

# URL-Shortener

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## 1 Overview

URL shortening is the translation of a long Uniform Resource Locator (URL) into an abbreviated alternative that redirects to the longer URL. A shortened URL may be desired for messaging technologies that limit the number of characters in a message, for reducing the amount of typing required if the reader is copying a URL from a print source, for making it easier for a person to remember, or for the intention of a permalink.

The aim of this project is to provide the implementation of a distributed url-shortener service.

## 2 Design choices

There are three fundamental metrics to assess a distributed system: Consistency, Availability and Partition Tolerance. It is well known, after the publication of the CAP theorem, that it is impossible to achieve all of them, at the same time, in a distributed system.

In this project, I have chosen to focus on availability and partition tolerance, at the expense of consistency. In particular, the consistency model is not a strong one. In the following subsections, I list and explain the design choices that I made.

### 2.1

### 2.2

### 2.3

### 2.4

### 2.5

### 2.6

### 2.7