

Burt Rosenberg

Answer Set 2

OUT: 14 SEPTEMBER, 1993

```

program letFreq( input, output ) ;

{ program to count letter frequencies,
  and print a small histogram.
  burt rosenberg, 27 aug 93
  revised 14 sep 93
}

const
  infile = 'InFile.txt' ;

var
  a : array [0..25] of integer ;
  i, j : integer ;
  ch : char ;
  total, most : integer ;
  f : TEXT ;

begin
  { zero out array of letter counts.
    a[0] corresponds to 'a' and 'A',
    a[25] to 'z' and 'Z'. }
  for i := 0 to 25 do a[i] := 0 ;

  {open file and count letters}
  reset( f, inFile ) ;
  while (not eof(f)) do begin
    read(f, ch) ;
    if (ch>='a') then i := ord(ch) - ord('a') {convert the upper case}
    else i := ord(ch) - ord('A')           {convert the lower case}
    if ((i>=0) and (i<=25)) then
      a[i] := a[i] + 1 ;
  end ;

  { write first line of output while collecting
    statistics, total number of letters and number of
    most frequent letter }
  total := 0 ;
  most := 0 ;

```

```
writeln ;
write(' ') ;
for i := 0 to 25 do begin
  write(' ', chr(i+ ord('a')), ' ') ;
  if (most<a[i]) then most := a[i] ;
  total := total + a[i] ;
end ;
if total=0 then total := 1 ; {correct for empty text files}

{ write second line of output, percentage of
  each letter. }
writeln ;
for i := 0 to 25 do begin
  j := (100 * a[i]) div total ;
  write(j:3) ;
end ;
writeln ;

{ make histogram. Cycle to 1/10's putting an
  X if the letter's percentage exceeds that tenth. }
for j := 0 to 9 do begin
  write(' ') ;
  for i := 0 to 25 do begin
    if ((10*a[i])>(j*most)) then write(' X ')
    else write('   ') ;
  end ;
  writeln ;
end ;

end.
```

Here is the output when *InFile.txt* is a file of normal English text:

When *InText.txt* is the following encoded message:

pybio kbcdr opyvu csxkv sddvo dygxss
xdohk czbyz yconx kwocd ydros bvymk
vzycd yppsm oyxol iyxod rozyc dkvcos
bfsmo botom dondr owkvv psxkv visxo
sqrdo oxrex nbonk xnosq rdidr oigby
dokps xkype bsyec voddo bdydr oboqs
yxkvz ycdwk cdobg sdrdr scmvyy csxqp
bywxy gyxmy xcsno becxk wovoc cksncc
ydroi nsnxk wovoc cdohk csckl yeddg
oxdiw svocx ybdrg ocdyp kecds xtecd
yppyp xkwov occby kn

The output of *letFreq* is: