Question 1 of 5

Given 2 strings X and Y. Write a program to find the smallest subset in the string X that contains all the characters in Y. If characters in Y are not found in X, print -1.

Example:

1. Input:
   X = PHONE
   Y = HEN
   Output:
   HONE
2. Input:
   X = ZOHOCORPORATION
   Y = PCO
   Output:
   CORP
3. Input:
   X = ZOHOCORPORATION
   Y = ONR
   Output:
   RATION

Question 2 of 5

Write a program to traverse an array from left to right and replace each number with the first number greater than the current one from the remaining elements from the current position. For example, from (4, 9, 23, 7) the next greater number to 4 is 7. If no such number is found, then set the current and the remaining array elements as -1.

Examples:

1.

Input:

2, 5, 7

Output:

5, 7, -1

2.

Input:

2, 4, 8, 90, 77, 54

Output:

4, 8, 54, -1, -1, -1

3.

Input:

2, -1, 0, -1, 3

Output:

3, 0, 3, 3, -1

Question 3 of 5

A new computer voice system is proposed based on the 7 notes of classical Indian music. The 7 notes in the order are **S**hadja, **R**ishabha, **G**aandhaara, **M**adhyama, **P**anchama, **D**haivata, and **N**ishaada. There are 4 voice types formed based on the notes sequence as defined below.

1. **Kaar** is the sequence of the lower three notes: P, D and N.
2. **Kulir** is the sequence of the top three notes: S, R and G
3. **Pani** is the sequence of the middle three notes: G, M and P
4. **Venil** is a sequence which is not the above three.

A voice is called **Scaled** if all the adjacent notes in the sequence differ by 0 or 1. Write a program to print the voice type for the given notes sequence.

Examples:

1.

Input: SRGSRGGRS
Output: Kulir

2.

Input: PDNDPDPDP
Output: Kaar, Scaled

3.

Input: SSSSSSS
Output: Kulir, Scaled

4.

Input: SRGMPDS
Output: Venil