Constant Propagation

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#include<stdio.h>
#include<string.h>
#include<ctype.h>

void input();
void output();
void change(int p,char *res);
void constant();

struct expr{
        char op[2],op1[5],op2[5],res[5];
        int flag;
}arr[10];
int n;
void main(){

        input();
        constant();
        output();
}

void input(){

        int i;
        printf("\n\nEnter the maximum number of expressions : ");
        scanf("%d",&n);
        printf("\nEnter the input : \n");
        for(i=0;i<n;i++){
                scanf("%s",arr[i].op);
                scanf("%s",arr[i].op1);
                scanf("%s",arr[i].op2);
                scanf("%s",arr[i].res);
                arr[i].flag=0;
        }
}

void constant(){
        int i;
        int op1,op2,res;
        char op,res1[5];
        for(i=0;i<n;i++){
                if(isdigit(arr[i].op1[0]) && isdigit(arr[i].op2[0]) ||
strcmp(arr[i].op,"=")==0){
                /*if both digits, store them in variables*/
                        op1=atoi(arr[i].op1);
                        op2=atoi(arr[i].op2);
                        op=arr[i].op[0];
                        switch(op){
                                case '+':
                                        res=op1+op2;
                                        break;
                                case '-':
                                        res=op1-op2;
                                        break;
                                case '*':
                                        res=op1*op2;
                                        break;
                                case '/':
                                        res=op1/op2;
                                        break;
                                case '=':
                                        res=op1;
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                                        break;
                        }
                        sprintf(res1,"%d",res);
                        arr[i].flag=1;
                        change(i,res1);
                }
        }
}

void output(){
        int i=0;
        printf("\nOptimized code is : ");
        for(i=0;i<n;i++){
                if(!arr[i].flag)
                        printf("\n%s %s %s
%s",arr[i].op,arr[i].op1,arr[i].op2,arr[i].res);
        }
}

void change(int p,char *res){
        int i;
        for(i=p+1;i<n;i++){
                if(strcmp(arr[p].res,arr[i].op1)==0)
                        strcpy(arr[i].op1,res);
                else if(strcmp(arr[p].res,arr[i].op2)==0)
                        strcpy(arr[i].op2,res);
        }
}
```