Problems based on Recursion - 8

Assignment Questions

PW SKILLS

Q1. Given the number of digits n in a number, print all n-digit numbers whose digits are strictly increasing from left to right.

Input 1: n = 2
Output 1:
01 02 03 04 05 06 07 08 09 12 13 14 15 16 17 18 19 23 24 25 26 27 28
29 34 35 36 37 38 39 45 46 47 48 49 56 57 58 59 67 68 69 78 79 89

Input 2: n = 3
Output 2:
012 013 014 015 016 017 018 019 023 024 025 026 027 028 029 034
035 036 037 038 039 045 046 047 048 049 056 057 058 059 067 068
069 078 079 089 123 124 125 126 127 128 129 134 135 136 137 138
139 145 146 147 148 149 156 157 158 159 167 168 169 178 179 189
234 235 236 237 238 239 245 246 247 248 249 256 257 258 259 267
268 269 278 279 289 345 346 347 348 349 356 357 358 359 367 368
369 378 379 389 456 457 458 459 467 468 469 478 479 489 567 568
569 578 579 589 678 679 689 789

Q2. A string is called special if it consists of only stars('*') and dashes('-'), and the number of stars is more than the number of dashes for any prefix of the string. Given a positive integer n, print all the special strings of size n.

Input 1: n = 1
Output 1: *

Input 2: n = 3
Output 2:
***
**-
-

Q3. Given a set of characters and a positive integer k, print all possible strings of length k that can be formed from the given set.
Examples:

Input:
Size of set = 2
Set = {x, y}
k = 2

Output:
xx
xy
yx
yy

Input:
Size of set = 2
Set = {a, b}
k = 3

Output:
aaa
aab
aba
abb
baa
bab
bba
Bbb

Q4. Given an input string of digits, find all combinations of numbers that can be formed using digits in the same order.
Examples :

Input : 123
Output : 1 2 3
1 23
12 3
123

Input : 1234
Output : 1 2 3 4
1 2 34
1 23 4
1 234
12 3 4
12 34
123 4
1234

Q5. A string is called special if it consists of only stars('*') and dashes('-'), and there are no consecutive stars in the string. Given a positive integer k, print all the special strings of size k.
Examples:

Input : K = 3
Output :

--*
-*-
*--
-

Input : K = 4
Output :

```
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---*
--*-
-*--
-*-*
*---
*--*
*-*-
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