Shri Ramdeobaba College of Engineering and Management, Nagpur
Department of Computer Science and Engineering
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Compiler Design Lab

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PRACTICAL No. 7

Aim: Write a program to generate the code using simple code generation algorithm.

Topic:- Code Generation

Program:

```c
#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);
    if(strcmp(op,"+")==0)
    {
      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);
```

```c
        fprintf(fp2,"\nMOV %s,R0",result);
    }
if(strcmp(op,"=")==0)
    {
        fprintf(fp2,"\nMOV R0,%s",arg1);
        fprintf(fp2,"\nMOV %s,R0",result);
    }
    }
    fclose(fp1);
    fclose(fp2);


    }
```

Input:-

+ a b t१
+ c d t२
- t२ e t३
- t१ t३ x

Output:-

MOV R०,a
ADD R०,b
MOV
t१,R०MOV
R०,c ADD
R०,d MOV
t२,R०MOV
R०,t२SUB
R०,e MOV
t३,R०MOV
R०,t१SUB
R०,t३
MOV x,R०