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| **Course Code: CSL602** | **Course Name: SPCC LAB** |
| **Class : TE-CO** | **Batch : 3** |
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**Experiment :04**

**Aim : Implementing Macro Processor in C.**

**Procedure :**

1. Provide Assembly program containing Macro as input MACIN.TXT
2. The result will be stored in MACOUT.TXT
3. Outut of MACRO processor is in MACOUT.txt & MDT.txt

**Program :**

#include<stdio.h>

#include<string.h>

struct mdt

{

char lab[10];

char opc[10];

char oper[10];

}d[10];

int main()

{

char label[10],opcode[10],operand[10],newlabel[10],newoperand[10];

char macroname[10];

int i,lines;

FILE \*f1,\*f2,\*f3;

f1 = fopen("MACIN.txt","r");

f2 = fopen("MACOUT.txt","w");

f3 = fopen("MDT.txt","w");

fscanf(f1,"%s %s %s",label,opcode,operand);

while(strcmp(opcode,"END")!=0)

{

if(strcmp(opcode,"MACRO")==0)

{

strcpy(macroname,label);

fscanf(f1,"%s%s%s",label,opcode,operand);

lines = 0;

while(strcmp(opcode,"MEND")!=0)

{

fprintf(f3,"%s\t%s\t%s\n",label,opcode,operand);

strcpy(d[lines].lab,label);

strcpy(d[lines].opc,opcode);

strcpy(d[lines].oper,operand);

fscanf(f1,"%s %s %s",label,opcode,operand);

lines++;

}

}

else if(strcmp(opcode,macroname)==0)

{

printf("lines=%d\n",lines);

for(i=0;i<lines;i++)

{

fprintf(f2,"%s\t%s\t%s\n",d[i].lab,d[i].opc,d[i].oper);

printf("DLAB=%s\nDOPC=%\nDOPER=%s\n",d[i].lab,d[i].opc,d[i].oper);

}

}

else

fprintf(f2,"%s\t%s\t%s\n",label,opcode,operand);

fscanf(f1,"%s%s%s",label,opcode,operand);

}

fprintf(f2,"%s\t%s\t%s\n",label,opcode,operand);

fclose(f1);

fclose(f2);

fclose(f3);

printf("FINISHED");

return 0;

}

Assembly program as input (MACIN.TXT)

CALC START 1000

SUM MACRO \*\*

\*\* LDA #5

\*\* ADD #10

\*\* sTA 2000

\*\* MEND \*\*

\*\* LDA LENGTH

\*\* COMP ZERO

\*\* JEQ LOOP

\*\* SUM \*\*

LENGTH WORD S

ZERO WORD S

LOOP SUM \*\*

\*\* END \*\*

Macro definition table (MDT.TXT)

\*\* LDA #5

\*\* ADD #10

\*\* sTA 2000

**Output :**

CALC START 1000

\*\* LDA LENGTH

\*\* COMP ZERO

\*\* JEQ LOOP

\*\* LDA #5

\*\* ADD #10

\*\* sTA 2000

LENGTH WORD S

ZERO WORD S

\*\* LDA #5

\*\* ADD #10

\*\* sTA 2000

\*\* END \*\*

**Conclusion:**

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| With the help of this Experiment we get information about the implementation to Macro. |