**10. Intermediate Code Generation**

#include<stdio.h>

#include<string.h>

#include<stdlib.h>

int i=1,j=0,no=0,tmpch=90;

char str[100],left[15],right[15];

void findopr();

void explore();

void fleft(int);

void fright(int);

struct exp{

int pos;

char op;

}k[15];

void main()

{

printf("\t\tINTERMEDIATE CODE GENERATION\n\n");

printf("Enter the Expression");

scanf("%s",str);

printf("The intermediate code:\t\tExpression\n");

findopr();

explore();

}

void findopr()

{

for(i=0;str[i]!='\0';i++)

if(str[i]==':')

{

k[j].pos=i;

k[j++].op=':';

}

for(i=0;str[i]!='\0';i++)

if(str[i]=='/')

{

k[j].pos=i;

k[j++].op='/';

}

for(i=0;str[i]!='\0';i++)

if(str[i]=='\*')

{

k[j].pos=i;

k[j++].op='\*';

}

for(i=0;str[i]!='\0';i++)

if(str[i]=='+')

{

k[j].pos=i;

k[j++].op='+';

}

for(i=0;str[i]!='\0';i++)

if(str[i]=='-')

{

k[j].pos=i;

k[j++].op='-';

}

}

void explore()

{

i=1;

while(k[i].op!='\0')

{

fleft(k[i].pos);

fright(k[i].pos);

str[k[i].pos]=tmpch--;

printf("\t%c:= %s%c%s\t\t",str[k[i].pos],left,k[i].op,right);

for(j=0;j<strlen(str);j++)

if(str[j]!='$')

printf("%c",str[j]);

printf("\n");

i++;

}

fright(-1);

if(no==0){

fleft(strlen(str));

printf("\t%s :=%s",right,left);

exit(0);

}

printf("\t%s := %c",right,str[k[--i].pos]);

}

void fleft(int x)

{

int w=0,flag=0;

x--;

while(x!=-1 && str[x]!='+' &&str[x]!='\*'&&str[x]!='='&&str[x]!='\0'&&str[x]!='-'&&str[x]!='/'&&str[x]!=':')

{

if(str[x]!='$'&& flag==0)

{

left[w++]=str[x];

left[w]='\0';

str[x]='$';

flag=1;

}

x--;

}

}

void fright(int x)

{

int w=0,flag=0;

x++;

while(x!=-1&&str[x]!='+'&&str[x]!='\*'&&str[x]!='\0'&&str[x]!='='&&str[x]!=':'&&str[x]!='-'&&str[x]!='/')

{

if(str[x]!='$'&&flag==0)

{

right[w++]=str[x];

right[w]='\0';

str[x]='$';

flag=1;

}

x++;

}

}

**OUTPUT:**

INTERMEDIATE CODE GENERATION

Enter the Expression a\*b+c/d-e/f+g\*h

The intermediate code: Expression

Z:= e/f a\*b+c/d-Z+g\*h

Y:= a\*b Y+c/d-Z+g\*h

X:= g\*h Y+c/d-Z+X

W:= Y+c W/d-Z+X

V:= Z+X W/d-V

U:= d-V W/U

W :=U

Process returned 0 (0x0) execution time : 35.975 s

Press any key to continue.