**2. Develop a Program in C for the following operations on Strings.**

**a. Read a main String (STR), a Pattern String (PAT) and a Replace String (REP)**

**b. Perform Pattern Matching Operation: Find and Replace all occurrences of PAT in**

**STR with REP if PAT exists in STR. Report suitable messages in case PAT does not exist in STR Support the program with functions for each of the above operations.**

**Don't use Built-in functions.**

#include<stdio.h>

#include<string.h>

#include<stdlib.h>

char str[50], pat[50], rep[50];

int start = 0, patfound = 0;

int lasts, lastp, lastr;

void replacepattern()

{

            int i, j;

            lastr = strlen(rep)-2;

            if(lastp != lastr)

            {

                        printf("\nInvalid length of replace string");

                        exit(0);

            }

            else

            {

                        i = start;

                        for(j=0; j<=lastr; j++)

                        {

                                    str[i] = rep[j];

                                    i++;

                        }

            }

            return;

}

void findpattern()

{

            int i, j, inmatch;

            lasts = (strlen(str))-2;

            lastp = (strlen(pat))-2;

            int endmatch;

            for(endmatch = lastp; endmatch<=lasts; endmatch++, start++)

            {

                        if(str[endmatch] == pat[lastp])

                        {

                                    inmatch = start;

                                     j=0;

                                    while(j<lastp)

                                    {

                                                if(str[inmatch] == pat[j])

                                                {

                                                            inmatch++;

                                                            j++;

                                                }

                                                else

                                                {

                                                            break;

                                                }

                                    }

                                    if(j == lastp)

                                    {

                                                patfound = 1;

                                                replacepattern();

                                    }

                        }

            }

            return;

}

void main()

{

            printf("\nEnter the main string(STR): ");

            fgets(str, 50, stdin);

            printf("\nEnter the pattern to be matched(PAT): ");

            fgets(pat, 50, stdin);

            printf("\nEnter the string to be replaced(REP): ");

            fgets(rep, 50, stdin);

            printf("\nThe string before pattern match is:\n %s", str);

            findpattern();

            if(patfound == 0)

                        printf("\nThe pattern is not found in the main string");

            else

                        printf("\nThe string after pattern match and replace is: \n %s ",str);

            return;

}