Exp17 : Target Code Generation (8086) - Backend

1. Start
2. Enter the three address code (operator , argument1 , argument2 , result) in input.txt file
3. fp = fopen (“input.txt” , “r”)
4. while (!feof (fp)) do
    1. print MOV R0, arg1
    2. if (op = +) then
        print ADD R0, arg2
    3. if (op = -) then
        print SUB R0, arg2
    4. if (op = *) then
        print MUL R0, arg2
    5. if (op = /) then
        print DIV R0, arg2
    6. print MOV res, R0
5. Stop

Target Code (8086) - Backend of the Compiler (C)

```
#include<stdio.h>
#include<string.h>

int main(){
   char op[2],arg1[5],arg2[5],res[5];
   FILE *fp = fopen("input.txt","r");
   FILE *fs = fopen("output.txt","w");

   while(!feof(fp)){
      fscanf(fp,"%s%s%s%s",op,arg1,arg2,res);
      fprintf(fs,"MOV R0,%s\n",arg1);
      if(strcmp(op,"+")==0){
         fprintf(fs,"ADD R0,%s\n",arg2);
      }else if(strcmp(op,"-")==0){
         fprintf(fs,"SUB R0,%s\n",arg2);
      }else if(strcmp(op,"*")==0){
         fprintf(fs,"MUL R0,%s\n",arg2);
      }else if(strcmp(op,"/")==0){
         fprintf(fs,"DIV R0,%s\n",arg2);
      }
      fprintf(fs,"MOV %s,R0\n",res);
   }
   printf("output file created successfully\n");

   return 0;
}
```

input.txt

```
+ a b t1
* c d t2
- t1 t2 t
= t ? x
```

output.txt

```
MOV R0,a
ADD R0,b
MOV t1,R0
MOV R0,c
MUL R0,d
MOV t2,R0
MOV R0,t1
SUB R0,t2
MOV t,R0
MOV R0,t
MOV x,R0
```

output