7.Write a C program to check whether a given string belongs to the language defined by a Context Free Grammar (CFG)

S → A101A, A → 0A | 1A | ε

PROGRAM:

#include <stdio.h>

#include <string.h>

int A(char \*input);

int S(char \*input);

int A(char \*input) {

if (\*input == '0') {

return A(input + 1);

} else if (\*input == '1') {

return A(input + 1);

} else if (\*input == '\0') {

return 1;

}

return 0;

}

int S(char \*input) {

if (\*input == '1') {

input++;

if (A(input)) {

if (input[0] == '0' && input[1] == '1') {

input += 2;

if (A(input)) {

return 1;

}

}

}

}

return 0;

}

int main() {

char input[100];

printf("Enter the input string (0s and 1s only): ");

scanf("%s", input);

if (S(input) && \*input == '\0') {

printf("Accepted\n");

} else {

printf("Not Accepted\n");

}

return 0;

}

OUTPUT:

