5. Design, develop and implement a C/Java program to generate the machine code using Triples for the statement A = -B * (C +D) whose intermediate code in three-address form:

T1 = -B

T2 = C + D

T3 = T1 * T2

A = T3

```
#include<stdio.h>
#include<stdlib.h>
#include<ctype.h>
char op[2],arg1[5],arg2[5],result[5];
void main()
{
	FILE *fp1, *fp2;
	fp1=fopen("input.txt","r");
	fp2=fopen("output.txt","w");
	while(!feof(fp1))
	{
		fscanf(fp1,"%s%s%s%s",result,arg1,op,arg2);
		if(strcmp(op,"+")==0)
		{
			fprintf(fp2,"\n MOV R0,%s",arg1);
			fprintf(fp2,"\n ADD R0,%s",arg2);
			fprintf(fp2,"\n MOV %s,R0",result);
		}
		if(strcmp(op,"*")==0)
		{
			fprintf(fp2,"\n MOV R0,%s",arg1);
			fprintf(fp2,"\n MUL R0,%s",arg2);
			fprintf(fp2,"\n MOV %s,R0",result);
		}
		if(strcmp(op,"-")==0)
		{
			fprintf(fp2,"\n MOV R0,%s",arg1);
			fprintf(fp2,"\n SUB R0,%s",arg2);
			fprintf(fp2,"\n MOV %s,R0",result);
		}
		if(strcmp(op,"/")==0)
		{
			fprintf(fp2,"\n MOV R0,%s",arg1);
			fprintf(fp2,"\n DIV R0,%s",arg2);
			fprintf(fp2,"\n MOV %s,R0",result);
		}
		if(strcmp(op,"=")==0)
		{
			fprintf(fp2,"\n MOV R0,%s",arg1);
```

```
                        fprintf(fp2,"\n MOV %s,R0",result);
                }
        }
        fclose(fp1);
        fclose(fp2);
}
```

OUTPUT:

$gedit prg5.c

$cc prg5.c

$gedit input.txt

T1 = -B

T2 = C + D

T3 = T1 * T2

A = T3

$ .a/.out input.txt output.txt