Macro Pass 2

```
import java.io.BufferedReader;
import java.io.FileReader;
import java.io.FileWriter;
import java.util.HashMap;
import java.util.Vector;

public class MacroP2 {

    public static void main(String[] args) throws Exception {
        BufferedReader irb=new BufferedReader(new FileReader("intermediate.txt"));
        BufferedReader mdtb=new BufferedReader(new FileReader("mdt.txt"));
        BufferedReader kpdtb=new BufferedReader(new FileReader("kpdt.txt"));
        BufferedReader mntb=new BufferedReader(new FileReader("mnt.txt"));

        FileWriter fr=new FileWriter("pass2.txt");

        HashMap<String, MNTEntry> mnt=new HashMap<>();
        HashMap<Integer, String> aptab=new HashMap<>();
        HashMap<String,Integer> aptabInverse=new HashMap<>();

        Vector<String>mdt=new Vector<String>();
        Vector<String>kpdt=new Vector<String>();

        int pp,kp,mdtp,kpdtp,paramNo;
        String line;
        while((line=mdtb.readLine())!=null)
        {
            mdt.addElement(line);
        }
        while((line=kpdtb.readLine())!=null)
        {
            kpdt.addElement(line);
        }
        while((line=mntb.readLine())!=null)
        {
            String parts[]=line.split("\\s+");
            mnt.put(parts[0], new MNTEntry(parts[0], Integer.parseInt(parts[1]), Integer.parseInt(parts[2]), Integer.parseInt(parts[3]), Integer.parseInt(parts[4])));

        }

        while((line=irb.readLine())!=null)
        {
            String []parts=line.split("\\s+");
            if(mnt.containsKey(parts[0]))
            {
```

```
pp=mnt.get(parts[0]).getPp();
kp=mnt.get(parts[0]).getKp();
kpdtp=mnt.get(parts[0]).getKpdtp();
mdtp=mnt.get(parts[0]).getMdtp();
paramNo=1;
for(int i=0;i<pp;i++)
{
    parts[paramNo]=parts[paramNo].replace(",", "");
    aptab.put(paramNo, parts[paramNo]);
    aptabInverse.put(parts[paramNo], paramNo);
    paramNo++;
}
int j=kpdtp-1;
for(int i=0;i<kp;i++)
{
    String temp[]=kpdt.get(j).split("\t");
    aptab.put(paramNo,temp[1]);
    aptabInverse.put(temp[0],paramNo);
    j++;
    paramNo++;
}

for(int i=pp+1;i<parts.length;i++)
{
    parts[i]=parts[i].replace(",", "");
    String splits[]=parts[i].split("=");
    String name=splits[0].replaceAll("&", "");
    aptab.put(aptabInverse.get(name),splits[1]);
}
int i=mdtp-1;
while(!mdt.get(i).equalsIgnoreCase("MEND"))
{
    String splits[]=mdt.get(i).split("\\s+");
    fr.write("+");
    for(int k=0;k<splits.length;k++)
    {
        if(splits[k].contains("(P,"))
        {
            splits[k]=splits[k].replaceAll("[^0-9]", "");//not containing number
            String value=aptab.get(Integer.parseInt(splits[k]));
            fr.write(value+"\t");
        }
        else
        {
            fr.write(splits[k]+"\t");
        }
    }
    fr.write("\n");
```

```
                    i++;
                }

                aptab.clear();
                aptabInverse.clear();
            }
            else
            {
                fr.write(line+"\n");
            }

    }

    fr.close();
    mntb.close();
    mdtb.close();
    kpdtb.close();
    irb.close();
    }
}
```

MNTEntry.java

```
public class MNTEntry {
   String name;
   int pp,kp,mdtp,kpdtp;


   public MNTEntry(String name, int pp, int kp, int mdtp, int kpdtp) {
      super();
      this.name = name;
      this.pp = pp;
      this.kp = kp;
      this.mdtp = mdtp;
      this.kpdtp = kpdtp;
   }
   public String getName() {
      return name;
   }
   public void setName(String name) {
      this.name = name;
   }
   public int getPp() {
      return pp;
   }
   public void setPp(int pp) {
      this.pp = pp;
   }
   public int getKp() {
      return kp;
   }
   public void setKp(int kp) {
      this.kp = kp;
   }
   public int getMdtp() {
      return mdtp;
   }
   public void setMdtp(int mdtp) {
      this.mdtp = mdtp;
   }
   public int getKpdtp() {
      return kpdtp;
   }
   public void setKpdtp(int kpdtp) {
      this.kpdtp = kpdtp;
   }

   }
```

intermediate.txt

```
START   100
M1      10, 20, &B=CREG
M2      100, 200, &V=AREG, &U=BREG
END
```

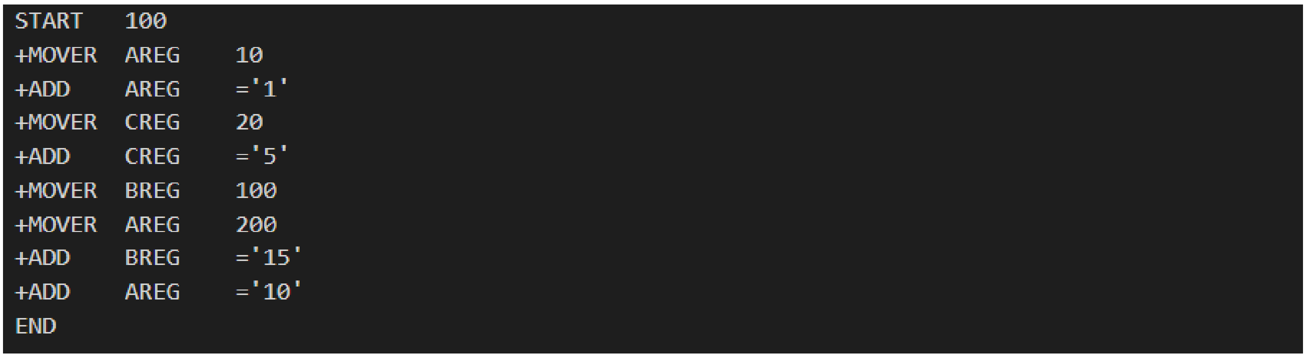
mdt.txt

```
MOVER (P,3)   (P,1)

ADD   (P,3)   ='1'

MOVER (P,4)   (P,2)

ADD   (P,4)   ='5'

MEND

MOVER (P,3)   (P,1)

MOVER (P,4)   (P,2)

ADD   (P,3)   ='15'

ADD   (P,4)   ='10'

MEND
```

mnt.txt

```
M1    2    2    1    1

M2    2    2    6    3
```

Output:



```
START   100
+MOVER  AREG    10
+ADD    AREG    ='1'
+MOVER  CREG    20
+ADD    CREG    ='5'
+MOVER  BREG    100
+MOVER  AREG    200
+ADD    BREG    ='15'
+ADD    AREG    ='10'
END
```