

# URL SHORTENER

```
import java.util.HashMap;

import java.util.Map;

import java.util.*;

public class URLshortener {

    private Map<String, String> shortToLongMap;

    private Map<String, String> longToShortMap;

    private static final String BASE_URL = "http://short.url/";


    public URLshortener() {

        this.shortToLongMap = new HashMap<>();

        this.longToShortMap = new HashMap<>();

    }

    public String shortenUrl(String longUrl) {

        if (longToShortMap.containsKey(longUrl))

        {

            return BASE_URL + longToShortMap.get(longUrl);

        }

        String shortCode = generateShortCode();

        String shortUrl = BASE_URL + shortCode;

        shortToLongMap.put(shortCode, longUrl);

        longToShortMap.put(longUrl, shortCode);

        return shortUrl;

    }


    public String expandUrl(String shortUrl) {

        String shortCode = shortUrl.replace(BASE_URL, "");

        if (shortToLongMap.containsKey(shortCode))

        {
```

```

        return shortToLongMap.get(shortCode);
    }
    else
    {
        return "URL not found";
    }
}

```

```

private String generateShortCode() {
    // This is a simple example, in a real-world scenario, you might use a more sophisticated
algorithm
    return Integer.toString(shortToLongMap.size() + 1, 36);
}

```

```

public static void main(String[] args) {

```

```

    String originalUrl = "https://www.shorturl.at/ ";
    URLshortener urlShortener = new URLshortener();

```

```

    // Example usage

```

```

    String shortUrl = urlShortener.shortenUrl(originalUrl);

```

```

    System.out.println("Original URL: " + originalUrl);

```

```

    System.out.println("Shortened URL: " + shortUrl);

```

```

    String expandedUrl = urlShortener.expandUrl(shortUrl);

```

```

    System.out.println("Expanded URL: " + expandedUrl);

```

```

}

```

```

}

```