

## **Experiment No: 1**

**Student name: Mohammad Kaif**

**Branch: B.E./C.S.E.**

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**Subject Name: System Design**

**Subject Code: 23CSH-314**

**UID: 23BCS12884**

**Section/Group: KRG-2A**

**Date of Performance: 07/01/2026**

### **1. Aim: URL Shortner Designing**

### **2. Requirement Gathering**

#### **a. Functional Requirements**

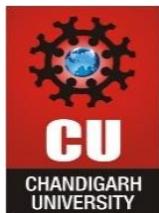
- Create a short URL from a Long URL
- Optional:
  - (a) Support custom URL
  - (b) Supports expiration date : Default + Custom expiration
  - (c) Unique Short URL
- User should get redirected to the original URL from short URL.

#### **b. Non Functional Requirements**

- Low Latency: response in least amount of time: ( On URL-creation, on URL Redirect) - 200 ms
- Scalability: 100M daily active user & application should be able to short 1B URL
- Unique: Shorten URL should be Unique.
- Availability: 24 x 7 available

### **3. Core Entities**

- Short – URL
- Long – URL
- User



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## 4. Tool Used

- Postman API
- draw.io
- Lucid Chart
- excalidraw

## 5. API Designing

### i. POST Endpoint :

- /v1/url -> short-URL
- Body
  - {
    - longURL,
    - customURL ? (optional),
    - expirationDate

### ii. GET Endpoint:

- /v1/url/{short-url}