2CS701 Compiler Construction

Practical 9	
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AIM:To implement Assembly code generator.: Extend practical 6 to generate an assembly code. (use getReg() algorithm)

Code:

```
#include<stdio.h>
#include<string.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",op,arg1,arg2,result);
    printf("%s %s %s %s",op,arg1,arg2,result);
    if(!strcmp(op,"+"))
    {
      fprintf(fp2,"MOV R0,%s",arg1);
      fprintf(fp2,"\nADD R0,%s",arg2);
      fprintf(fp2,"\nMOV %s,R0",result);
    }
    else if(!strcmp(op,"-"))
    {
      fprintf(fp2,"MOV R0,%s",arg1);
      fprintf(fp2,"\nSUB R0,%s",arg2);
      fprintf(fp2,"\nMOV %s,R0",result);
    }
    else if(!strcmp(op,"*"))
    {
      fprintf(fp2,"MOV R0,%s",arg1);
      fprintf(fp2,"\nMUL R0,%s",arg2);
      fprintf(fp2,"\nMOV %s,R0",result);
    }

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

```
    }
    fclzzose(fp1);
    fclose(fp2);

    getchar();
}
```

Input:

```
* a a x
* b b y
* 2 a d
* b d e
+ x e d
+ y d c
```

Output:

```
MOV R0,a
MUL R0,a
MOV x,R0
MOV R0,b
MUL R0,b
MOV y,R0
MOV R0,2
MUL R0,a
MOV d,R0
MOV R0,b
MUL R0,d
MOV e,R0
MOV R0,x
ADD R0,e
MOV d,R0
MOV R0,y
ADD R0,d
MOV c,R0
```