**PROBLEM**

Given a string *str* consisting of letters only and an integer *n*, the task is to replace every character of the given string by a character which is n times more than it. If the letter exceeds ‘z’, then start checking from ‘a’ in a cyclic manner.

Examples:

*Input:* *str = “abc”, n = 2*

*Output:* *cde*

*a is moved by 2 times which results in character c*

*b is moved by 2 times which results in character d*

*c is moved by 2 times which results in character e*

*Input:* *str = “abc”, n= 28*

*Output: cde*

*a is moved 25 times, z is reached. Then the 26th character will be a, 27th b and 28th c.*

*b is moved 24 times, z is reached. 28-th is b.*

*c is moved 23 times, z is reached. 28-th is e.*

***Question:***

a/ Write an algorithm to solve the above issue. Please consider the complexity of the algorithm.

b/ What is the disadvantage of using the ASCII value of the letters to solve this problem?

**Approach**:

An iteration of every letter in the string to be able to perform the below steps:

1. Use ASCII character encoding

2. Add "n" to the ASCII value of letter str[i].

3. If it is more than 122, perform a modulus operation on "n" with 26 to reduce the number of steps as 26 is the maximum number of shifts that can be performed in a rotation.

4. To find the character, add "n" to 96.

5. Otherwise the character with ASCII value n+96 will become the new character

6. Repeat the above steps for every letter of the given string.

Sample implementation of the above is shown in the sample PHP code within the same directory, in a file named dindinn.php

The solution was built using ASCII character.

ADVANTAGES OF USING ASCII CHARACTER

* Is less demanding on memory use than Unicode
* Uses 8 bits to represent a character.
* Uses English language so it can store all alphanumeric characters.
* Performs parity check
* Can represent 128 characters
* Sets the most significant bit as a parity bit
* Extended ASCII allows representation of 256 characters and disregards that use of a parity bit