SCHOOL OF SCIENCE AND TECHNOLOGY, SINGAPORE MATHEMATICS DEPARTMENT 2022 SECONDARY 4



Name:	()		
Class: S4-0		Date:	

March Python Recalibration Test

Super Spy Training School (SSTS) has a hearing post which is able to pick up fragmented signal messages. After some analysis, it was discovered the original message, *OM*, can be extracted by using all the fragmented signals.

The signal fragments are received in the following order:

- All odd numbered fragments of *OM* are received first in ascending order. i.e. {1, 3, 5, ..., last odd fragment},
- Followed by even numbered fragments of *OM* in ascending order. i.e. {0, 2, 4, 6, ..., last even fragment}.

All signal fragments have the same number of characters.

The school has derived the following formula for the number of fragments that can be re-combined to form *OM*:

$$F = S - Ch + 1$$

where F is the total number of fragments S is the length of OM

Ch is the number of characters in a signal fragment

SSTS wants a program that can rearrange the signal fragments to the original order they are found in *OM*

It should have the following criteria:

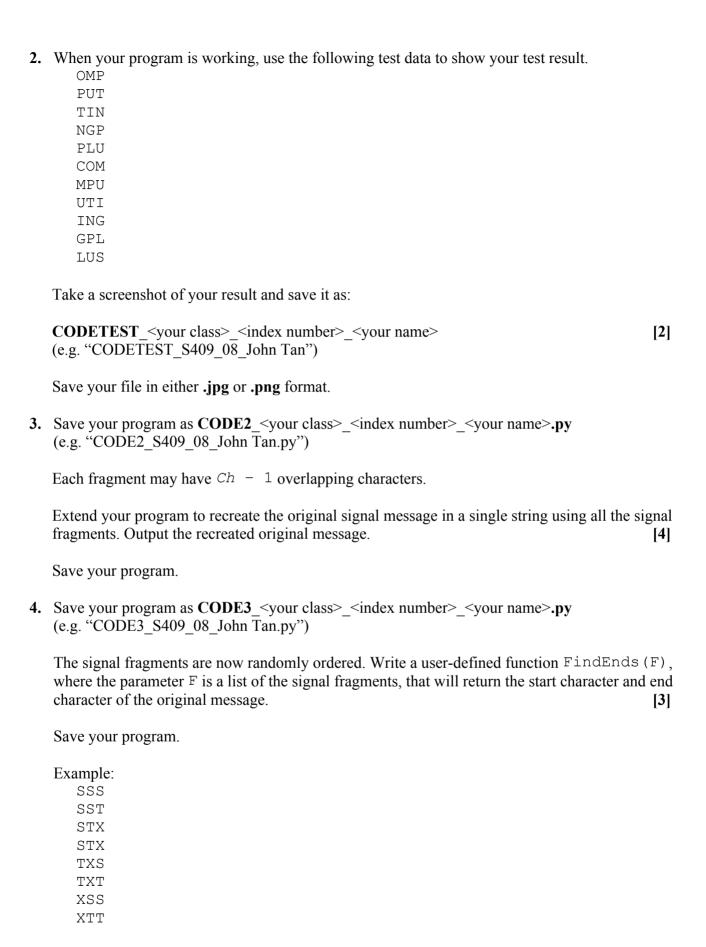
- Take input, the signal fragments, one by one, as strings.
- Allow the user to continue to input until all signal fragments have been entered. The user should determine an end input string condition. e.g. "! END"
- Output all the signal fragments in the original order (i.e. {0, 1, 2, 3, ..., last signal fragment}), in a single line each separated by a space.
- Output the length of *OM*.

A suitable input message must be used for each input. The inputs do not need to be validated.

1. Write the function for the given criteria.

[11]

Save your program as **CODE**_<your class>_<index number>_<your name>.py (e.g. "CODE_S409_08_John Tan.py")



Returns: ST