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**Compiler design LAB**

**EXPERIMENT N0: 11**

**Three address code generation**

**SOURCE CODE:**

***#include<stdio.h>***

***#include<ctype.h>***

***#include<stdlib.h>***

***#include<string.h>***

***void small();***

***void dove(int i);***

***int p[5]={0,1,2,3,4},c=1,i,k,l,m,pi;***

***char sw[5]={'=','-','+','/','\*'},j[20],a[5],b[5],ch[2];***

***void main()***

***{***

***printf("Enter the expression:");***

***scanf("%s",j);***

***printf("\tThe Intermediate code is:\n");***

***small();***

***}***

***void dove(int i)***

***{***

***a[0]=b[0]='\0';***

***if(!isdigit(j[i+2])&&!isdigit(j[i-2]))***

***{***

***a[0]=j[i-1];***

***b[0]=j[i+1];***

***}***

***if(isdigit(j[i+2])){***

***a[0]=j[i-1];***

***b[0]='t';***

***b[1]=j[i+2];***

***}***

***if(isdigit(j[i-2]))***

***{***

***b[0]=j[i+1];***

***a[0]='t';***

***a[1]=j[i-2];***

***b[1]='\0';***

***}***

***if(isdigit(j[i+2]) &&isdigit(j[i-2]))***

***{***

***a[0]='t';***

***b[0]='t';***

***a[1]=j[i-2];***

***b[1]=j[i+2];***

***sprintf(ch,"%d",c);***

***j[i+2]=j[i-2]=ch[0];***

***}***

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

***printf("\tt%d=%s\*%s\n",c,a,b);***

***if(j[i]=='/')***

***printf("\tt%d=%s/%s\n",c,a,b);***

***if(j[i]=='+')***

***printf("\tt%d=%s+%s\n",c,a,b);if(j[i]=='-')***

***printf("\tt%d=%s-%s\n",c,a,b);***

***if(j[i]=='=')***

***printf("\t%c=t%d",j[i-1],--c);***

***sprintf(ch,"%d",c);***

***j[i]=ch[0];***

***c++;***

***small();***

***}***

***void small()***

***{***

***pi=0;l=0;***

***for(i=0;i<strlen(j);i++)***

***{***

***for(m=0;m<5;m++)***

***if(j[i]==sw[m])***

***if(pi<=p[m])***

***{***

***pi=p[m];***

***l=1;***

***k=i;***

***}***

***}***

***if(l==1)***

***dove(k);***

***else***

***exit(0);***

***}***

**OUTPUT:**

