```
##TITLE=Tiny IR Spectrum for Demo
##JCAMP-DX=4.24
##DATA TYPE=INFRARED SPECTRUM
##OWNER= GPL-3 (modified from BRUKER1.JCM (IUPAC) by B. Hanson)
##XUNITS=1/CM
##YUNITS=TRANSMITTANCE
##FIRSTX= 4000.655017
##LASTX= 400.1619262
##DELTAX= -9.64245605E-1
##MAXY= 95.83563804
##MINY= -2.87246704E-1
##XFACTOR= 4.882812500E-4
##YFACTOR= 1.220703125E-2
##NPOINTS= 612
##FIRSTY= 7493
##XYDATA=(X++(Y. .Y))
4861896G493jknkJlkJjJ1Kj0kNTjNK JNKM1mKqMnnKkOjJKJKTNNMNKJMJjKTJTkM1KlKJ
4729586G542nNjKmJMJmMjljKmklTlJJkNjMLNTMKlKjmkjkTlokmqkqj0oTrj4j3j9k3k818
4611099G336m7o0q2j07j38j73k10k40k62k53k11j55p2K0J09J76K11K28K20J97J70J45J22J01
4563705G025Q6P000N1M4L8L2K8K4K1J7J8J1RTQNMTkMTjNLNMJULJKUJjJkTnmkTLTJOOLRMULJM
4453117G637JTLJKTJJLkKLlLjJLKjTMJjLJjKlKLljKJjJKTJljKJTl1KTkLTjKJTMJTK
4320808G688JKTkLjJOkjJTjTKkKUkjLNkmLjLlJK1OmjKkMJTTkNKkkJjkJjLTmKJkKkLJmJL
4186523G715jTKLKlJLkjKJjUKUkJKTljKnMJLmNJjUMkLkTUjMKJKjj3J1PnMKLJTKjMkK
4050263G750JjKJTKJqNKJlKlKTpNM1KKlJUjTOj9J8kjKklLlKLmMjJNj1j2K01Qj5
3929802G753k9L4QmOkMnJMkNJTkJKJ1KTmTQkMk4LK3kJIJNLkLJLMnJKjLl8JK71JJOMjLlj
3811316G794JkMkMpKkMmTnPJ5r1J2Q0k2J7kTjqJ6rPqOmn3L1K3Lm8L3KOj4J3pOjrMTkJ1
##END=
```

Key to the above:

- Entire File. Input for findVariableLists, as a vector of character strings.
- Metadata. Input for extractParams, as a vector of character strings.
- Variable List. Input for processVariableList and decompressXYY, as a vector of character strings.

The entire file is the input to findVariableLists. Here are two raw lines from the variable list; each is a character vector of length one:
[1] "4861896G493jknkJlkJjJIK\%j0\%kNTjNKJNKMlmKq\%MnKk\%Oj JKJKTN\%NM\%NK\%JM\%JjKTJTkM1K1KJ"
[2] "4729586G542nNjKmJM\%JmMjljKmklT\%lJkN\%jMLN\%TMKl\%Kj\%mkjkTlokmqkqj0oTrj4j3j9k3k818"
The input to decompLines and getComp is a vector of named raw lines:
Line_17
"4861896G493jknkJlkJjJ1K\%j0\%kNTjNKJNKM1mKq\%MnKk\%Oj JKJKTn\%NM\%NK\%JM\%JjKTJTkM1KlKJ"
Line_18
"4729586G542nNjKmJM\%JmMjljKmklT\%lJkN\%jMLN\%TMKl\%Kj\%mkjkTlokmqkqj0oTrj4j3j9k3k818"
The input to unSQZ, insertDUPs, deDIF and yValueCheck is a named list of lines. Each raw line has been split into the individual pieces and named according to its compres-
sion mode:
\$Line_17

| NUM | SQZ | DIF | DIF | DIF | DIF | DIF | DIF |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| "4861896" | "G493" | "j" | "k" | "n" | "k" | "J" | "1" |
| DIF | DIF | DIF | DIF | DIF | DIF | DIF | DIF |
| "k" | "J" | "j" | "J" | "1" | "K" | "\%" | "j" |
| DIF | DIF | DIF | DIF | DUP | DIF | DIF | DIF |
| "0" | "\%" | "k" | "N" | "T" | "j" | "N" | "K" |
| DIF | DIF | DIF | DIF | DIF | DIF | DIF | DIF |
| "J" | "N" | "K" | "M" | "1" | "m" | "K" | "q" |
| DIF | DIF | DIF | DIF | DIF | DIF | DIF | DIF |
| "\%" | "M" | "n" | "K" | "k" | "\%" | "0" | "j" |
| DIF | DIF | DIF | DIF | DUP | DIF | DIF | DIF |
| "J" | "K" | "J" | "K" | "T" | "N" | "\%" | "N" |
| DIF | DIF | DIF | DIF | DIF | DIF | DIF | DIF |
| "M" | "\%" | "N" | "K" | "\%" | "J" | "M" | "\%" |
| DIF | DIF | DIF | DUP | DIF | DUP | DIF | DIF |
| "J" | "j" | "K" | "T" | "J" | "T" | "k" | "M" |
| DIF | DIF | DIF | DIF | DIF |  |  |  |
| "1" | "K" | "1" | "K" | "J" |  |  |  |

The input to unDIF is a character vector with entries named with ASDF mode:

| NUM | SQZ | DIF | DIF | DIF | DIF | DIF | DIF |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| "4861896" | "G493" | "j" | "k" | "n" | "k" | "J" | "1" |
| DIF | DIF | DIF | DIF | DIF | DIF | DIF | DIF |
| "k" | "J" | "j" | "J" | "1" | "K" | "\%" | "j" |
| DIF | DIF | DIF | DIF | DUP | DIF | DIF | DIF |
| "0" | "\%" | "k" | "N" | "T" | "j" | "N" | "K" |
| DIF | DIF | DIF | DIF | DIF | DIF | DIF | DIF |
| "J" | "N" | "K" | "M" | "1" | "m" | "K" | "q" |
| DIF | DIF | DIF | DIF | DIF | DIF | DIF | DIF |
| "\%" | "M" | "n" | "K" | "k" | "\%" | "0" | "j" |
| DIF | DIF | DIF | DIF | DUP | DIF | DIF | DIF |
| "J" | "K" | "J" | "K" | "T" | "N" | "\%" | "N" |
| DIF | DIF | DIF | DIF | DIF | DIF | DIF | DIF |
| "M" | "\%" | "N" | "K" | "\%" | "J" | "M" | "\%" |
| DIF | DIF | DIF | DUP | DIF | DUP | DIF | DIF |
| "J" | "j" | "K" | "T" | "J" | "T" | "k" | "M" |
| DIF | DIF | DIF | DIF | DIF |  |  |  |
| "1" | "K" | "1" | "K" | "J" |  |  |  |

The input to repDUPs is a character vector with length one:
DUP
"T"

