CODE:

Write a C program to find FIRST() - predictive parser for the given grammar.

Code:

#include <stdio.h>

#include <string.h>

#include <ctype.h>

#define MAX\_RULES 10

#define MAX\_LEN 10

char grammar[MAX\_RULES][MAX\_LEN];

char first[MAX\_RULES][MAX\_LEN];

int n;

void find\_first(char c, int index) {

if (!isupper(c)) {

first[index][strlen(first[index])] = c;

return;

}

for (int i = 0; i < n; i++) {

if (grammar[i][0] == c) {

for (int j = 2; grammar[i][j] != '\0'; j++) {

find\_first(grammar[i][j], index);

if (!isupper(grammar[i][j])) break;

}

}

}

}

int main() {

printf("Enter number of productions: ");

scanf("%d", &n);

printf("Enter productions (e.g., A=Ba):\n");

for (int i = 0; i < n; i++) scanf("%s", grammar[i]);

for (int i = 0; i < n; i++) find\_first(grammar[i][0], i);

printf("\nFIRST sets:\n");

for (int i = 0; i < n; i++)

printf("FIRST(%c) = {%s}\n", grammar[i][0], first[i]);

return 0;

}

OUTPUT:

