CODE

#include <stdio.h>

#include <string.h>

typedef struct {

char expr[50];

char temp[10];

} Expression;

int main()

{

Expression e[] = {

{"a+b", "t1"},

{"a+b\*c", "t2"},

{"a+b", "t3"},

{"t3\*c", "t4"}

};

int n = 4;

printf("Before Optimization:\n");

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

printf("%s = %s\n", e[i].temp, e[i].expr);

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

for (int j=i+1; j<n; j++) {

if (strcmp(e[i].expr, e[j].expr)==0) {

// replace later temp with first temp

strcpy(e[j].expr, e[i].temp);

}

}

}

printf("\nAfter Optimization:\n");

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

printf("%s = %s\n", e[i].temp, e[i].expr);

return 0;

}

SCREENSHOTS

