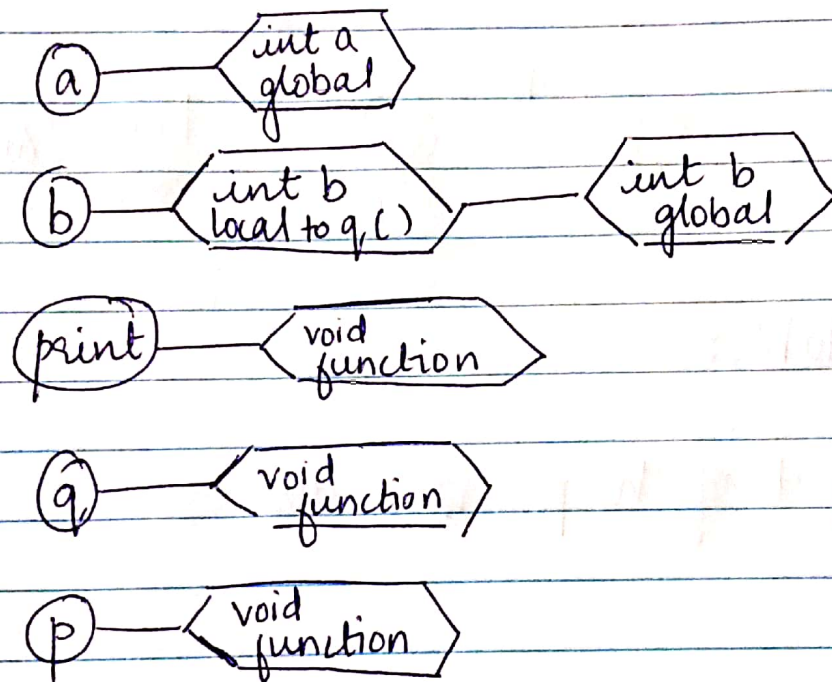
~~The output of the program will be~~
B

* Point 1:

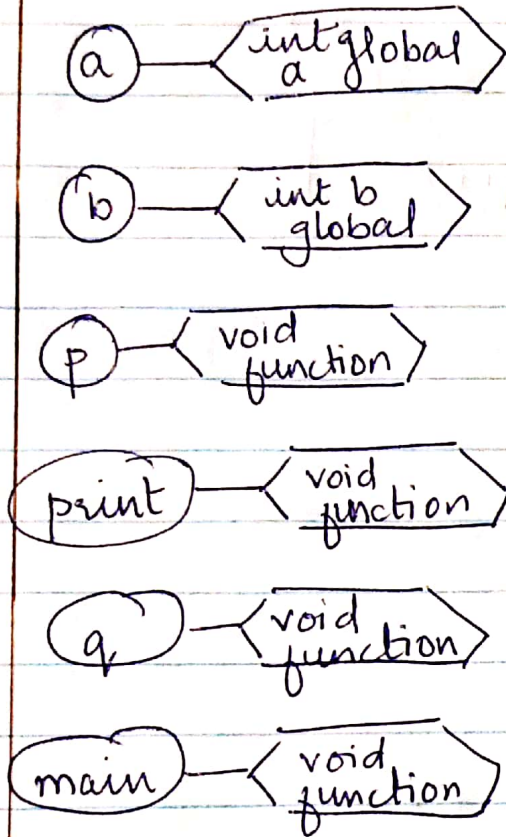




* Point 2



* Point 3.



b). The program using static scope prints:

3

1

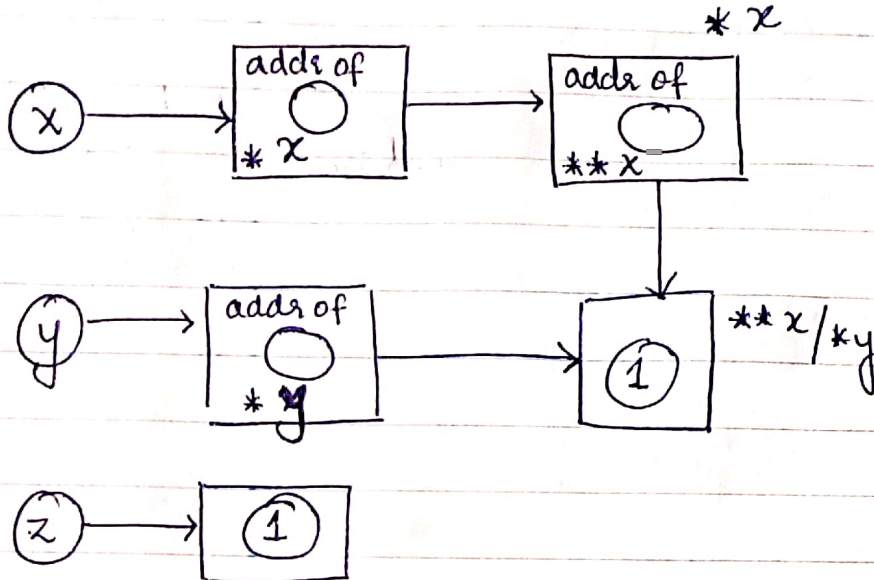
c). The program using dynamic scope prints

3

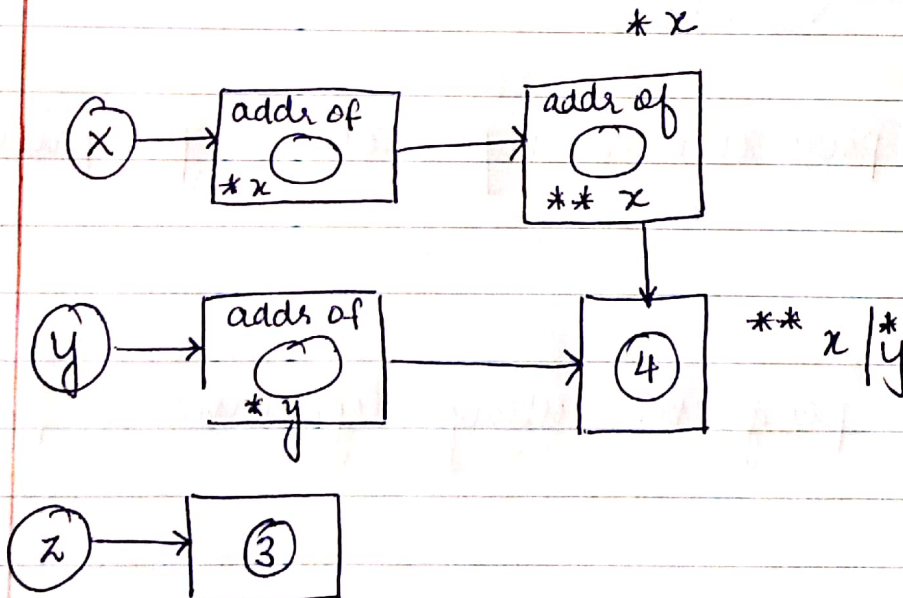
4

Q4. Box and Circle Diagram:

line 11



line 15



**x & *y are aliases at line 15

o/p
 line 12 $\rightarrow *y = 1$
 line 14 $\rightarrow *y = 1$
 line 16 $\rightarrow x = 3$

Q5. Call by Value:

1st print statement:

* Call By Value : $\begin{matrix} 1 \\ \hookrightarrow i \end{matrix}$, $\begin{matrix} 2 \\ \hookrightarrow a[0] \end{matrix}$ $\begin{matrix} 1 \\ \hookrightarrow a[1] \end{matrix}$ $\begin{matrix} 0 \\ \hookrightarrow a[2] \end{matrix}$

* Call By Reference: $\begin{matrix} 1 \\ \hookrightarrow i \end{matrix}$ $\begin{matrix} 2 \\ \hookrightarrow a[0] \end{matrix}$ $\begin{matrix} 1 \\ \hookrightarrow a[1] \end{matrix}$ $\begin{matrix} 0 \\ \hookrightarrow a[2] \end{matrix}$

* Call By Name $\begin{matrix} 0 \\ \hookrightarrow i \end{matrix}$ $\begin{matrix} 2 \\ \hookrightarrow a[0] \end{matrix}$ $\begin{matrix} 1 \\ \hookrightarrow a[1] \end{matrix}$ $\begin{matrix} 2 \\ \hookrightarrow a[2] \end{matrix}$

2nd Print statement

* Call By Value : $\begin{matrix} 2 \\ \hookrightarrow a[0] \end{matrix}$ $\begin{matrix} 1 \\ \hookrightarrow a[1] \end{matrix}$ $\begin{matrix} 0 \\ \hookrightarrow a[2] \end{matrix}$

* Call By Reference: $\begin{matrix} 2 \\ \hookrightarrow a[0] \end{matrix}$ $\begin{matrix} 0 \\ \hookrightarrow a[1] \end{matrix}$ $\begin{matrix} 0 \\ \hookrightarrow a[2] \end{matrix}$

* Call By Name $\begin{matrix} 0 \\ \hookrightarrow a[0] \end{matrix}$ $\begin{matrix} 1 \\ \hookrightarrow a[1] \end{matrix}$ $\begin{matrix} 2 \\ \hookrightarrow a[2] \end{matrix}$

Q2. AUTOMATION:

$b(c+b)^*$

