

# Rail fence cipher

In the *rail fence cipher* (also called *zigzag cipher*), the letters of the plaintext are initially written downwards and diagonally on successive "rails" of an imaginary fence, and then moving up after the bottom rail has been reached. When the top rail is reached, the message is again written downwards until the whole plaintext is written out. If the text "And now for something completely different." is written as such across four rails, we get the following result

```
A#####w#####s#####i#####m#####l#####f#####.  
#n###o###o###h#n###o#p###e#y###f###e###t###  
##d##n###f##r###m##t###g##c###l##t###i###r###n###  
########o#####e#####e#####d#####e###
```

The encoded message is then formed by reading the letters on each rail from left to right, and going through the rails top to bottom. The encoded message for the above example thus reads as "Awsimlf.no ohnopeyfetdnfrmtgclt irm oe ede".

## Assignment

- Write a function `encode` that takes two arguments: *i*) a text string and *ii*) the number of rails used in the rail fence cipher. The function must return a string containing the encoded message of the given text, according to the rail fence cipher with the given number of rails.
- Write a function `decode` that takes two arguments: *i*) a text encoded according to the rail fence cipher and *ii*) the number of rails used in the coding scheme. The function must return a string containing the original text after decoding.

## Example

```
>>> encode('And now for something completely different.', 1)  
'And now for something completely different.'  
>>> encode('And now for something completely different.', 2)  
'Adnwfrsmtigcmltl ifrn.n o o oehn opeeydfeet'  
>>> encode('And now for something completely different.', 3)  
'Anfstgmt fnn o o oehn opeeydfeetdwrmicllir.'  
>>> encode('And now for something completely different.', 4)  
'Awsimlf.no ohnopeyfetdnfrmtgclt irm oe ede'  
>>> encode('And now for something completely different.', 5)  
'Aftm nn oehopydetdwrmicllir. o on eefensgtf'
```

```
>>> decode('And now for something completely different.', 1)  
'And now for something completely different.'  
>>> decode('Adnwfrsmtigcmltl ifrn.n o o oehn opeeydfeet', 2)  
'And now for something completely different.'  
>>> decode('Anfstgmt fnn o o oehn opeeydfeetdwrmicllir.', 3)  
'And now for something completely different.'  
>>> decode('Awsimlf.no ohnopeyfetdnfrmtgclt irm oe ede', 4)  
'And now for something completely different.'  
>>> decode('Aftm nn oehopydetdwrmicllir. o on eefensgtf', 5)  
'And now for something completely different.'
```

Bij spoorhekcodering (of zigzagcodering) worden de letters van een gegeven tekst eerst diagonaal naar beneden uitgeschreven op opeenvolgende "sporen" van een denkbeeldig hek. Nadat het onderste spoor bereikt wordt, gaat het uitschrijven van de letters diagonaal naar boven

