

Exp. No. 16

Write a C Program to Generate the Three address code representation for the given input statement.

Program:

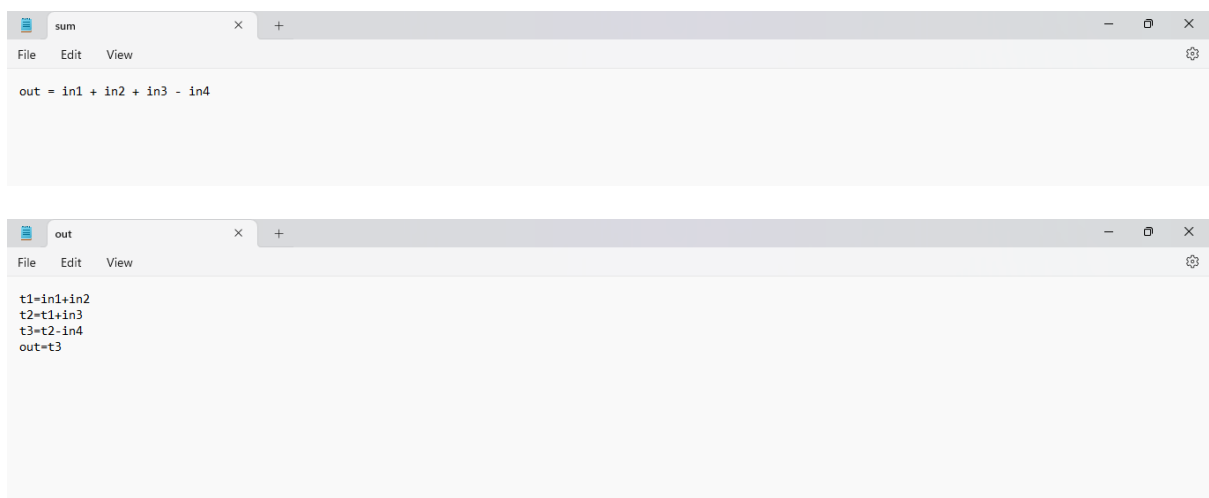
```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
#include<string.h>
struct three
{
char data[10],temp[7];
}s[30];
int main()
{
char d1[7],d2[7]="t";
int i=0,j=1,len=0;
FILE *f1,*f2;
//clrscr();
f1=fopen("sum.txt","r");
f2=fopen("out.txt","w");
while(fscanf(f1,"%s",s[len].data)!=EOF)
len++;
itoa(j,d1,7);
strcat(d2,d1);
strcpy(s[j].temp,d2);
strcpy(d1,"");
strcpy(d2,"t");
if(!strcmp(s[3].data,"+"))
{
fprintf(f2,"%s=%s+%s",s[j].temp,s[i+2].data,s[i+4].data);
j++;
}
else if(!strcmp(s[3].data,"-"))
{
fprintf(f2,"%s=%s-%s",s[j].temp,s[i+2].data,s[i+4].data);
j++;
}
```

```

for(i=4;i<len-2;i+=2)
{
    itoa(j,d1,7);
    strcat(d2,d1);
    strcpy(s[j].temp,d2);
    if(!strcmp(s[i+1].data,"+"))
        fprintf(f2,"\n%s=%s+%s",s[j].temp,s[j-1].temp,s[i+2].data);
    else if(!strcmp(s[i+1].data,"-"))
        fprintf(f2,"\n%s=%s-%s",s[j].temp,s[j-1].temp,s[i+2].data);
    strcpy(d1,"");
    strcpy(d2,"t");
    j++;
}
fprintf(f2,"\n%s=%s",s[0].data,s[j-1].temp);
fclose(f1);
fclose(f2);
getch();
}

```

OUTPUT:



The first screenshot shows a code editor window titled 'sum'. The code inside is:

```

out = in1 + in2 + in3 - in4

```

The second screenshot shows a code editor window titled 'out'. The output inside is:

```

t1=in1+in2
t2=t1+in3
t3=t2-in4
out=t3

```