Shri Ramdeobaba College of Engineering and Management, Nagpur
Department of Computer Science and Engineering
Session: 2022-2023

Compiler Design Lab

Name:- Krishna Mundada **Roll No:-45**

PRACTICAL No. 7

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

Topic:- Code Generation

Program:-

```
#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);
```

```
      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 t1
+ c d t2
- t2 e t3
- t1 t3 x

Output:-

MOV R0,a
ADD R0,b
MOV t1,R0
MOV R0,c
ADD R0,d
MOV t2,R0
MOV R0,t2
SUB R0,e
MOV t3,R0
MOV R0,t1
SUB R0,t3
MOV x,R0