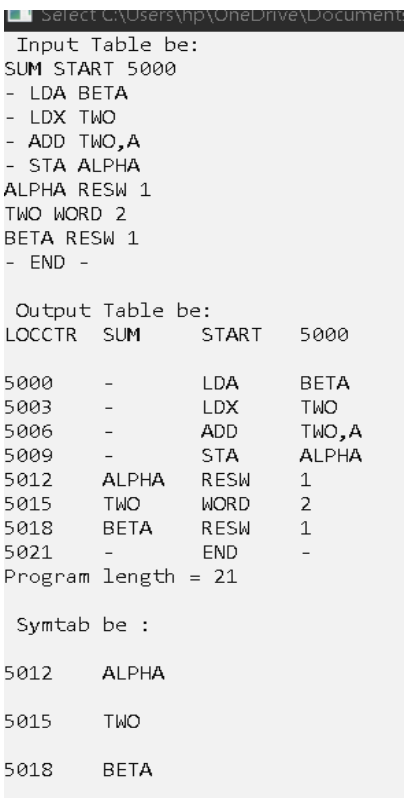
PROGRAM(ONE PASS OF TWO PASS)

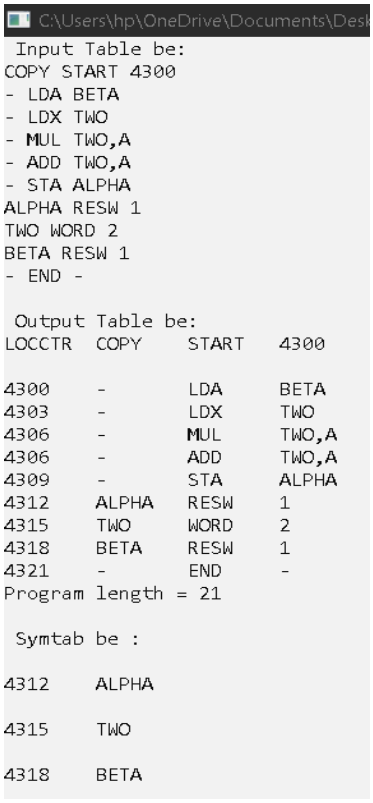
```
#include<stdio.h>
#include<stdlib.h>
#include<string.h>
void main()
{
FILE *f1,*f2,*f3,*f4,*fp1;
int lc,sa,l,op1,o,len;
char m1[20],la[20],op[20],otp[20];
printf(" Input Table be: \n");
fp1=fopen("Input1.txt","r");
char str=fgetc(fp1);
while(str!=EOF)
{
        printf("%c",str);
        str=fgetc(fp1);
}
fclose(fp1);
printf("\n\n Output Table be: \n");
f1=fopen("Input1.txt","r");
f3=fopen("Symtab.txt","w");
fscanf(f1,"%s %s %d",la,m1,&op1);
if(strcmp(m1,"START")==0)
{
  sa=op1;
  lc=sa;
  printf("LOCCTR\t%s\t%s\t%d\n",la,m1,op1);
 }
 else
  lc=0;
 fscanf(f1,"%s %s",la,m1);
while(!feof(f1))
{
  fscanf(f1,"%s",op);
  printf("\n%d\t%s\t%s\t%s",lc,la,m1,op);
  if(strcmp(la,"-")!=0)
  {
    fprintf(f3,"\n%d\t%s\n",lc,la);
  }
  f2=fopen("optab1.txt","r");
  fscanf(f2,"%s %d",otp,&o);
  while(!feof(f2))
  {
   if(strcmp(m1,otp)==0)
   {
     lc=lc+3;
     break;
```

```
 }
 fscanf(f2,"%s %d",otp,&o);
}
fclose(f2);
if(strcmp(m1,"WORD")==0)
{
  lc=lc+3;
}
else if(strcmp(m1,"RESW")==0)
 {
  op1=atoi(op);
  lc=lc+(3*op1);
 }
 else if(strcmp(m1,"BYTE")==0)
  {
    if(op[0]=='X')
      lc=lc+1;
    else
    {
     len=strlen(op)-2;
     lc=lc+len;
    }
  }
  else if(strcmp(m1,"RESB")==0)
  {
   op1=atoi(op);
   lc=lc+op1;
  }
  fscanf(f1,"%s%s",la,m1);
  }
  if(strcmp(m1,"END")==0)
  {
    printf("\nProgram length = %d\n",lc-sa);
  }
  fclose(f1);
  fclose(f3);
  printf("\n Symtab be : \n");
  f3=fopen("Symtab.txt","r");
  str=fgetc(f3);
   while(str!=EOF)
    {
          printf("%c",str);
          str=fgetc(f3);
     }
  fclose(f3);

}
```

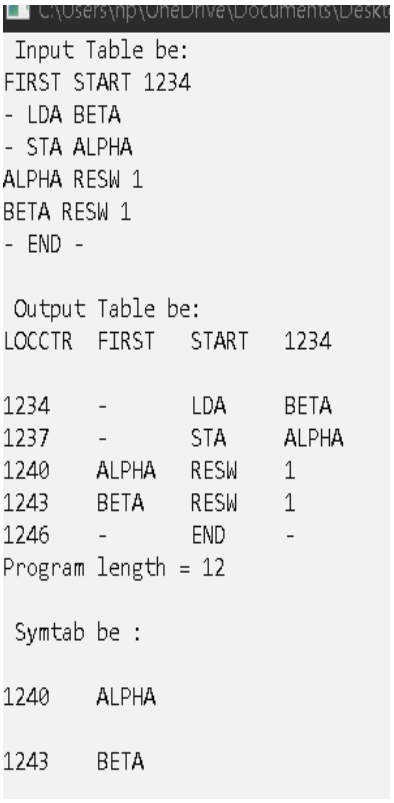
OUTPUT:



```
 Input Table be:
SUM START 5000
- LDA BETA
- LDX TWO
- ADD TWO,A
- STA ALPHA
ALPHA RESW 1
TWO WORD 2
BETA RESW 1
- END -

 Output Table be:
LOCCTR  SUM     START   5000

5000    -       LDA     BETA
5003    -       LDX     TWO
5006    -       ADD     TWO,A
5009    -       STA     ALPHA
5012    ALPHA   RESW    1
5015    TWO     WORD    2
5018    BETA    RESW    1
5021    -       END     -
Program length = 21

 Symtab be :

5012    ALPHA

5015    TWO

5018    BETA
```

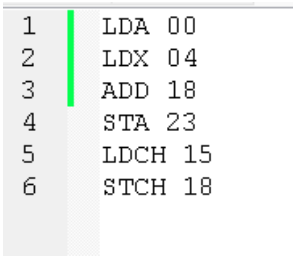


```
 Input Table be:
COPY START 4300
- LDA BETA
- LDX TWO
- MUL TWO,A
- ADD TWO,A
- STA ALPHA
ALPHA RESW 1
TWO WORD 2
BETA RESW 1
- END -

 Output Table be:
LOCCTR  COPY    START   4300

4300    -       LDA     BETA
4303    -       LDX     TWO
4306    -       MUL     TWO,A
4306    -       ADD     TWO,A
4309    -       STA     ALPHA
4312    ALPHA   RESW    1
4315    TWO     WORD    2
4318    BETA    RESW    1
4321    -       END     -
Program length = 21

 Symtab be :

4312    ALPHA

4315    TWO

4318    BETA
```



```
 Input Table be:
FIRST START 1234
- LDA BETA
- STA ALPHA
ALPHA RESW 1
BETA RESW 1
- END -

 Output Table be:
LOCCTR  FIRST   START   1234

1234    -       LDA     BETA
1237    -       STA     ALPHA
1240    ALPHA   RESW    1
1243    BETA    RESW    1
1246    -       END     -
Program length = 12

 Symtab be :

1240    ALPHA

1243    BETA
```

OPTAB:



```
1   LDA 00
2   LDX 04
3   ADD 18
4   STA 23
5   LDCH 15
6   STCH 18
```