

PASS-1 ASSEMBLER :

MAIN PROGRAM:

```
import java.io.*;
class P1
{
    public static void main(String ar[]) throws IOException
    {
        BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        int i;
        String a[][]={{"", "START", "101", ""},
                        {"", "MOVER", "BREG", "ONE"},
                        {"AGAIN", "MULT", "BREG", "TERM"},
                        {"", "MOVER", "CREG", "TERM"},
                        {"", "ADD", "CREG", "N"},
                        {"", "MOVEM", "CREG", "TERM"},
                        {"N", "DS", "2", ""},
                        {"RESULT", "DS", "2", ""},
                        {"ONE", "DC", "1", ""},
                        {"TERM", "DS", "1", ""},
                        {"", "END", "", ""}};
        int lc=Integer.parseInt(a[0][2]);
        String st[][]=new String[5][2];
        int cnt=0,l;
        for (i=1;i<11;i++)
        {
            if (a[i][0]!="")
            {
                st[cnt][0]=a[i][0];
                st[cnt][1]=Integer.toString(lc);
                cnt++;
                if(a[i][1]=="DS")
                {
                    int d=Integer.parseInt(a[i][2]);
                    lc=lc+d;
                }
                else
                {
                    lc++;
                }
            }
            else
            {
                lc++;
            }
        }
        System.out.print("***SYMBOL TABLE***\n");
        System.out.println("_____");
        for(i=0;i<5;i++)
        {
            for(cnt=0;cnt<2;cnt++)
            {
                System.out.print(st[i][cnt]+"\\t");
            }
            System.out.println();
        }
    }
}
```

```

}

String
inst[]={ "STOP", "ADD", "SUB", "MULT", "MOVER", "MOVEM", "COMP", "BC", "DIV", "READ", "P
RINT"};
String reg[]={ "NULL", "AREG", "BREG", "CREG", "DREG"};
int op[][]=new int[12][3];
int j,k,p=1,cnt1=0;
for(i=1;i<11;i++)
{
for(j=0;j<11;j++)
{
if(a[i][1].equalsIgnoreCase(inst[j]))
{
op[cnt1][0]=j;
}
else
if(a[i][1].equalsIgnoreCase("DS"))
{
p=Integer.parseInt(a[i][2]);
}
else if(a[i][1].equalsIgnoreCase("DC"))
{
op[cnt1][2]=Integer.parseInt(a[i][2]);
}
}
for(k=0;k<5;k++)
{
if(a[i][2].equalsIgnoreCase(reg[k]))
{
op[cnt1][1]=k;
}
}
for(l=0;l<5;l++)
{
if(a[i][3].equalsIgnoreCase(st[l][0]))
{
int mn=Integer.parseInt(st[l][1]);
op[cnt1][2]=mn;
}
}
cnt1=cnt1+p;
}
System.out.println("\n *****OUTPUT*****\n");
System.out.println("*****MOT TABLE*****");
int dlc=Integer.parseInt(a[0][2]);
for(i=0;i<12;i++)
{
System.out.print(dlc+++"\t");
for(j=0;j<3;j++)
{
System.out.print(" "+op[i][j]+" ");
}
System.out.println();
}
System.out.println("");

```

```
}  
}
```

OUTPUT :

SYMBOL TABLE

AGAIN	102
N	106
RESULT	108
ONE	110
TERM	111

*****OUTPUT*****

*****MOT TABLE*****

101	4	2	110
102	3	2	111
103	4	3	111
104	1	3	106
105	5	3	111
106	0	0	0
107	0	0	0
108	0	0	0
109	0	0	0
110	0	0	1
111	0	0	0
112	0	0	0