NAME: MEET SHAH

USN: 1PE17CS084

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

Algorithm

1. Declare variables.

2. Declare the file pointers, open one in read mode and other in write.

3. Compare the string for characters +, -, *, /, =. Print the respective operation in the output

file.

4. Close both files.

USN: 1PE17CS084

Program Code:

```
#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)

      {
```

USN: 1PE17CS084

```
 fprintf(fp2,"\nMOV R0,%s",arg1);
        fprintf(fp2,"\nADD R0,%s",arg2);
        fprintf(fp2,"\nMOV %s,R0",result);
    }

    if(strcmp(op,"*")==0)
    {
        fprintf(fp2,"\nMOV R0,%s",arg1);
        fprintf(fp2,"\nMUL R0,%s",arg2);
        fprintf(fp2,"\nMOV %s,R0",result);
    }

    if(strcmp(op,"-")==0)
    {
        fprintf(fp2,"\nMOV R0,%s",arg1);
```

```
 fprintf(fp2,"\nSUB R0,%s",arg2);
        fprintf(fp2,"\nMOV %s,R0",result);
    }

    if(strcmp(op,"/")==0)
    {
        fprintf(fp2,"\nMOV R0,%s",arg1);
        fprintf(fp2,"\nDIV R0,%s",arg2);
        fprintf(fp2,"\nMOV %s,R0",result);
    }

    if(strcmp(op,"=")==0)
    {
        fprintf(fp2,"\nMOV R0,%s",arg1);
        fprintf(fp2,"\nMOV %s,R0",result);
    }
```

USN: 1PE17CS084

```
    }

    fclose(fp1);

    fclose(fp2);

    //getch();

}
```

OUTPUT: