Group-It.exe

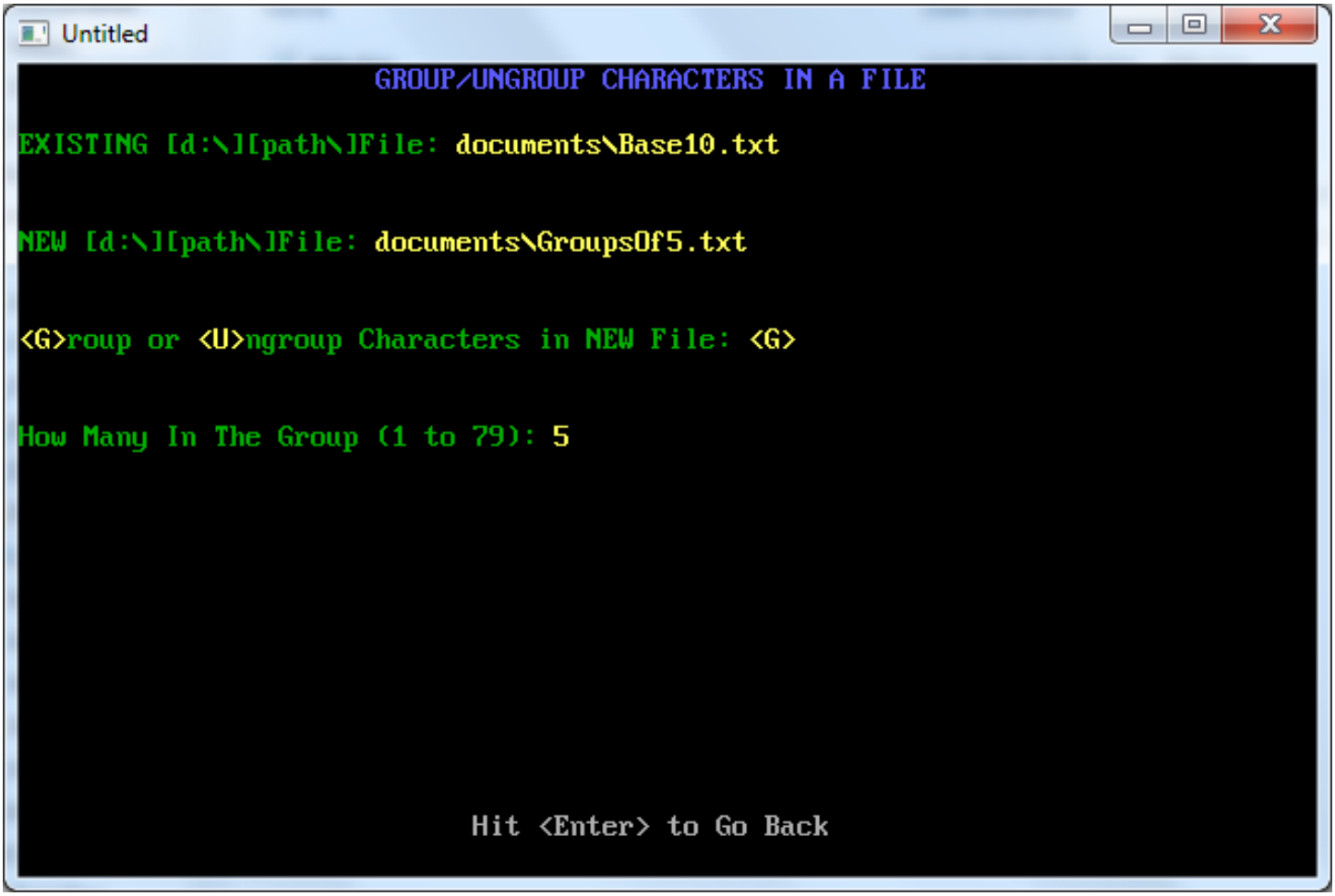
Group-It.exe is a simple program I wrote which will format a continuous string of characters that are all greater than CHR$(32) into groups from 1 to 79 characters with a space between each group. Furthermore, each line will break into a new line when the total length of a line is less than or equal to 79 characters.

I specifically use this program to format the output of two of my other programs:

Base-256 File To Base-10 File.exe and ***File Reader to DNA Encrypted-Sequence Writer.exe***

Group-It.exe will also reverse the process and UnGroup its output back to the original string of characters.

I use the formatted output to generate two other pastimes that I enjoy: Creating and sending Morse Code files and creating and sending QR Codes.



A message that I will first change to a Base-10 file and then use Group-It.exe as shown in the above screenshot:

```
"The programmer, like the poet, works only slightly removed from pure
thought-stuff.  He builds his castles in the air, from air, creating
by exertion of the imagination...Yet the program construct, unlike the
poet's words, is real in the sense that it moves and works, producing
visible outputs separate from the construct itself." - Frederick Brooks
```

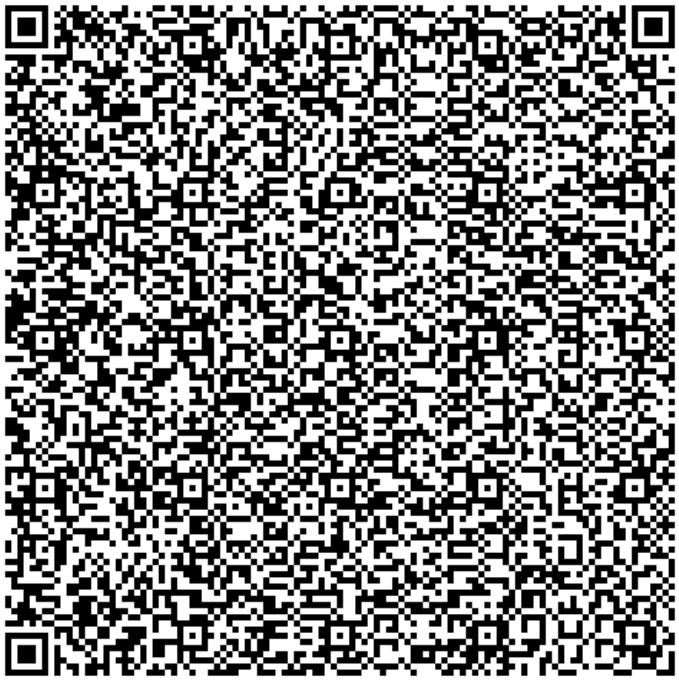
This is the above message converted into a Base-10 file

```
739771994491295107495251266115461375821332432040993750798106538527827765471677589
461882767904845839249640867548468450352818325586165773818243576643663305919754365
987479487490889586825447885080506838275059109775616341909783585351385982913531970
668748119067794153414056486381649862563361738047433102345508186914621444152630224
291282899687500928624965552900689095828051390917937490501891875975110456031786748
852626323790550741404309243079755416564619904767412880503474200315565563178452145
540599085302188360646251390703110813506359368592527851369558427542258469310984736
137034212025894446301441356044736625792491244873656705577169047549312346165786059
066906392692030455408096775831178860587514461977012703055123764114240026879821206
360938899951544272212383652363737098872542691664504675186906204402458795388903931
484621182721081536080097615601324579644907002599 4
```

This is the output from Group-It.exe using groups of five as shown in the above screenshot:

```
73977 19944 91295 10749 52512 66115 46137 58213 32432 04099 37507 98106 53852
78277 65471 67758 94618 82767 90484 58392 49640 86754 84684 50352 81832 55861
65773 81824 35766 43663 30591 97543 65987 47948 74908 89586 82544 78850 80506
83827 50591 09775 61634 19097 83585 35138 59829 13531 97066 87481 19067 79415
34140 56486 38164 98625 63361 73804 74331 02345 50818 69146 21444 15263 02242
91282 89968 75009 28624 96555 29006 89095 82805 13909 17937 49050 18918 75975
11045 60317 86748 85262 63237 90550 74140 43092 43079 75541 65646 19904 76741
28805 03474 20031 55655 63178 45214 55405 99085 30218 83606 46251 39070 31108
13506 35936 85925 27851 36955 84275 42258 46931 09847 36137 03421 20258 94446
30144 13560 44736 62579 24912 44873 65670 55771 69047 54931 23461 65786 05906
69063 92692 03045 54080 96775 83117 88605 87514 46197 70127 03055 12376 41142
40026 87982 12063 60938 89995 15442 72212 38365 23637 37098 87254 26916 64504
67518 69062 04402 45879 53889 03931 48462 11827 21081 53608 00976 15601 32457
96449 07002 5994
```

This is the QR Code created from the above output of Group-It.exe:



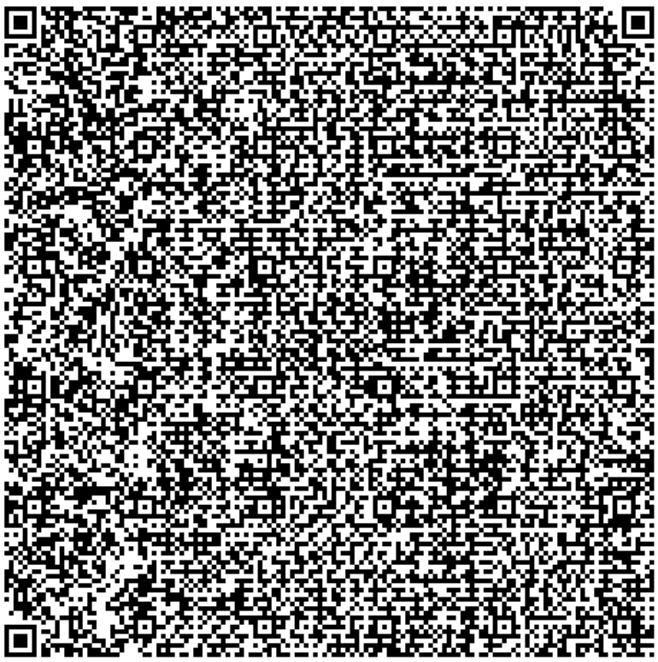
This is the message converted into a DNA Encrypted-Sequence using 12345.67 as the key:

GTATCCAGTAACTGCCCTCCATCCCTAGTGGGGTAGATACCAATCTCGGAGTGACCCTTCTAATGTCCCATGTGAGTACAA
CAAAGTTGCCTTCTCTATTAGTTCATTACCCTGCCTGCTATCTAGGGTCTCTGGGGCAGACTCGCGATCAAGTCCAGCAGC
GCTACACTCCTGGCATTATGACTCTGCTGTCGACCAGCTGTGGTCCGCAGCATTTAGTACAAGTTAGTAATGAGCACCTCA
TCGCTAGTTCACTGCTTCGTTCGTTACGTGCTTCCTAGGGGAGTCATATATTTTGTTGCGTATCTTATGACGTGCGATAAG
CGCCGCGTATCGGAATGTTTCATTCGAGCTCCCTTTACGTATGGTCCTCGCATACTCATAGCAAACACGTGCTCTAATTTA
CGCACGAGCATCTACTATAACAAGCTGAGGGTCACATTATCTTGACATGCTCATTAGTTTCAGGAGTTAAGATCACATTTC
ATAGCTTAGGATTAATAAATCGGCTGATTACGCGTGCCCGTGGCTCCTGGATGTATCACGGTTAATGTACGGCTTTGGTGC
GAGCGAGCCCTAAAGTGCAGGTGTGATTCTAATGTAATCGCATTTCGAACGTGCATTGTCGCTACGTTTGTGGATACTGGC
CGGCCGATACACGCATACGTCTGCGCCGGCGGGAGTGTGCGCAGAGGAAAATGAAACATATGAATGAGAGATAGGGCATTG
TTTTGGTGTAAACTCACTGGTAGCAGATGCCCTTACTAAGTACAGTATAACTGACATAACTCGCACTCAGTACTTATCCAC
TGTCCAGTAGTGCGAGGGCTTTGTCTCGATCACCTTGTCCAAGTTTGCCCATTTGCTCCGTGACTCCTGGGATGTGGGACG
ATGACACATTGCAGCCCTACAATTACGAAATACGTAAGCCGCAACATTTCGGATGATCACCCATAATCTCGCCCTCCCACG
CTTTTGCACATGCGTTGTAAACACATAGAGCATGTGGCAAGATACTGTTGTTCACAGTGGACTAGTCCCACGTGAATAGTA
GGTACCGACCCGTGTATTTACCAGACGCAATAGCAGTTTGATTGTACCGAATCTGCTGGTCGAATTGTGGAATTACCATAA
CCCGAGCGTGAGCACTTCCGATTCTGACTTCGTTACAAGCTTGTATTGCCCAAATGGATAGATCTTAGGCGACCTATTCAT
GAGATTGCGACCGACAATCCCTCCTTCAGTCCCAGGTGAGGCGACGAGTTCGGTGCCTGTGCGTTGCGCTACACTTGTCTA
GAAACTGTATTGGCCCTCAGTGAGACATGCTTACACACGAGTCTAGGCATAAGAGCCTCCCGCGATCGTAGGTCCGGAAAG
CCGTACTTCTGATGTAGGGCATGCGGTATGGACGGTATATCATGGGCCCCC

This is the output from Group-It.exe using groups of four:

GTAT CCAG TAAC TGCC CTCC ATCC CTAG TGGG GTAG ATAC CAAT CTCG GAGT GACC CTTC TAAT
GTCC CATG TGAG TACA ACAA AGTT GCCT TCTC TATT AGTT CATT ACCC TGCC TGCT ATCT AGGG
TCTC TGGG GCAG ACTC GCGA TCAA GTCC AGCA GCGC TACA CTCC TGGC ATTA TGAC TCTG CTGT
CGAC CAGC TGTG GTCC GCAG CATT TAGT ACAA GTTA GTAA TGAG CACC TCAT CGCT AGTT CACT
GCTT CGTT CGTT ACGT GCTT CCTA GGGG AGTC ATAT ATTT TGTT GCGT ATCT TATG ACGT GCGA
TAAG CGCC GCGT ATCG GAAT GTTT CATT CGAG CTCC CTTT ACGT ATGG TCCT CGCA TACT CATA
GCAA ACAC GTGC TCTA ATTT ACGC ACGA GCAT CTAC TATA ACAA GCTG AGGG TCAC ATTA TCTT
GACA TGCT CATT AGTT TCAG GAGT TAAG ATCA CATT TCAT AGCT TAGG ATTA ATAA ATCG GCTG
ATTA CGCG TGCC CGTG GCTC CTGG ATGT ATCA CGGT TAAT GTAC GGCT TTGG TGCG AGCG AGCC
CTAA AGTG CAGG TGTG ATTC TAAT GTAA TCGC ATTT CGAA CGTG CATT GTCG CTAC GTTT GTGG
ATAC TGGC CGGC CGAT ACAC GCAT ACGT CTGC GCCG GCGG GAGT GTGC GCAG AGGA AAAT GAAA
CATA TGAA TGAG AGAT AGGG CATT GTTT TGGT GTAA ACTC ACTG GTAG CAGA TGCC CTTA CTAA
GTAC AGTA TAAC TGAC ATAA CTCG CACT CAGT ACTT ATCC ACTG TCCA GTAG TGCG AGGG CTTT
GTCT CGAT CACC TTGT CCAA GTTT GCCC ATTT GCTC CGTG ACTC CTGG GATG TGGG ACGA TGAC
ACAT TGCA GCCC TACA ATTA CGAA ATAC GTAA GCCG CAAC ATTT CGGA TGAT CACC CATA ATCT
CGCC CTCC CACG CTTT TGCA CATG CGTT GTAA ACAC ATAG AGCA TGTG GCAA GATA CTGT TGTT
CACA GTGG ACTA GTCC CACG TGAA TAGT AGGT ACCG ACCC GTGT ATTT ACCA GACG CAAT AGCA
GTTT GATT GTAC CGAA TCTG CTGG TCGA ATTG TGGA ATTA CCAT AACC CGAG CGTG AGCA CTTC
CGAT TCTG ACTT CGTT ACAA GCTT GTAT TGCC CAAA TGGA TAGA TCTT AGGC GACC TATT CATG
AGAT TGCG ACCG ACAA TCCC TCCT TCAG TCCC AGGT GAGG CGAC GAGT TCGG TGCC TGTG CGTT
GCGC TACA CTTG TCTA GAAA CTGT ATTG GCCC TCAG TGAG ACAT GCTT ACAC ACGA GTCT AGGC
ATAA GAGC CTCC CGCG ATCG TAGG TCCG GAAA GCCG TACT TCTG ATGT AGGG CATG CGGT ATGG
ACGG TATA TCAT GGGC CCCC

This is the QR Code created from the above output of Group-It.exe:



Note:
QR Codes have a maximum text-file size of 2,000 bytes and can be generated and saved as a .png image file at the following link: http://zxing.appspot.com/generator

If you copy the QR Codes from this PDF and save them as an image using a program such as Windows Paint, you can then decode them at this url: http://zxing.org/w/decode.jspx

This is the output from Group-It.exe using the maximum groups of seventy-nine:

```
GTATCCAGTAACTGCCCTCCATCCCTAGTGGGGTAGATACCAATCTCGGAGTGACCCTTCTAATGTCCCATGTGAGTAC
AACAAAGTTGCCTTCTCTATTAGTTCATTACCCTGCCTGCTATCTAGGGTCTCTGGGGCAGACTCGCGATCAAGTCCAG
CAGCGCTACACTCCTGGCATTATGACTCTGCTGTCGACCAGCTGTGGTCCGCAGCATTTAGTACAAGTTAGTAATGAGC
ACCTCATCGCTAGTTCACTGCTTCGTTCGTTACGTGCTTCCTAGGGGAGTCATATATTTTGTTGCGTATCTTATGACGT
GCGATAAGCGCCGCGTATCGGAATGTTTCATTCGAGCTCCCTTTACGTATGGTCCTCGCATACTCATAGCAAACACGTG
CTCTAATTTACGCACGAGCATCTACTATAACAAGCTGAGGGTCACATTATCTTGACATGCTCATTAGTTTCAGGAGTTA
AGATCACATTTCATAGCTTAGGATTAATAAATCGGCTGATTACGCGTGCCCGTGGCTCCTGGATGTATCACGGTTAATG
TACGGCTTTGGTGCGAGCGAGCCCTAAAGTGCAGGTGTGATTCTAATGTAATCGCATTTCGAACGTGCATTGTCGCTAC
GTTTGTGGATACTGGCCGGCCGATACACGCATACGTCTGCGCCGGCGGGAGTGTGCGCAGAGGAAAATGAAACATATGA
ATGAGAGATAGGGCATTGTTTTGGTGTAAACTCACTGGTAGCAGATGCCCTTACTAAGTACAGTATAACTGACATAACT
CGCACTCAGTACTTATCCACTGTCCAGTAGTGCGAGGGCTTTGTCTCGATCACCTTGTCCAAGTTTGCCCATTTGCTCC
GTGACTCCTGGGATGTGGGACGATGACACATTGCAGCCCTACAATTACGAAATACGTAAGCCGCAACATTTCGGATGAT
CACCCATAATCTCGCCCTCCCACGCTTTTGCACATGCGTTGTAAACACATAGAGCATGTGGCAAGATACTGTTGTTCAC
AGTGGACTAGTCCCACGTGAATAGTAGGTACCGACCCGTGTATTTACCAGACGCAATAGCAGTTTGATTGTACCGAATC
TGCTGGTCGAATTGTGGAATTACCATAACCCGAGCGTGAGCACTTCCGATTCTGACTTCGTTACAAGCTTGTATTGCCC
AAATGGATAGATCTTAGGCGACCTATTCATGAGATTGCGACCGACAATCCCTCCTTCAGTCCCAGGTGAGGCGACGAGT
TCGGTGCCTGTGCGTTGCGCTACACTTGTCTAGAAACTGTATTGGCCCTCAGTGAGACATGCTTACACACGAGTCTAGG
CATAAGAGCCTCCCGCGATCGTAGGTCCGGAAAGCCGTACTTCTGATGTAGGGCATGCGGTATGGACGGTATATCATGG
GCCCCC
```