

Master's Thesis

Development and Implementation of a Backend for the Innovative Desktop-as-a-Service Solution DESIGN

Task Description

As part of a thesis project, a new backend for the innovative and free Desktop-as-a-Service solution DESIGN shall be developed and implemented. DESIGN consists of three components: backend, DaaS application, and frontend.

- DaaS application: <https://github.com/christianbaun/design-daas>
- Frontend: <https://github.com/nuromedia/design-daas-application-frontend>
- Backend: <https://github.com/nuromedia/design-daas-application-backend>

The project has been completed and the developed software is open source.

The actual DaaS application and the frontend are implemented in Python, are of good quality, can be installed relatively easily, and are sufficiently documented.

Unfortunately, the backend is of poor quality and the documentation is also inadequate. In addition, it was developed in PHP.

The objective of the thesis is to develop and implement a new backend for DESIGN in Python or another modern programming language.

Possible work packages for the thesis:

- WP1: Research on the overall DESIGN system.
- WP2: Analysis of the existing PHP backend.
- WP3: Development of a new backend.
- WP4: Implementation of the new backend in Python or another modern programming language.
- WP5: Development of a demonstrator.
- WP6: Testing, evaluation, and documentation.

Selected References

- Challenges and Solutions of Developing and Implementing a Novel Desktop-as-a-Service (slides) https://www.christianbaun.de/Dokumente/Slides_DaaS_DESIGN_MobiWis_August_2024.pdf
- Challenges and Solutions of Developing and Implementing a Novel Desktop-as-a-Service (paper). 20th International Conference on Mobile Web and Intelligent Information Systems (MobiWis 2024), August 19, 2024, Vienna. <https://link.springer.com/book/10.1007/978-3-031-68005-2>
- Grenzen verschiedener Betriebssysteme und Endgeräte überwinden durch neuartiges Desktop-as-a-Service. Informatik-Spektrum 5-6/2024, Band 47, S.153-162 <https://doi.org/10.1007/s00287-024-01583-x>
- Closing the Gap between Web Applications and Desktop Applications by Designing a Novel Desktop-as-a-Service (DaaS) with Seamless Support for Desktop Applications. Open Journal of Cloud Computing (OJCC), Vol. 8, No. 1, 2023, pp. 1-19 <https://d-nb.info/1310400962/34>

Contact

Prof. Dr. Christian Baun

christianbaun@fb2.fra-uas.de

<http://www.christianbaun.de>