ExNo:9
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IMPLEMENT CODE OPTIMIZATION TECHNIQUES CONSTANT FOLDING

AIM:

To write a C program to implement Constant Folding (Code optimization Technique).

ALGORITHM:

- The desired header files are declared.
- The two file pointers are initialized one for reading the C program from the file and one for writing the converted program with constant folding. ● The file is read and checked if there are any digits or operands present. ● If there is, then the evaluations are to be computed in switch case and stored.
- Copy the stored data to another file. ● Print the copied data file.

PROGRAM:

```
#include<stdio.h> #include<string.h>
void main() { char s[20]; char
flag[20]="//Constant";
charresult,equal,operator; double OPI
,op2,interrslt; int a,flag2=0; FILE *fpl
*fp2•, fpl = fopen("input.txt","r"); fp2
=               fopen("output.txt","w");
fscanf(fpl,"%s" s); while(!feof(fpl)) {
if(strcmp(s,flag)==0) { flag2 = 1;

                if(flag2==1)  {  fscanf(fpl
                        "%s" s);
                        result=s[0];
                        equal=s[l];
                        if(isdigit(s[2])&&isdigit(s[4])) {
                        if(s[3]=='+'ll

                                        switch(operator)      {
                                                case '+':
                                                        interrslt=(s[2]-48)+(s[4]-48);
                                                        break;
```

```
                                        case '-':
                                                interrslt=(s[2]-48)-(s[4]-48);
                                        break; case :interrslt=(s[2]-
                                        48)*(s[4]-48); break; case '/':
                                                interrslt=(s[2]-48)/(s[4]-48);
                                        break; default:
                                                interrslt = 0; break; }
                                fprintf(fp2, "/*Constant Folding*/\n");
                                fprintf(fp2,    = %lf\n",result,interrslt);
                                flag2 = 0;

                        }    else    {    fprintf(fp2,    "Not
                                Optimized\n"); fprintf(fp2, s\n"
                                ,s);

                } else { fprintf(fp2, s\n" ,s);

                fscanf(fpl      s" s);

        fclose(fpl); fclose(fp2);
```

OUTPUT:

```
[root@localhost-live 515_exp9]# vi input.txt
[root@localhost-live 515_exp9]# vi 515_exp9.c
[root@localhost-live 515_exp9]# cc 515_exp9.c
[root@localhost-live 515_exp9]# ./a.out
[root@localhost-live 515_exp9]# vi output.txt
```

//output.txt

```
a=7
b=le
```

RESULT:

Thus to implement code optimization techniques in constant folding using c program has been executed successfully.