

| | | | | | | | | | |
|--|------------|---|--------|--|--|---|--|---|---|
| JOIN David XEROX | Unemployed | Borland | Compaq | Digital | IBM | Microsoft | NEC | XEROX David, \$0 | |
| JOIN Mario XEROX JOIN John Digital | Unemployed | Borland | Compaq | Digital John, \$0 | IBM | Microsoft | NEC | XEROX Mario, \$0 David, \$0 | |
| JOIN Fred Digital JOIN Phil IBM | Unemployed | Borland | Compaq | Digital Fred, \$0 John, \$0 | IBM Phil, \$0 | Microsoft | NEC | XEROX Mario, \$0 David, \$0 | |
| CHANGE Fred NEC | Unemployed | Borland | Compaq | Digital John, \$0 | IBM Phil, \$0 | Microsoft | NEC Fred, \$0 | XEROX Mario, \$0 David, \$0 | |
| JOIN Miriam Digital JOIN Sharon Microsoft JOIN Harvey Digital | Unemployed | Borland | Compaq | Digital Harvey, \$0 Miriam, \$0 John, \$0 | IBM Phil, \$0 | Microsoft Sharon, \$0 | NEC Fred, \$0 | XEROX Mario, \$0 David, \$0 | |
| CHANGE Miriam Borland PAYDAY | Unemployed | Borland Miriam, \$1000 | Compaq | Digital Harvey, \$1000 John, \$2000 | IBM Phil, \$1000 | Microsoft Sharon, \$1000 | NEC Fred, \$1000 | XEROX Mario, \$1000 David, \$1000 | |
| EMPLOYEES Digital JOIN Marge Borland JOIN Lesley Microsoft JOIN Sam Digital JOIN George NEC JOIN Bob Borland JOIN Susan IBM JOIN Joshua Digital JOIN Max NEC | Unemployed | Borland Bob, \$0 Marge, \$0 Miriam, \$1000 | Compaq | Digital Joshua, \$0 Sam, \$0 Harvey, \$1000 John, \$2000 | IBM Susan, \$0 Phil, \$1000 | Microsoft Lesley, \$0 Sharon, \$1000 | NEC Max, \$0 George, \$0 Fred, \$1000 | XEROX Mario, \$1000 David, \$1000 | EMPLOYEES Digital (Print out employees in Digital). Harvey, John |
| PAYDAY EMPLOYEES IBM | Unemployed | Borland Bob, \$1000 Marge, \$2000 Miriam, \$4000 | Compaq | Digital Joshua, \$1000 Sam, \$2000 Harvey, \$4000 John, \$6000 | IBM Susan, \$1000 Phil, \$2000 | Microsoft Lesley, \$1000 Sharon, \$3000 | NEC Max, \$1000 George, \$2000 Fred, \$4000 | XEROX Mario, \$2000 David, \$3000 | EMPLOYEES IBM (Print out employees in IBM) Susan, Phil |
| EMPLOYEES Digital | | | | | | | | | EMPLOYEES Digital (Print out employees in Digital) Joshua, Sam, Harvey, John |
| EMPLOYEES NEC | | | | | | | | | EMPLOYEES NEC (Print out employees in NEC) Max, George, Fred |
| JOIN Tim IBM DEMOTE Harvey | Unemployed | Borland Bob, \$1000 Marge, \$2000 Miriam, \$4000 | Compaq | Digital Joshua, \$1000 Harvey, \$4000 Sam, \$2000 John, \$6000 | IBM Tim, \$0 Susan, \$1000 Phil, \$2000 | Microsoft Lesley, \$1000 Sharon, \$3000 | NEC Max, \$1000 George, \$2000 Fred, \$4000 | XEROX Mario, \$2000 David, \$3000 | |

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|------------------|---------------|----------------|---------------|----------------|---------------|----------------|----------------|---------------|---|
| PROMOTE Max | Unemployed | Borland | Compaq | Digital | IBM | Microsoft | NEC | XEROX | |
| DEMOTEMarge | | Marge, \$2000 | | Joshua, \$1000 | Tim, \$0 | Lesley, \$1000 | George, \$2000 | Mario, \$2000 | |
| | | Bob, \$1000 | | Harvey, \$4000 | Susan, \$1000 | Sharon, \$3000 | Max, \$1000 | David, \$3000 | |
| | | Miriam, \$4000 | | Sam, \$2000 | Phil, \$2000 | | Fred, \$4000 | | |
| | | | | John, \$6000 | | | | | |
| CHANGE Marge IBM | Unemployed | Borland | Compaq | Digital | IBM | Microsoft | NEC | XEROX | |
| QUIT John | John, \$6000 | Bob, \$1000 | | Joshua, \$1000 | Marge, \$2000 | Lesley, \$1000 | George, \$2000 | Mario, \$2000 | |
| | | Miriam, \$4000 | | Harvey, \$4000 | Tim, \$0 | Sharon, \$3000 | Max, \$1000 | David, \$3000 | |
| | | | | Sam, \$2000 | Susan, \$1000 | | Fred, \$4000 | | |
| | | | | | Phil, \$2000 | | | | |
| PAYDAY | Unemployed | Borland | Compaq | Digital | IBM | Microsoft | NEC | XEROX | |
| | John, \$6050 | Bob, \$2000 | | Joshua, \$2000 | Marge, \$3000 | Lesley, \$2000 | George, \$3000 | Mario, \$3000 | |
| | | Miriam, \$6000 | | Harvey, \$6000 | Tim, \$2000 | Sharon, \$5000 | Max, \$3000 | David, \$5000 | |
| | | | | Sam, \$5000 | Susan, \$4000 | | Fred, \$7000 | | |
| | | | | | Phil, \$6000 | | | | |
| QUIT Mario | Unemployed | Borland | Compaq | Digital | IBM | Microsoft | NEC | XEROX | |
| QUIT David | David, \$5000 | Bob, \$2000 | | Joshua, \$2000 | Tim, \$2000 | Lesley, \$2000 | George, \$3000 | | |
| PROMOTE Marge | Mario, \$3000 | Miriam, \$6000 | | Harvey, \$6000 | Susan, \$4000 | Sharon, \$5000 | Max, \$3000 | | |
| PROMOTE Marge | John, \$6050 | | | Sam, \$5000 | Marge, \$3000 | | Fred, \$7000 | | |
| | | | | | Phil, \$6000 | | | | |
| PAYDAY | Unemployed | Borland | Compaq | Digital | IBM | Microsoft | NEC | XEROX | |
| UNEMPLOYED | David, \$5050 | Bob, \$3000 | | Joshua, \$3000 | Tim, \$3000 | Lesley, \$3000 | George, \$4000 | | |
| | Mario, \$3050 | Miriam, \$8000 | | Harvey, \$8000 | Susan, \$6000 | Sharon, \$7000 | Max, \$5000 | | UNEMPLOYED (Print unemployed employees) |
| | John, \$6100 | | | Sam, \$8000 | Marge, \$6000 | | Fred, \$10000 | | David, Mario, John |
| | | | | | Phil, \$10000 | | | | |
| JOIN John Compaq | Unemployed | Borland | Compaq | Digital | IBM | Microsoft | NEC | XEROX | |
| QUIT Phil | Phil, \$10000 | Bob, \$3000 | John, \$6100 | Joshua, \$3000 | Tim, \$3000 | Lesley, \$3000 | George, \$4000 | | |
| | David, \$5050 | Miriam, \$8000 | | Harvey, \$8000 | Susan, \$6000 | Sharon, \$7000 | Max, \$5000 | | |
| | Mario, \$3050 | | | Sam, \$8000 | Marge, \$6000 | | Fred, \$10000 | | |
| | | | | | | | | | |
| JOIN Phil Compaq | Unemployed | Borland | Compaq | Digital | IBM | Microsoft | NEC | XEROX | |
| DUMP | David, \$5050 | Bob, \$3000 | Phil, \$10000 | Joshua, \$3000 | Tim, \$3000 | Lesley, \$3000 | George, \$4000 | | |
| | Mario, \$3050 | Miriam, \$8000 | John, \$6100 | Harvey, \$8000 | Susan, \$6000 | Sharon, \$7000 | Max, \$5000 | | DUMP (Print all employees) |
| | | | | Sam, \$8000 | Marge, \$6000 | | Fred, \$10000 | | |
| | | | | | | | | | |
| DEMOTEBob | Unemployed | Borland | Compaq | Digital | IBM | Microsoft | NEC | XEROX | |
| DEMOTJohn | David, \$5050 | Bob, \$3000 | John, \$6100 | Joshua, \$3000 | Tim, \$3000 | Lesley, \$3000 | George, \$4000 | | |
| | Mario, \$3050 | Miriam, \$8000 | Phil, \$10000 | Harvey, \$8000 | Susan, \$6000 | Sharon, \$7000 | Max, \$5000 | | |
| | | | | Sam, \$8000 | Marge, \$6000 | | Fred, \$10000 | | |
| | | | | | | | | | |
| END | | | | | | | | | END (Stop reading input from file) |