

Java Technologies - Lab 1

[valid 2022-2023]

Java Servlet Technology

Compulsory (1p)

Create a servlet that receives a word and returns an HTML page containing the letters of that word presented as an ordered list.

Homework (2p)

Modify the servlet above such that:

- It receives an integer as a parameter, called *size*, and it returns all the permutations of length *size* of the given letters. If the size is 0 (default), it will return all the sequences.
- If the servlet has access to a server-side file containing a list of acceptable words (a dictionary), it will return only the sequences forming valid words. This list should be large enough; you may use [aspell](#) to generate a text file containing English words, or anything similar: [WordNet](#), [dexonline](#), etc. For example, if the servlet receives the letters *a,a,j,v* and the size is 0, it may return the list *aa, ava, java* (assuming it uses an english dictionary).

The servlet invocation will be done using a simple HTML form. The servlet will return the response as an HTML page.

Bonus (2p)

- Invoke the service from a desktop application (Java, Python, .NET, etc.). In this case, the servlet must respond with a simple text containing the list of words, instead of an HTML page. Modify the servlet so it stores all the requests and results in a log file. Write in the server log the following information about each request: the HTTP *method* used, the IP-address of the client, the *user-agent*, the client *language(s)* and the *parameters* of the request. (Take a look at [HttpServletRequest API](#)).
- If the dictionary is large enough, the servlet may take some time in order to create the response. Analyze concurrency issues and resource contention, invoking the servlet repeatedly, in an asynchronous manner.

Bibliography

- [Lab slides](#)
- [Java EE Specification APIs](#)
- [Java EE Tutorial](#)
- [Java Servlet Technology](#)
- [java.net.http.HttpClient](#)