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WEEK-2 : Link Shortener Development

MOTIONCUT

JAVA PROGRAMMING PROJECT WEEK-2

PROGRAM

import java.util.HashMap;

import java.util.Map;

import java.util.Random;

import java.util.Scanner;

public class SimpleLinkShortener {

private static final String CHARACTERS = "abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789";

private static final int SHORT\_URL\_LENGTH = 6;

private Map<String, String> shortToLongMap;

private Map<String, String> longToShortMap;

public SimpleLinkShortener() {

shortToLongMap = new HashMap<>();

longToShortMap = new HashMap<>();

}

public String shortenURL(String longURL) {

String shortURL = generateShortURL();

shortToLongMap.put(shortURL, longURL);

longToShortMap.put(longURL, shortURL);

return shortURL;

}

public String expandURL(String shortURL) {

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

}

private String generateShortURL() {

StringBuilder shortURL = new StringBuilder();

Random random = new Random();

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

int index = random.nextInt(CHARACTERS.length());

shortURL.append(CHARACTERS.charAt(index));

}

return shortURL.toString();

}

public static void main(String[] args) {

SimpleLinkShortener linkShortener = new SimpleLinkShortener();

Scanner scanner = new Scanner(System.in);

while (true) {

System.out.println("Choose an option:");

System.out.println("1. Shorten a URL");

System.out.println("2. Expand a URL");

System.out.println("3. Exit");

int choice = scanner.nextInt();

scanner.nextLine(); // Consume newline

switch (choice) {

case 1:

System.out.print("Enter the long URL to shorten: ");

String longURL = scanner.nextLine();

String shortURL = linkShortener.shortenURL(longURL);

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

break;

case 2:

System.out.print("Enter the short URL to expand: ");

String shortInput = scanner.nextLine();

String expandedURL = linkShortener.expandURL(shortInput);

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

break;

case 3:

System.out.println("Exiting program.");

scanner.close();

System.exit(0);

default:

System.out.println("Invalid choice. Please choose again.");

break;

}

}

}

}

Output:

