Practical 6: Write a program to generate 3 Address Code (Intermediate Representation) of any C Code.

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I. AIM

Write a program to generate 3 Address Code (Intermediate Representation) of any C Code.

II. IMPLEMENTATION

I. C file

```c
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
#include<string.h>

struct three {
    char data[10], temp[7];
}s[30];

void main() {
    char d1[7], d2[7]="temp";
    int i=0, j=1, len=0;
    FILE *f1, *f2;
    f1 = fopen("6.in", "r");
    f2 = fopen("6.out", "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, "temp");
    if(!strcmp(s[3].data, "+")) {
        fprintf(f2, "%s=%s+%s", s[j].temp, s[i+2].data, s[i+4].data);
```

```
25          j++;
26      }
27      else if(!strcmp(s[3].data, "-")) {
28          fprintf(f2, "%s=%s-%s", s[j].temp, s[i+2].data, s[i+4].data);
29          j++;
30      }
31      for(i=4;i<len-2;i+=2) {
32          itoa(j,d1,7);
33          strcat(d2,d1);
34          strcpy(s[j].temp,d2);
35          if(!strcmp(s[i+1].data, "+"))
36              fprintf(f2, "\n%s=%s+%s", s[j].temp, s[j-1].temp, s[i+2].data);
37          else if(!strcmp(s[i+1].data, "-"))
38              fprintf(f2, "\n%s=%s-%s", s[j].temp, s[j-1].temp, s[i+2].data);
39          strcpy(d1, "");
40          strcpy(d2, "temp");
41          j++;
42      }
43      fprintf(f2, "\n%s=%s", s[0].data, s[j-1].temp);
44      fclose(f1);
45      fclose(f2);
46  }
```

II. Input

```
ans = i1 + i2 - i3 + i4
```

II.1 Output

```
temp1=i1+i2
temp2=temp1-i3
temp3=temp2+i4
ans=temp3
```