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**Admission no.: U19CS009**

**SYSTEM SOFTWARES - ASSIGNMENT -4**

**1) Write a C program to recognize strings under ‘a\*’, ‘a\*b+’, ‘abb’.**

**Code=>**

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| **//U19CS009**  **//Brijesh Rohit**  **#include<stdio.h>**  **#include<string.h>**  **#include<stdlib.h>**  **#include<stdbool.h>**  **int main()**  **{**  **char s[100], c;**  **int i = 0;**  **printf("We have following grammar rules :");**  **printf("\n1 : 'a'");**  **printf("\n2 : 'abb'");**  **printf("\n3 : 'a\*b+'\n");**  **printf("Enter a string : ");**  **int n = scanf("%[^\n]s", s);**  **if (n != 1)**  **{**  **printf("You didn't enterd any input!!\nHence it is recognized under 'a\*' grammar.\n");**  **return 0;**  **}**  **printf("Your input is ");**  **if (strlen(s) == 3)**  **{**  **if (s[0] == 'a' && s[1] == 'b' && s[2] == 'b')**  **{**  **printf("recognized under 'abb' grammar.\n");**  **return 0;**  **}**  **}**  **int aflag = 0, bflag = 0;**  **for (int i = 0; s[i] != '\0'; i++)**  **{**  **if (s[i] == 'a')**  **{**  **if (bflag == 1)**  **{**  **printf("not recognized under any mentioned grammar!!\n");**  **return 0;**  **}**  **aflag = 1;**  **}**  **else** if(s[i] == 'b')  bflag = 1;  else  {  printf("not recognized under any mentioned grammar!!\n");  return 0;  }  **}**  **if (aflag = 1 && bflag == 0)**  **printf("recognized under 'a\*' grammar.\n");**  **else if (aflag >= 0 && bflag > 0)**  **printf("recognized under 'a\*b+' grammar.\n");**  **else**  **printf("not recognized under any mentioned grammar!!\n");**  **return 0;**  **}** |

**Output=>**

