Text Justification

Overview

This project addresses the problem of text justification, where given an array of words and a maximum width, the words need to be formatted such that each line has exactly maxWidth characters and is fully justified. The solution ensures that extra spaces between words are distributed as evenly as possible, and the last line is left-justified.

Solution Description

The solution is implemented in Python using a class named Solution which contains a single method fullJustify. This method takes two parameters:

- words: a list of strings where each string is a word.
- maxWidth: an integer representing the maximum width of each line.

The method returns a list of strings, where each string is a fully justified line of text.

Installation

No special installation is required. Ensure you have Python installed on your system.

Usage

To use the fullJustify method, follow these steps:

1. Create an instance of the Solution class.
2. Call the fullJustify method with the appropriate parameters.

Functions/Classes

Description: This class contains the method to justify text.

Method fullJustify(self, words: List[str], maxWidth: int) -> List[str]

Description: This method justifies the given list of words into lines of specified width.

Parameters:

- words (List[str]): List of words to be justified.
- maxWidth (int): The maximum width of each line.

Returns:

- List[str]: List of strings where each string is a fully justified line of text.

Example:

```
solution = Solution()

words = ["This", "is", "an", "example", "of", "text", "justification."]

maxWidth = 16

result = solution.fullJustify(words, maxWidth)

print(result)
```

Examples

Here are some examples to demonstrate the usage of the fullJustify method:

Example 1

words = ["This", "is", "an", "example", "of", "text", "justification."]

maxWidth = 16

print(solution.fullJustify(words, maxWidth))

Output:

[

"This is an",

"example of text",

"justification. "

]

Example 2

words = ["What","must","be","acknowledgment","shall","be"]

maxWidth = 16

print(solution.fullJustify(words, maxWidth))

Output:

```
[
  "What   must   be",
  "acknowledgment  ",
  "shall be        "
]
```

Example 3

words =
["Science","is","what","we","understand","well","enough","to","explain","to","a","computer.","Art","is","everything","else","we","do"]

maxWidth = 20

print(solution.fullJustify(words, maxWidth))

Output:

```
[
  "Science  is  what we",
  "understand      well",
  "enough to explain to",
  "a  computer.  Art is",
  "everything  else  we",
  "do                  "
]
```