Week 2 :- LINK SHORTNER

Program:-

import java.util.HashMap;

import java.util.Map;

import java.util.Random;

public class LinkShortener {

private static final String BASE\_URL = "https://short.link/";

private static final int SHORT\_LINK\_LENGTH = 8;

private Map<String, String> urlMappings;

public LinkShortener() {

this.urlMappings = new HashMap<>();

}

// Method to generate a random short link

private String generateShortLink() {

char[] characters = "ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789".toCharArray();

StringBuilder shortLink = new StringBuilder();

Random random = new Random();

for (int i = 0; i < SHORT\_LINK\_LENGTH; i++) {

char randomChar = characters[random.nextInt(characters.length)];

shortLink.append(randomChar);

}

return shortLink.toString();

}

// Method to shorten a long URL

public String shortenURL(String longURL) {

String shortLink = generateShortLink();

String completeShortLink = BASE\_URL + shortLink;

urlMappings.put(completeShortLink, longURL);

return completeShortLink;

}

// Method to expand a short URL

public String expandURL(String shortURL) {

return urlMappings.getOrDefault(shortURL, "Short URL not found");

}

public static void main(String[] args) {

LinkShortener linkShortener = new LinkShortener();

// Example usage

String longURL = "https://www.example.com";

String shortURL = linkShortener.shortenURL(longURL);

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

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

String expandedURL = linkShortener.expandURL(shortURL);

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

}

}