

**Program Name-** To check whether the given string is a pangram or not

**Project Category-** Strings

**Programming Paradigm-** String Manipulations

**What is a Pangram ? -**

A pangram is a sentence containing every letter in the English Alphabet.

**Examples-**

“ The quick brown fox jumps over the lazy dog ” → A Pangram [Contains all the characters from ‘a’ to ‘z’]

“ The quick brown fox jumps over the dog ” → Not a Pangram [Doesn't contain all the characters from ‘a’ to ‘z’, as ‘l’, ‘z’, ‘y’ are missing]

**Algorithm-**

We create a `mark[]` array of Boolean type. We iterate through all the characters of our string and whenever we see a character we mark it. Lowercase and Uppercase are considered the same. So ‘A’ and ‘a’ are marked in index 0 and similarly ‘Z’ and ‘z’ are marked in index 25.

After iterating through all the characters we check whether all the characters are marked or not. If not then return false as this is not a pangram else return true.

**Time Complexity -**  $O(N)$ , where  $N$  is the length of our string

Auxiliary Space-  $O(1)$ .