```
import gara util Scanner;
infrost five : util Array List;
 unform fava, util. Arrays;
 infrom Jain util Map;
     miprof gain. wil. Hashmap ?
     unprost fair ufol. set;
     clas Chemical Equation of
                    private story equation;
                 Chemical Equation (String equation) &
                                 String[7 molecules = fumOf Molecules. split ( 141+
                                     return molecules;
            of public Arraylist (Array Lixt & string >> get Mobile ()
                           String [] Splitted Equation: thus, equation. split (">");
                             String the = 8philled Equation Lo];
                              String rhs = 8phitted Equation [1];
                               String [] the Molecules and = this . Entract Molecules (Lhs);
                                                  n Ms n = this entract Molunes / the);
                     Kroeylist & String> (In Moleulotray = new Acray lin (String)
                                                                                                                                         (Horay-as 114 ( the Molacles)
                   Armylist String + the Meleculativery 2
                                                                                                                                                                            ( n (Ms Molecules)
                   Array List (Array List & String >> all Melacules = Menteraylist Stray List & Stray
```

```
all Molecules. add (Ihaddecule Array);
    all Molecules. add (rh. Molecule Array);
      return all Molecules;
          void print Num of Molecules (Acrey 4/22/8701974 relewles,
       String molecule;
       cheir first Char;
     int is Dugit;
     System, out pountin ("Nom of moleculos" + Frate +": ");
     for (int i=0; ix malecules. 8/201); i++){
         nolecule = Molecules-got (i);
         first Char = molecule. CharAt(0);
        of (firstchar = "0" & from char < = '9")
             System out printly (molecule Rubang (1, molecule.
                                                      + frestelarly
          System. ont. println ( sublecule + 4- 1);
public Array Cist & Map & Storing, Integer >> get Element Court (
       Array hot & things lho Molecules, Array Liet & Etning > Hospically
& String moderale;
  String element = ""
    Map (Pming, Integer; Lhs Elements 2 new HashMap & String Police)
    Map & String, Integers the Elements =
```

cher first Char, ch; int words ; ArrayLiALMAPO String-Integer >> return Map List = new Array 487KMAP Ketning, Tuteguss (); for lint 120; 1'x the Moderntes get [for link 1'20; i's lho Moleules. size(); i're) of molicule = lho Molecules. get (1); System out Minthe (molocule, nga firstChar = molecule. charAffo); ef (frostchar)=10 4 & frostcher <= 191) molecule = molecule substrong (1, molecule length ()), System out printin (moleule, ng for link j=0; jx molecule. lapphy; j++) & if (molecule-charAt (j) = 0' && Molecule. charAt (j) <= 191) (Unselements fort (element, Unselements get (clement) + Character. got Numeric Valne (moteune-charA+())). continue, if Character, slower case (molecule charaff (5)))of element = usleade. Enbstring (0-10;j+1); if I bhs Elements. contains key (dement)) Ahs Elements. port /element, ld lhs Elements. get (element). + Character. get Numer's Value (first Clour)). Use lks Elements-Int (element, lks Elements. get (element) -1 Character. get Numeric value (fisst Char)).

```
ema
  element = molecule substring (J, j, 1);
 ef (Phs Elements. continis key/element))
        Un Element Just lelement, I has Element's get (element);
Character get Numeroic Value (first Cha);
  ele
      the Blemen's port (element, Character, getweene value)
 return Map List. add [ lhs Elements )
for [int i=0, is thomale ales. Size(); its ) of
    molecule = The Molecules. get(i);
   titstChar: molecule. CharAt (0);
    of Frist Char >= 10' de frist Char <= 91)
            molecule = molecule substring (1).
   for (int j=0; jx molecule-length (), j+1) of
     of (Character ylowerlass | molecule-churst / j))) &
          Clement = molecule. substring(j-1, j+1);
        if [rh. Elements. contains ey (element))
             rhs Elements. Int (element, who Elements get
(element) + Character getwarms
(firetiles))
            rhs Elements. Int Celement, Characker get Number of
```

```
return Myslist. add ( the Elements).
     return returnMapli'st;
Sublic slaw Generalized of
     public state void main (bring args[]) of
           Scanner heyboard = new Scanner (Systemin);
            Storng can
            ear = keyboard. neutline();
            Chemical Equation equation: new Chemical Equation (eqn);
           Array L'87 d Array l'14 / 17ing >> all Molecules
                            = equation getwolerules ();
           equation, printerium of Molecules (all Molecules get (0), "LHE");
          equation. printilum of Molecules (all Molecules get (1), 245").
          Array List of Maf (Story, Integer) countries : equation of
                                          get Element Count /all Molecu-
                                        la get (1), all Morecules. get (1);
      Map & String, Enteger > Us Cremt = Comptlist-gotto).
                         shower = countlist get(1);
      Set ( String) keys = lho Comp. keySet (),
      System. out. println ("LHS elements");
       for (String bey: Alles count. bey set ()) of
          2) System. Out. printly (key+ " + lhs Coud. get(key));
```

System, out forintly (MRH3 elemends"):

for living 8thing wey: Mrs Count bey let ()) of

System. out frontly (wey on no the Count getthey).

8

9