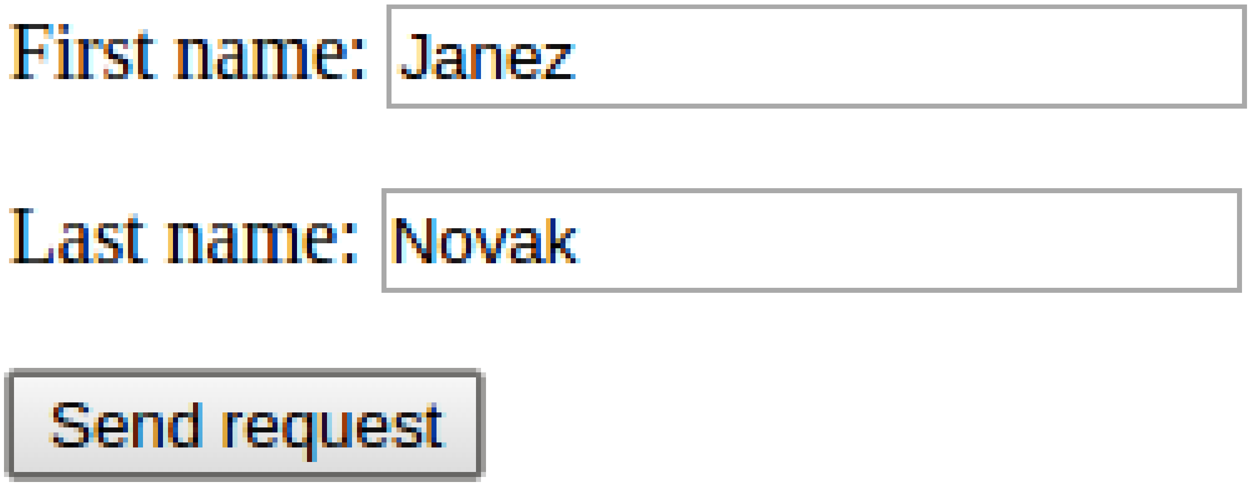
Web Technologies

HTTP Request methods

HTTP GET Request: Client

```
<form action="some-destination.php" method="get">
    <p><label for="first_name">First name:</label>
    <input type="text" name="first_name" id="first_name" /></p>

    <p><label for="last_name">Last name:</label>
    <input type="text" name="last_name" id="last_name" /></p>

    <p><button type="submit">Send request</button></p>
</form>
```



First name: Janez

Last name: Novak

HTTP GET Request: What is sent to the server?

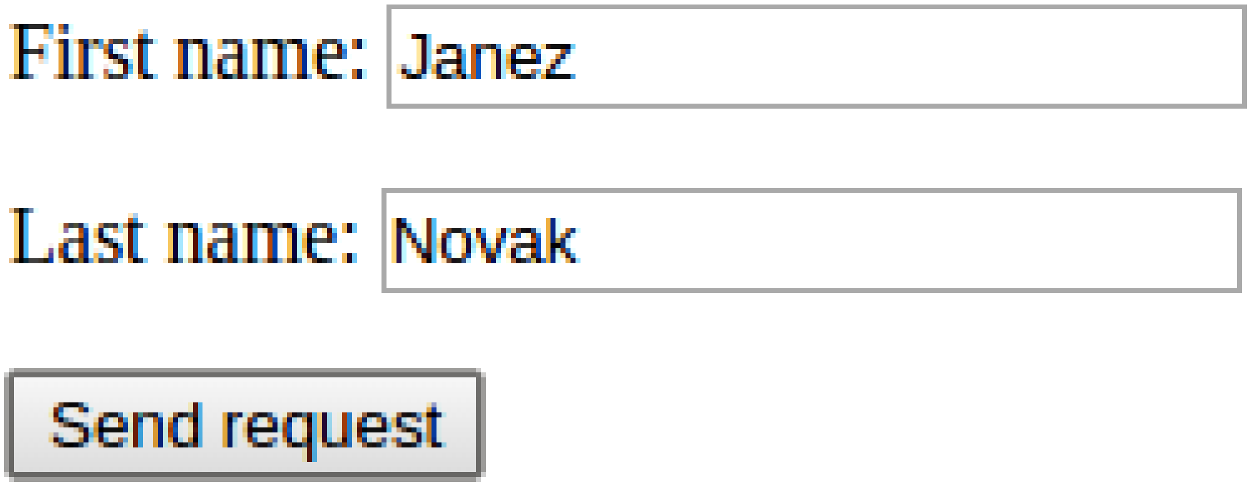
```
GET /some-destination.php?first_name=Janez&last_name=Novak HTTP/1.1
Host: localhost
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,...
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.8,sl;q=0.6
Content-Type: application/x-www-form-urlencoded
Origin: http://localhost
User-Agent: Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, ...
```

Accessing parameters in PHP

```
<?php

// inside some-destination.php

echo $_GET["first_name"];
echo $_GET["last_name"];
```

HTTP POST Request: Client

```
<form action="some-destination.php" method="post">
    <p><label for="first_name">First name:</label>
    <input type="text" name="first_name" id="first_name" /></p>

    <p><label for="last_name">Last name:</label>
    <input type="text" name="last_name" id="last_name" /></p>

    <p><button type="submit">Send request</button></p>
</form>
```



First name: Janez

Last name: Novak

HTTP POST Request: What is sent to the server?

```
POST /some-destination.php HTTP/1.1
Host: localhost
User-Agent: Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, ...
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.8,sl;q=0.6
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,...
Content-Length: 32
Content-Type: application/x-www-form-urlencoded

first_name=Janez&last_name=Novak
```

Accessing parameters in PHP

```
<?php

// inside some-destination.php

echo $_POST["first_name"];
echo $_POST["last_name"];
```

HTTP request methods

- Indicates the method to be performed on the resource (in given URI)
- Always in uppercase

- **GET**: retrieve the resource
- **POST**: post resource to the server
- **PUT**: replace current resource on the server with provided resource
- **DELETE**: remove resource
- HEAD, CONNECT, OPTIONS, TRACE PATCH

HTTP request methods

- Using HTML form, we can send only GET and POST request
  - When do we use which?
- Basic idea
  - **GET:** Requests data from a specified resource
  - **POST:** Submits data to be processed to a specified resource

Using GET

- Request parameters are sent in the URL

```
GET /search?q=http+tutorial&sourceid=chrome HTTP/1.1
Host: www.google.si
```

- GET requests
  - can be **cached**
  - remain in the **browser history**
  - can be **bookmarked**
  - should **never** be used for **sensitive data**
  - have **length restrictions**
  - used only to **retrieve data**

Using POST

- Request parameters are sent in the body of the HTTP request

```
POST /books/add HTTP/1.1
Host: localhost
Content-Type: application/x-www-form-urlencoded
Content-Length: 53

author=Ivan+Cankar&title=Na+klancu&price=10&year=1903
```

- POST requests
  - never cached
  - do **not** remain in the **browser history**
  - cannot be bookmarked
  - have **no restrictions** on **data length**

Using GET method

- The GET method means retrieve whatever information is identified by the Request-URI
- GET requests should be **safe**
  - Should cause no other action than retrieval
- GET requests should be **idempotent**
  - The side effects of multiple identical requests are the same as of one request

Using POST method

- POST is used to request that the server accepts the entity enclosed in the request as a new subordinate of the resource identified by the URI in the request line
- POST is designed to allow a **uniform method** to cover the following functions:
  - Annotation of existing resources;
  - Posting a message to a bulletin board, newsgroup, mailing list, or similar group of articles;
  - Providing a block of data, such as the result of submitting a form, to a data-handling process;
  - Extending a database through an append operation.

Resources

- W3Schools. HTTP Methods: GET vs. POST: https://www.w3.org/Protocols/rfc2616/rfc2616-sec9.html
- RFC 2616 Fielding, et al. Hypertext Transfer Protocol – HTTP/1.1: 9 Methods definition: https://www.w3.org/Protocols/rfc2616/rfc2616-sec9.html