AFLL ASSIGNMENT-2

GROUP MEMBERS

K SIDDHARTH RAO SRN-PES1UG21CS265

KARTHIK NAMBOORI SRN-PES1UG21CS269

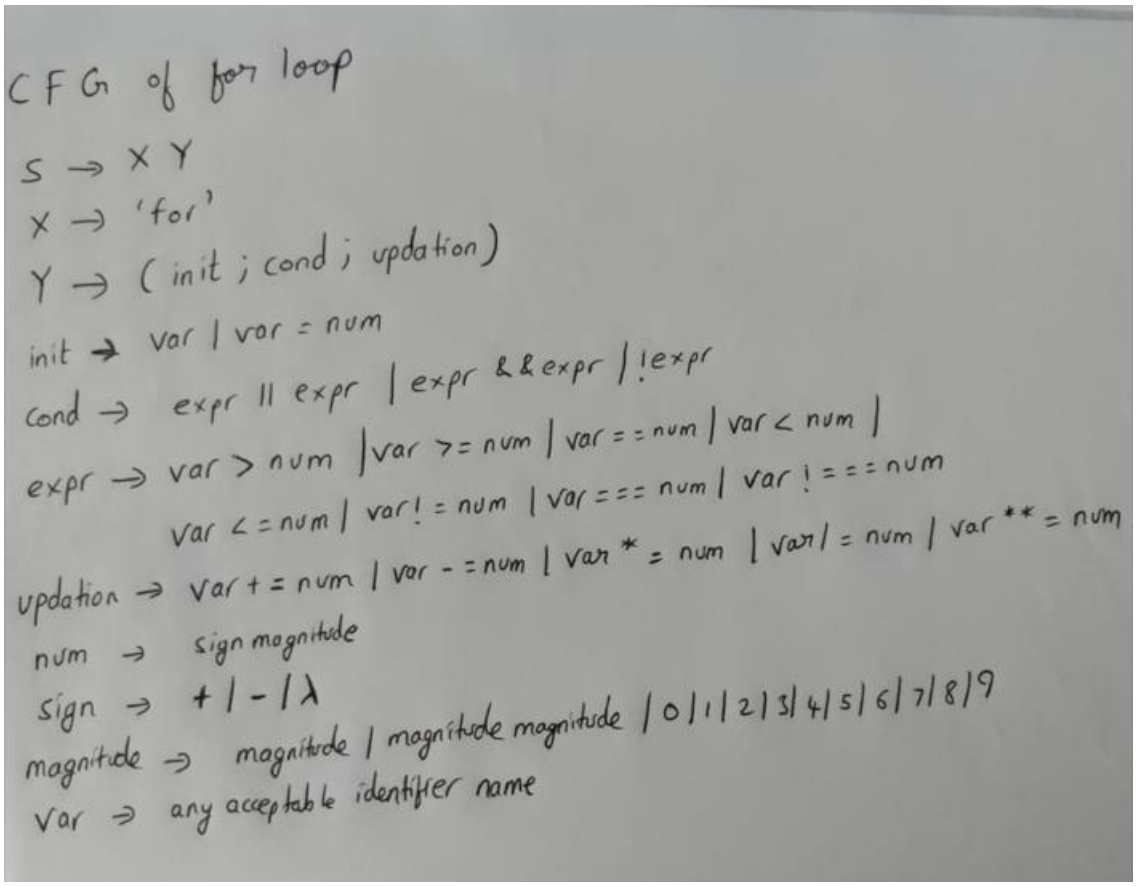
PROBLEM STATEMENT-

CONSTRUCT A CONTEXT FREE GRAMMAR TO MATCH THE SYNTAX OF FOR LOOP IN JAVASCRIPT

SYNTAX OF FOR LOOP-

for(initialisation;condition;updation)

CONTEXT FREE GRAMMAR-



PROGRAM TO MATCH THE SYNTAX OF FOR LOOP IN C

```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

//array to copy first three characters of string str
char arr[3];

void isCorrect(char *str)
{

    //semicolon, bracket1, bracket2 are used
        //to count frequencies of
    //';', '(', and ')' respectively
    //flag is set to 1 when an error is found, else no error
    int semicolon = 0, bracket1 = 0, bracket2 = 0, flag = 0;

    int i;
    for (i = 0; i < 3; i++)
        arr[i] = str[i];

    //first 3 characters of the for loop statement is copied
    if(strcmp(arr, "for") != 0)
    {
        printf("Error in for keyword usage");
        return;
    }

    //Proper usage of "for" keyword checked
    while(i != strlen(str))
    {
        char ch = str[i++];
        if(ch == '(')
        {
            //opening parenthesis count
            bracket1 ++;
        }
        else if(ch == ')')
        {
            //closing parenthesis count
            bracket2 ++;
```

```
        }
        else if(ch == ';')
        {
            //semicolon count
            semicolon ++;
        }
        else continue;

    }

    //check number of semicolons
    if(semicolon != 2)
    {
        printf("\nSemicolon Error");
        flag++;
    }

    //check closing Parenthesis
    else if(str[strlen(str) - 1] != ')')
    {
        printf("\nClosing parenthesis absent at end");
        flag++;
    }

    //check opening parenthesis
    else if(str[3] == ' ' && str[4] != '(' )
    {
        printf("\nOpening parenthesis absent after for keyword");
        flag++;
    }

    //check parentheses count
    else if(bracket1 != 1 || bracket2 != 1 || bracket1 != bracket2)
    {
        printf("\nParentheses Count Error");
        flag++;
    }

    //no error
    if(flag == 0)
        printf("\nNo error");

}

int main(void) {
```

```
    char str1[100] = "for (i = 10; i < 20; i++)";
    isCorrect(str1);

    char str2[100] = "for i = 10; i < 20; i++)";
    isCorrect(str2);

    return 0;
}
```

OUTPUT SCREENSHOT

```
No error
Opening parenthesis absent after for keyword
```