

# Project: **URL Shortener**

Design Document

Version 1.0

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# Revision History

Date (dd/mm/yyyy)	Version	Description	Author
16/02/2019	1.0	Design Document of URL Shorten Project.	Subhajit Das

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# 1. Introduction of Design Document

The detailed study about different operations that are performed by a system and the relationship between them within or outside of the system is called Analysis of a system or the given project.

## **Objective of Design Document:**

The main objective of this design is to analyse and understanding the system in detail. In this way the features and constitute parts of at least feasible solution are identified and then documented.

## **Road Map for Projects:**

The design activity provides a roadmap to progressively transform the requirements through a number on stages into the final product by describing the structure of the system to be implemented.

## **Activities Used in This Design Document:**

Different activities that are used in this document are briefly explained below.

### **Entity Relationship Diagram (ERD):**

It is graphical representation of entities and their relationships to each other.

### **Sequence Diagrams:**

It is a most popular kind Interaction Diagram. It is helpful in both when checking requirements and when checking designs.

### **Architecture Design Diagram:**

This describes the layered Architectural model for the software system.

### **Class Diagram:**

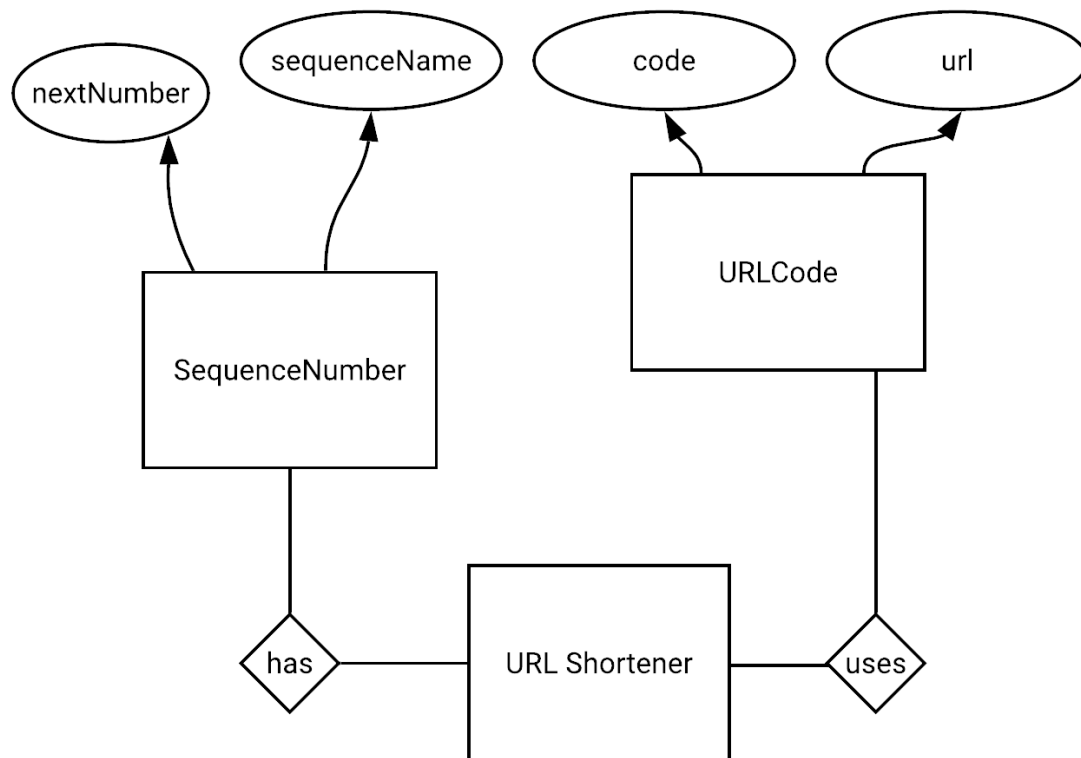
This describes the system by showing the classes, their attributes and relationships among objects etc.

### **Interface Design:**

This design shows the important features of a product.

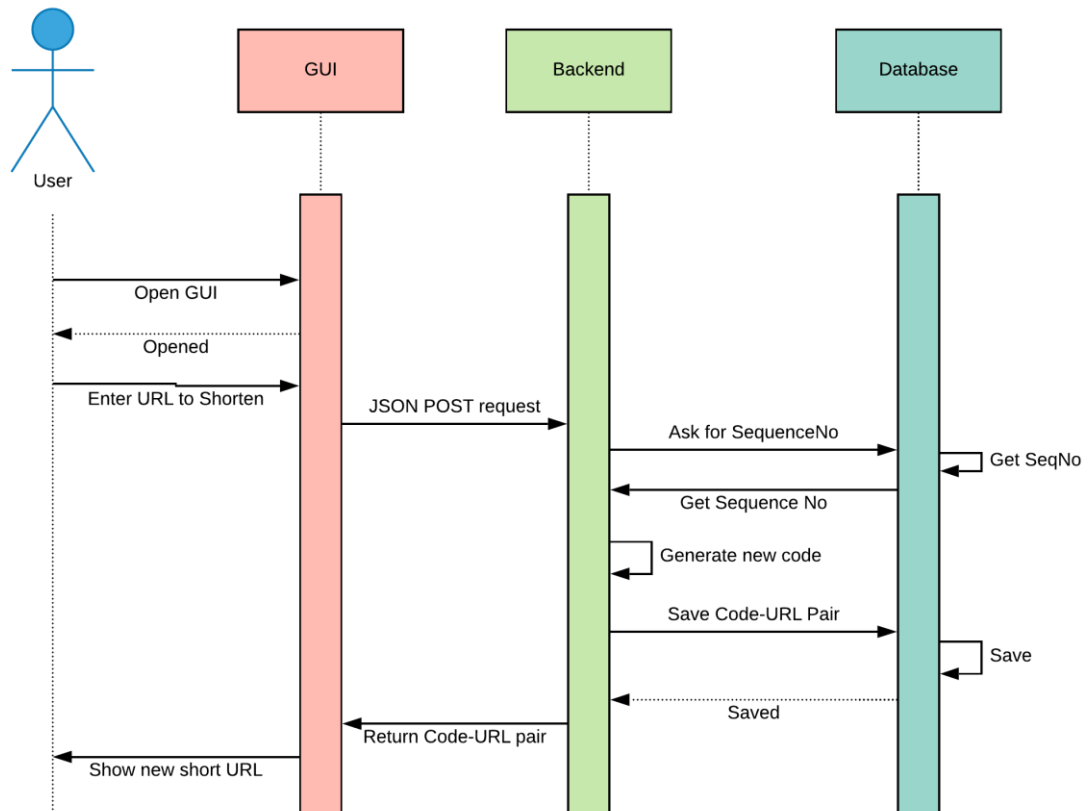
**Test Cases:** Finally test cases are provided in detail.

## 2. Entity Relationship Diagram (ERD)

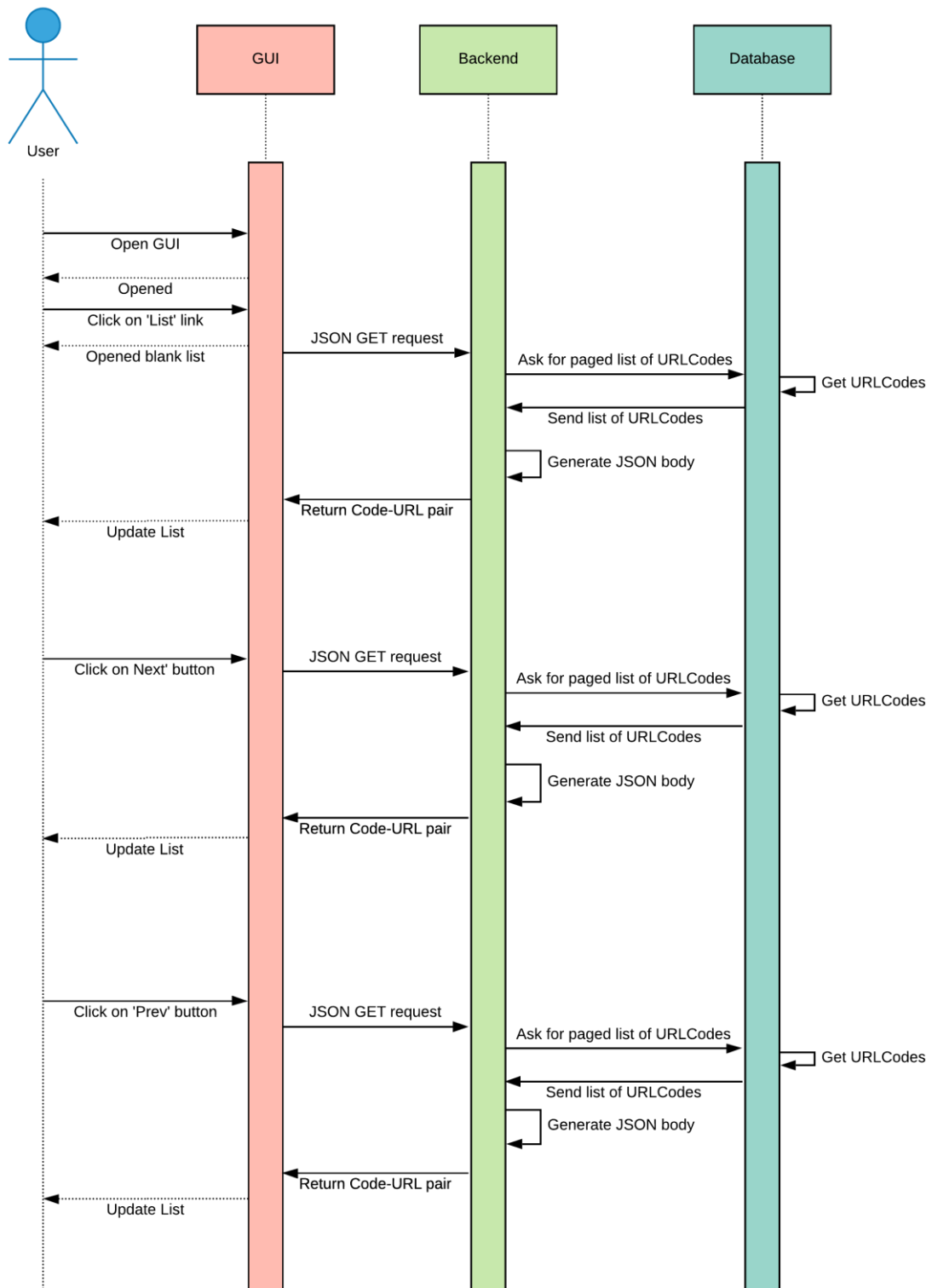


### 3. Sequence Diagrams

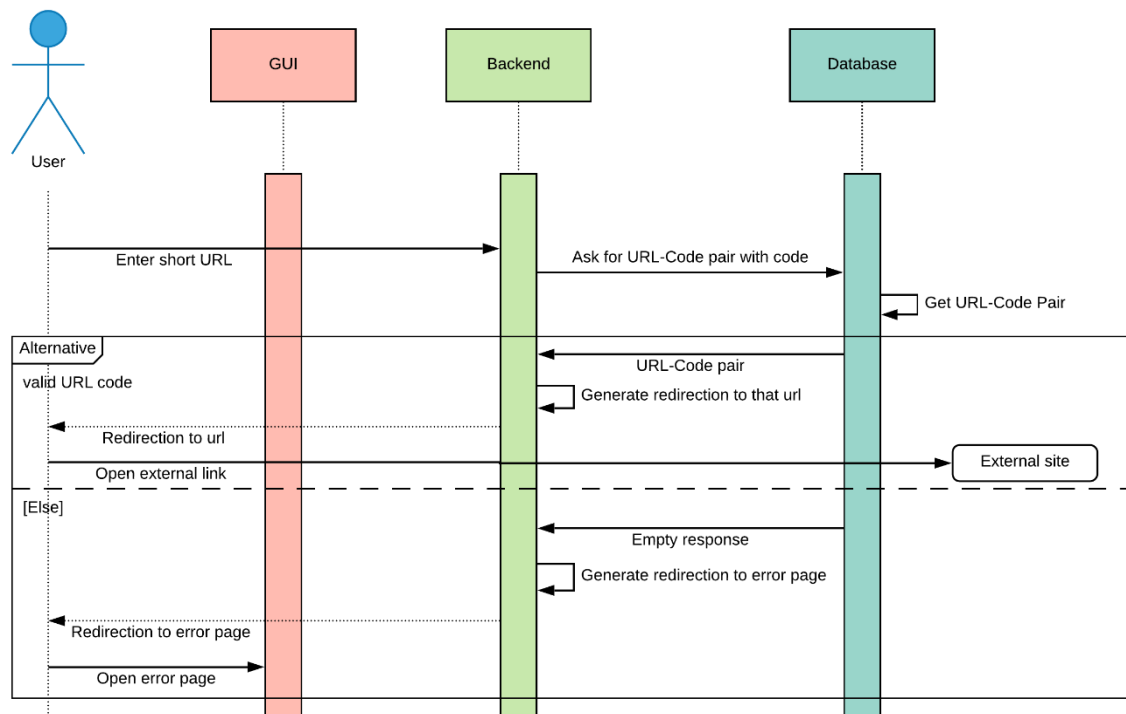
#### 1. Add/Shorten URL:



## 2. List All URLs:

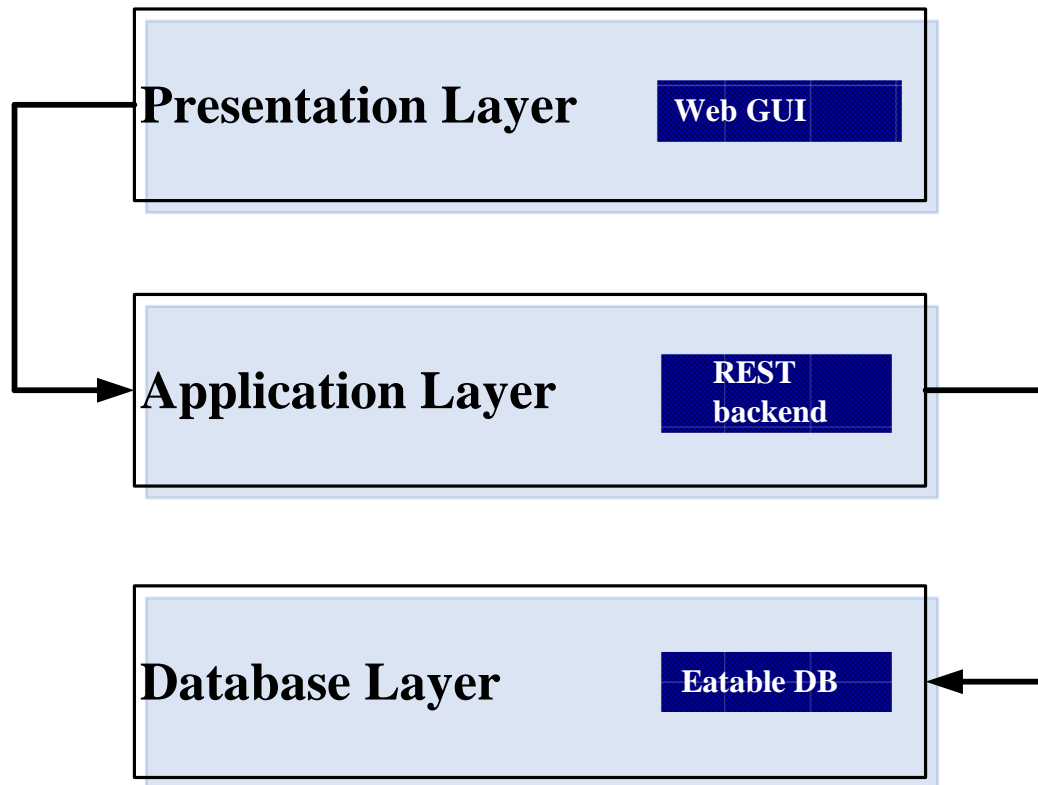


### 3. Redirection:

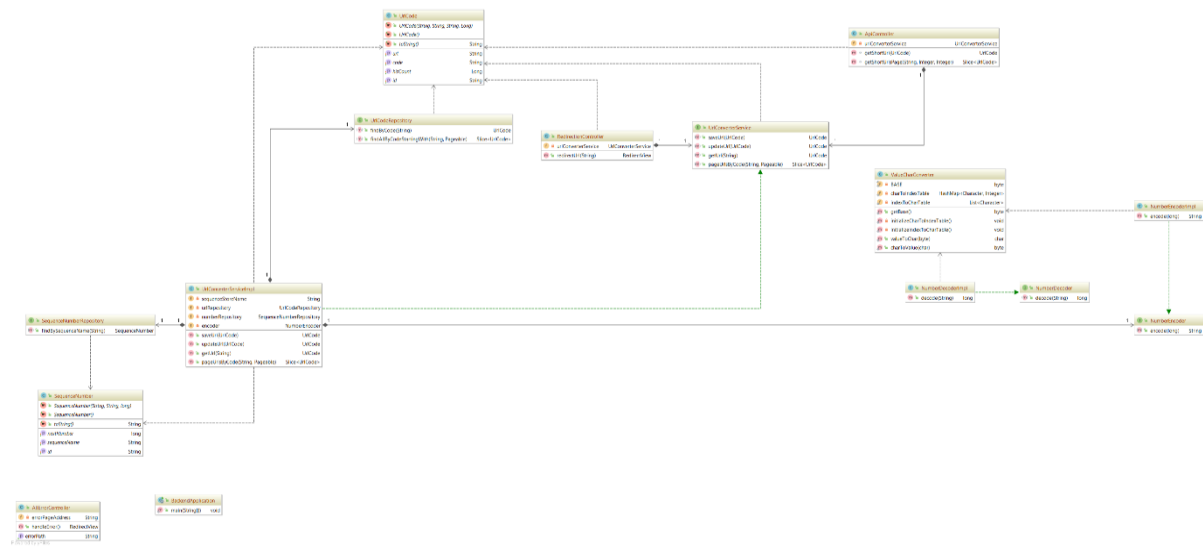




#### 4. Architecture Design Diagram



## 5. Class Diagrams



## 6. Interface Design

Shorten List

Shorten URL

URL

http://google.com

Shorten

Shorten/Add URL

Shorten List

URL Shortened

×

New URL: <http://localhost:8080/b>

Old URL: <http://google.com>

Shorten

Generated short URL

## Shorten List

### Shortened URLs

Base URL: <http://localhost:8080>



Code	URL	Hits
b	<a href="http://google.com">http://google.com</a>	0
c	<a href="http://google.co.uk">http://google.co.uk</a>	0
d	<a href="http://google.co.in">http://google.co.in</a>	0
e	<a href="http://fb.com">http://fb.com</a>	0
f	<a href="http://facebook.com">http://facebook.com</a>	0
g	<a href="http://facebook.co.uk">http://facebook.co.uk</a>	0
h	<a href="http://subhajtadas.tk">http://subhajtadas.tk</a>	1
i	<a href="http://github.com">http://github.com</a>	0
j	<a href="https://angular.io">https://angular.io</a>	0
k	<a href="https://eatable.co.in">https://eatable.co.in</a>	0
l	<a href="https://www.nokia.com/">https://www.nokia.com/</a>	0
m	<a href="https://www.w3schools.com">https://www.w3schools.com</a>	0
n	<a href="https://github.com/Subhajtadas298">https://github.com/Subhajtadas298</a>	0
o	<a href="https://github.com/Subhajtadas298/WiFi_AVRISP">https://github.com/Subhajtadas298/WiFi_AVRISP</a>	0
p	<a href="https://www.amazon.in">https://www.amazon.in</a>	0

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### List URLs

Shorten List

Shortened URLs 

Base URL: http://localhost:8080



Code	URL	Hits
i	http://github.com	0

< Prev

Next >

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[Search List URLs](#)

Shorten List



## Oops wrong address!

You tried to access a link that does not exist

Please check your address

Or [try the url shortener](#) yourself

Error screen

## 7. Test Cases

**Note:** It is to be noted that the backend and frontend have their own automated testing set up.

For backend, a fresh build or test tasks of Gradle will trigger those automated tests.

For frontend, we are required to run karma with angular test. This will run all automated tests for the front end.

### Test Case 7.1

Title: Shorten URL

Pre-Conditions				
User has opened the Web UI.				
Steps	Action	System Response Expected	Result	Tested by
1.	User clicks "Shorten" button.	It will show error as input is less than 4 characters.	Pass/Fail	Subhajit Das
2.	User fills the URL input field and press "Shorten" button.	UI will show a success message with newly generated short URL and entered URL.	Pass/Fail	

### Test Case 7.2

Title: List URL

Pre-Conditions				
<ul style="list-style-type: none"><li>At least 11 to maximum 20 URLs are shortened.</li><li>User in in shorten page.</li></ul>				
Steps	Action	System Response Expected	Result	Tested by
1.	User click on "List" link.	A list of all previously shortened URLs are shown. "Next" button should be active, while	Pass/Fail	Subhajit Das



		"Prev" button should be disabled.		
2.	User presses the "Next" button.	List screen will be updated with newer entries. "Next" button will be disabled. "Prev" button will be active.	Pass/Fail	
3.	User presses the "Prev" button.	List screen will be updated with previous entries. "Prev" button will be disabled. "Next" button will be active.	Pass/Fail	
4.	User enters search term in search box.	The list will automatically update with code items, starting with that term.	Pass/Fail	
5.	User clears search box by manually or "X" button.	List restores to previously all items.		

### Test Case 7.3

#### Title: Redirection

Pre-Conditions				
<ul style="list-style-type: none"> <li>At least 1 URLs are shortened.</li> <li>User must have the shortened URL.</li> </ul>				
Steps	Action	System Response Expected	Result	Tested by
1.	User enters a previously shortened URL into browser address bar directly.	User will be redirected to actual URL.	Pass/Fail	Subhajit Das

2.	<b>User</b> enters an URL with invalid code, such as (0) or code which was not generated previously.	User will see the error page.	<b>Pass/Fail</b>	
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