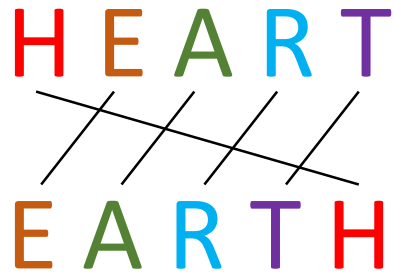


HW3 Tree Anagrams

HEART
EARTH



The diagram shows the words "HEART" and "EARTH" arranged vertically. The letters are color-coded: H (red), E (orange), A (green), R (blue), T (purple) for "HEART"; and E (orange), A (green), R (blue), T (purple), H (red) for "EARTH". Four diagonal lines connect the letters between the two words: H to E, E to A, A to R, and R to T, demonstrating that the two words are anagrams.



Anagrams

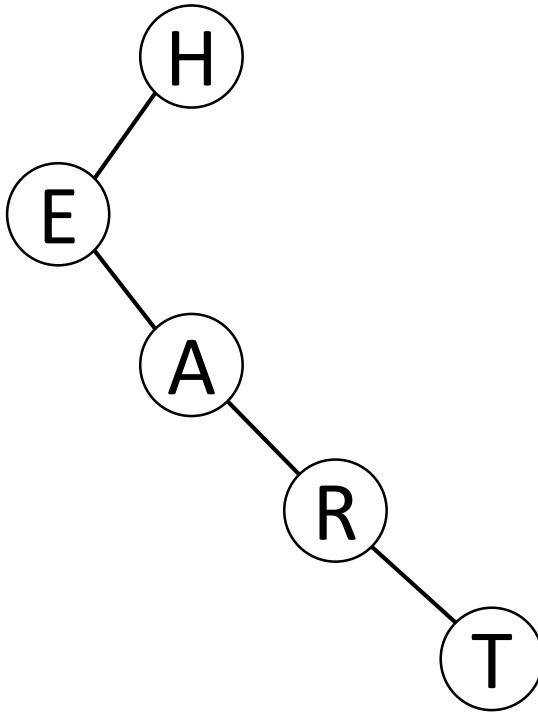
- "變位字" in Chinese

HEART
EARTH



"Tree" Anagrams

- Our definition:

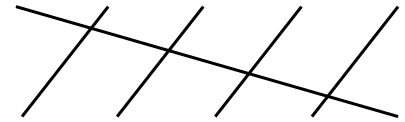


Level-order

H E A R T

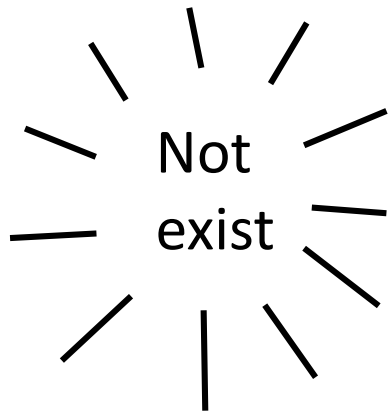
In-order

E A R T H



Not All Anagrams are Valid Trees

- If we want "EARTH" to be the level-order sequence and "HEART" to be the in-order sequence, the tree does not exist



Level-order

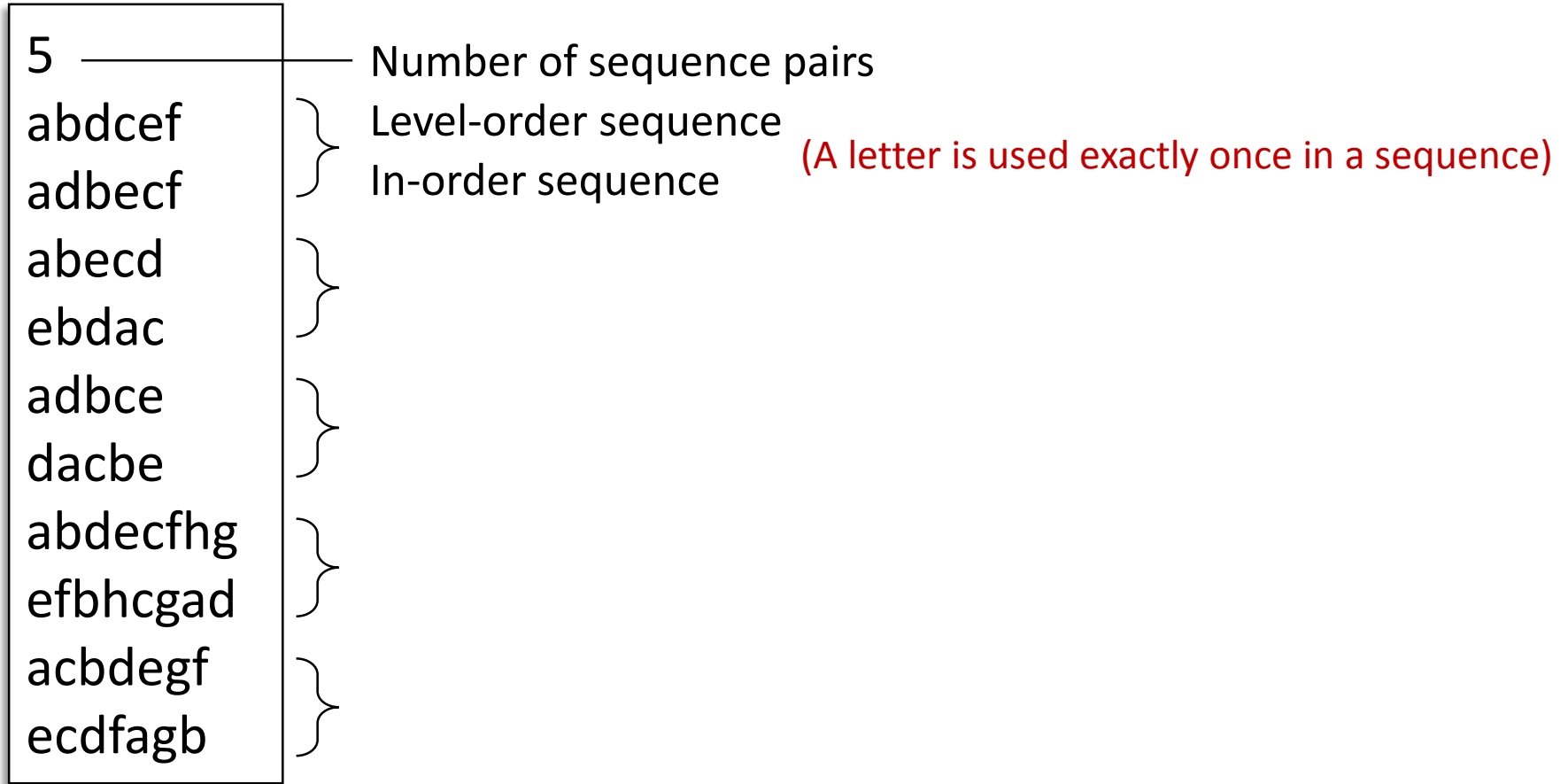
E A R T H

In-order

H E A R T



Input



Output

Same as the input

5	
abdcef	
adbcef	0-2-1-4-3-5 OK
abecd	
ebdac	3-1-0-4-2
adbce	
dacbe	1-0-3-2-4 OK
abdecfhg	
efbhcgad	6-2-7-0-4-1-3-5 OK
acbdegf	
ecdfagb	4-1-6-2-0-5-3

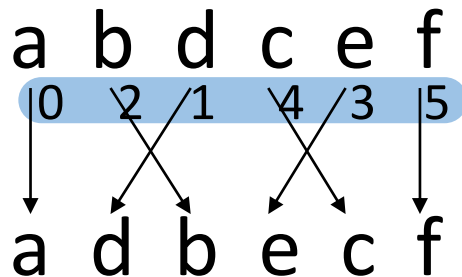
Permutation sequence

Does the tree exist or not

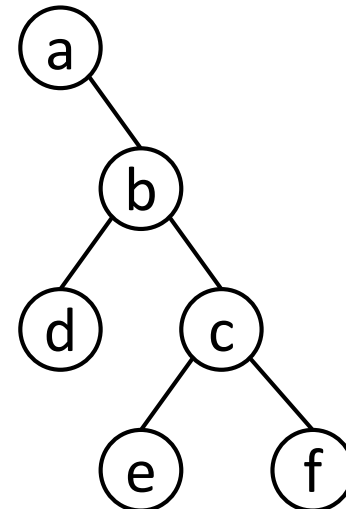
Example

Level-order: **abdcef**

In-order: **adbcef** 0-2-1-4-3-5 OK



The tree does exist



Grading

- By default $50 + 5 * \text{the number of passed test cases}$
 - +10% bonus if you complete the homework by 6/4
 - Due 6/18
- 0 credit for all similar (i.e., plagiarized) codes (no matter which one is original)
 - Don't ask others for codes
 - Don't directly copy codes on the Internet
 - Don't submit others' codes to either iLMS or Online Judge
 - Don't publish your codes or give your codes to others