

URL shortener

Assignment: Make an HTTP service that serves to shorten URLs, with the following functionalities:

- Registration Web address (API)
- Redirect client in accordance with the shortened URL
- Usage Statistics (API)

Assignment description:

1. Basic architecture

The service should have two parts: configuration and user.

1.1. Configuration part

The configuration part is invoked using REST calls with JSON payload and is used for:

- Opening of accounts
- Registration of URLs in the 'Shortener' service
- Displaying stats

a) Opening of accounts

HTTP method	POST
URI	/account
Request type	application/json
Request Body	JSON object with the following parameters: <ul style="list-style-type: none"> • AccountId (String, mandatory) Example: { AccountId : 'myAccountId'}
Reponse Type	application/json
Response	We distinguish the successful from the unsuccessful registration. Unsuccessful registration occurs only if the concerned account ID already exists. The parameters are as follows: <ul style="list-style-type: none"> • success: true false • description: Description of status, for example: account with that ID already exists • password: Returns only if the account was successfully created. Automatically generated password length of 8 alphanumeric characters Example {success: 'true', description: 'Your account is opened', password: 'xC345Fc0'}

b) Registration of URLs

<i>HTTP metoda</i>	POST
<i>URI</i>	/register
<i>Request type</i>	application/json
<i>Request Headers</i>	Authorization header with Basic authentication token
<i>Request Body</i>	<p>JSON object with the following parameters:</p> <ul style="list-style-type: none"> url (mandatory, url that needs shortening) redirectType : 301 302 (not mandatory, default 302) <p>Example: { url: 'http://stackoverflow.com/questions/1567929/website-safe-data-access-architecture-question?rq=1', redirectType : 301 }</p>
<i>Reponse Type</i>	application/json
<i>Response</i>	<p>Response parameters in case of successful registration are as follows:</p> <ul style="list-style-type: none"> shortUrl (shortened URL) <p>Example: { shortUrl: 'http://short.com/xYswlE' }</p>

c) Retrieval of statistics

<i>HTTP metoda</i>	GET
<i>URI</i>	/statistic/{AccountId}
<i>Request Headers</i>	Set Authorization header and authenticate user
<i>Reponse Type</i>	application/json
<i>Response</i>	<p>The server responds with a JSON object, key:value map, where the key is the registered URL, and the value is the number of this URL redirects..</p> <p>Example:</p> <pre>{ 'http://myweb.com/someverylongurl/thensomedirectory/': 10, 'http://myweb.com/someverylongurl2/thensomedirectory2/': 4, 'http://myweb.com/someverylongurl3/thensomedirectory3/': 91, }</pre>

d) Statistics page

Web page which should display data from /statistics/{AccountId} HTTP method. It should be simple HTML form. Use react JS framework to display data. Page should automatically refresh data.

1.2. Redirecting

Redirecting the client on the configured address with the configured http status.

2. General requirements

- Use any programming language
- Pay attention that the response http statuses comply with the REST standards (list status <http://www.w3.org/Protocols/rfc2616/rfc2616-sec10.html>). The application should not require any additional (external) configuration, meaning it should not have dependencies that aren't declared in POM.
- The application should work out of the box, on first run without any additional configuration
- In accordance with the above claim, it is not allowed to use databases unless they are embedded, therefore, built into the application itself
- It is allowed to use any framework
- Make a help page (url: /help) containing instructions for installation, launching and usage

Important note: send your solution through a link on cloud-based sites (Drobox, Bitbucket, GitHub, WeTransfer, etc.), or otherwise we will not be able to receive it due to possible system safety issues.

