

## 535. Encode and Decode TinyURL

Note: This is a companion problem to the [System Design](#) problem: Design TinyURL.

TinyURL is a URL shortening service where you enter a URL such as <https://leetcode.com/problems/design-tinyurl> and it returns a short URL such as <http://tinyurl.com/4e9iAk>. Design a class to encode a URL and decode a tiny URL.

There is no restriction on how your encode/decode algorithm should work. You just need to ensure that a URL can be encoded to a tiny URL and the tiny URL can be decoded to the original URL.

### *Implement the Solution class:*

- `Solution()` Initializes the object of the system.
- `String encode(String longUrl)` Returns a tiny URL for the given longUrl.
- `String decode(String shortUrl)` Returns the original long URL for the given shortUrl. It is guaranteed that the given shortUrl was encoded by the same object.

### Example 1:

- **Input:** url = "<https://leetcode.com/problems/design-tinyurl>"
- **Output:** "<https://leetcode.com/problems/design-tinyurl>"
- **Explanation:**
  - `Solution obj = new Solution();`
  - `string tiny = obj.encode(url);` // returns the encoded tiny url.
  - `string ans = obj.decode(tiny);` // returns the original url after decoding it.

### Constraints:

- $1 \leq \text{url.length} \leq 10^4$
- url is guaranteed to be a valid URL.