3rd year cse lab programs

As per the anna university regulations - 2004, cs 1356 compilers lab and cs 1355 graphics and multimedia lab programs will be available here... u can also request for prog to this mail id cse.achievers@gmail.com...will be published soon...

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Blog Archive

THURSDAY, JANUARY 28, 2010

CODE GENERATION

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PROGRAM:

```
#include"stdio.h"
#include"conio.h"
#include"string.h"
#include"stdlib.h"
struct quadraple
{
      int pos;
      char op;
      char arg1[5];
      char arg2[5];
      char result[5];
}quad[15];
int n=0;
void assignment(int);
void uminus(int );
void explore();
void codegen(char op[5],int);
char tuple[15][15];
int main(void)
{
 FILE *src;
 int nRetInd,i;
 char str[15];
 clrscr();
 src=fopen("int.txt","r");
 fscanf(src,"%s",str);
 while(!feof(src))
 {
  strcpy(tuple[n++],str);
  fscanf(src,"%s",str);
 }
 printf("INPUT:\nIntermiate codes:\n");
 for(i=0;i< n;i++)
  printf("%s\n",tuple[i]);
 explore();
 getch();
 clrscr();
 printf("OUTPUT:\n");
 printf("Quadruple: \n");
 printf("pos\topr\targ1\targ2\tresult\n");
 for(i=0;i< n;i++)
  printf("\n%d\t%c\t%s\t%s\t%s",quad[i].pos,quad[i].op,quad[i].arg1,qua
d[i].arg2,quad[i].result);
 i=0;
 printf("\n\ncode generated :\n");
 while(i< n)
 {
```

```
 if(quad[i].op=='+')
  codegen("ADD",i);
 if(quad[i].op=='=')
  assignment(i);
 if(quad[i].op=='-')
   if(!strcmp(quad[i].arg2,"\0"))
    uminus(i);
   else
    codegen("SUB",i);
 if(quad[i].op=='*')
  codegen("MUL",i);
 if(quad[i].op=='/')
  codegen("DIV",i);
i++;
}
getch();
fcloseall();
return 0;
}
void codegen(char op[5],int t)
{
char str[25];
printf("MOV %s,R0\n",quad[t].arg1);
printf("%s %s,R0\n",op,quad[t].arg2);
printf("MOV R0,%s\n",quad[t].result);
}
void assignment(int t)
{
char str[25];
printf("MOV %s,%s\n",quad[t].result,quad[t].arg1);
}
void uminus(int t)
{
char str[25];
printf("MOV R0,0\n");
printf("SUB %s,R0\n",quad[t].arg1);
printf("MOV R0,%s\n",quad[t].result);
}

void explore()
{
int i,j,t,t1,t2;
for(i=0;i < n;i++)
{
 quad[i].pos=i;
 for(j=0,t=0;j < strlen(tuple[i])&&tuple[i][j]!='=';j++)
 {
  quad[i].result[t++]=tuple[i][j];
 }
 t1=j;
 quad[i].result[t]='\0';
 if(tuple[i][j]=='=')
 {
  quad[i].op='=';
 }
 if(tuple[i][j+1]=='+'||tuple[i][j+1]=='-'||tuple[i][j+1]=='*'||tuple[i]
[j+1]=='/')
 {
  quad[i].op=tuple[i][j+1];
  t1=j+1;
 }
 for(j=t1+1,t=0;j< strlen(tuple[i])&&tuple[i][j]!='+'&&tuple[i][j]!='-
'&&tuple[i][j]!='*'&&tuple[i][j]!='/';j++)
 {
  quad[i].arg1[t++]=tuple[i][j];
 }
 t2=j;
 quad[i].arg1[t]='\0';
 if(tuple[i][j]=='+'||tuple[i][j]=='-'||tuple[i][j]=='*'||tuple[i][j]=='/')
```

```
 {
  quad[i].op=tuple[i][j];
 }
 for(j=t2+1,t=0;j< strlen(tuple[i]);j++)
 {
  quad[i].arg2[t++]=tuple[i][j];
 }
 quad[i].arg2[t]='\0';
}
}
```

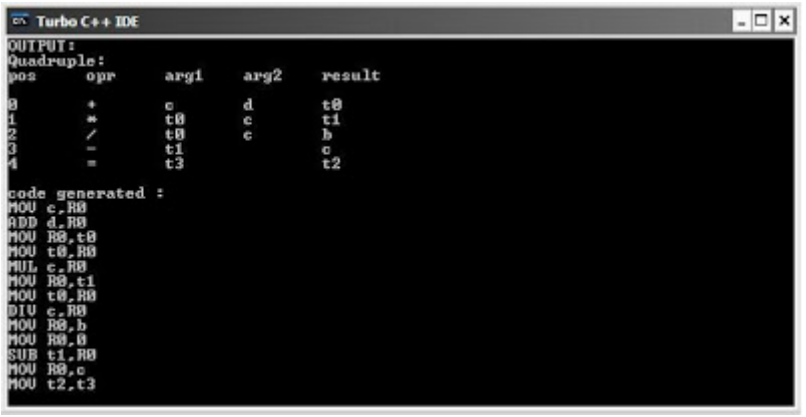
INPUT:

INT.TXT

```
t0=c+d
t1=t0*c
b=t0/c
c=-t1
t2=t3
```

DOWNLOAD THIS FILE :

OUTPUT:



Posted by cselab at 6:15 PM
Labels: code generation , code generation in c

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