

LSDF-Portal: Project administration for the Large Scale Data Facility

Felix Karg

Wednesday, February 16th, 2022

Steinbuch Centre for Computing (SCC)



Karlsruher Institut für Technologie

What is the Large Scale Data Facility?

- KIT-hosted storage for research
- About 18 PetaByte (1PB = 1000 TB)
- Can be accessed by most commonly used storage protocols (Samba, NFS, HTTPS/WebDav, SFTP, SCP, ...)
- Direct integration with e.g. HoReKa and other HPC-systems



- For KIT, Baden-Württemberg, and worldwide partnered researchers
- Financed by MWK BW, KIT, and Helmholtz-Society

Who am I?

- Got my Bachelors in 2020 from the University of Freiburg
- For Master at KIT since WS2020
- Working student and freelancer
- Using Django since mid-2021
(about 4 months before praktikum kickoff)
- Main Interests: Programming, Statistics (ML), Biotechnology
- Current Hobbies: Reading, Dancing, Automation



Felix Karg

What is the LSDF-Portal

Introduction to Django

Project Results

Conclusion

What is the LSDF-Portal

Introduction to Django

Project Results

Conclusion

What is the LSDF-Portal

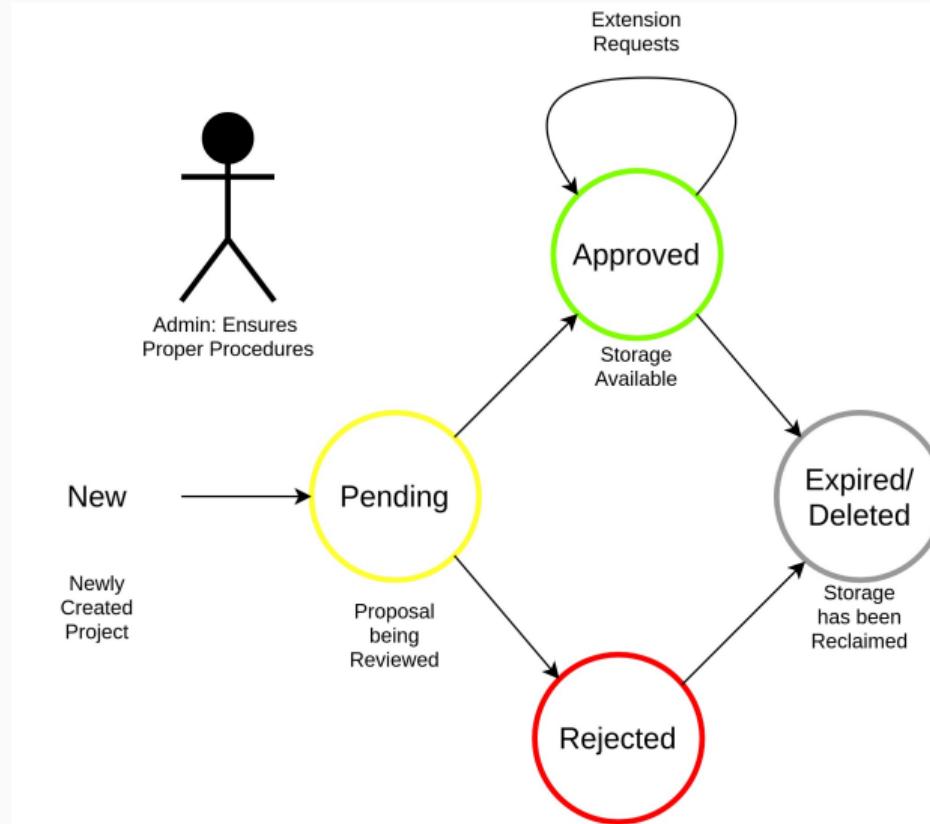
Overview

Screenshots

What is the LSDF-Portal?

- LSDF-Portal: *administration* of storage projects
 - Research groups can request storage capacity for research projects
 - Allows for *structured interaction* with admins
 - *Transparent communication* of project status
 - Created and improved over multiple SCC-internships
- Internally available at:
<https://www.lsdf.kit.edu/os/storageprojects/>
- Service description:
<https://www.scc.kit.edu/dienste/11228.php>

Project Lifecycle



What is the LSDF-Portal

Overview

Screenshots

Live Demo!

After First Login

The screenshot shows a web-based interface for managing storage projects. At the top, there is a header bar with the KIT logo, the text "Steinbuch Centre for Computing (SCC)", and navigation links for HOME, SITEMAP, ENGLISH, IMPRESSUM, DATENSCHUTZ, and KIT. Below the header, the main content area has a title "Storage projects" and a green button with a plus sign (+). A message states "No requests are available.".

HOME | SITEMAP | ENGLISH | IMPRESSUM | DATENSCHUTZ | KIT

KIT
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Storage projects +

No requests are available.

Project Creation

[HOME](#) | [SITEMAP](#) | [ENGLISH](#) | [IMPRESSUM](#) | [DATENSCHUTZ](#) | [KIT](#)



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[Home](#)

Create new project

Project information

Project name*

Contacts

Owner of the project

Firstname*

Lastname*

Project Creation: Add Contacts

Contacts

Owner of the project

Firstname*

Lastname*

Email*

Institute

Roles

- Head of the project
- Technical contact

Organization

Additional contact



Firstname

Lastname

Email

Institute

Available Fields

Please Specify where your project is mainly located according to the [DFG Fachsystematik](#):

DFG Discipline*

DFG Review Board*

DFG Subject Area*

End of the project*

06.02.2023

How long you need the storage. You will be able to request an extension

Capacity*

Expected storage capacity in TB (1 TB = 1000 GB)

Directory name*

Fields filled out

Please Specify where your project is mainly located according to the [DFG Fachsystematik](#):

DFG Discipline*

Natural Sciences (3)



DFG Review Board*

Mathematics (312)



DFG Subject Area*

Mathematics (312-01)



End of the project*

06.02.2023

How long you need the storage. You will be able to request an extension

Capacity*

15

Expected storage capacity in TB (1 TB = 1000 GB)

Submit Proposal

Protocols

- SSH, SFTP, SCP, HTTPS/Web are enabled for all storage projects
- CIFS
- NFS V3 (Client needs to be connected to KIT-IDM)

Access control

Owner name*

Who should be the owner the project directory? The owner can be a KIT user (e.g. ab1234) or a KIT service account (e.g. OE-ProjectName-0001). Please, contact your ITB to create a service account.

Group name*

Which group should get access to your project directory (e.g. OE-ProjectName-LSDF)? Please contact your ITB to create a group.

Group permission*

No permissions

▼

- Extended group permissions (ACLs)

Submit Storage Proposal

Successful Submission

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Your storage request has been successfully saved.

[Home](#)

Edit project



Project information

Project name*

Contacts

Owner of the project

Project in List

HOME | SITEMAP | ENGLISH | IMPRESSUM | DATENSCHUTZ | KIT



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Storage projects

+ [Create new project](#)

Show 10 entries [Change](#)

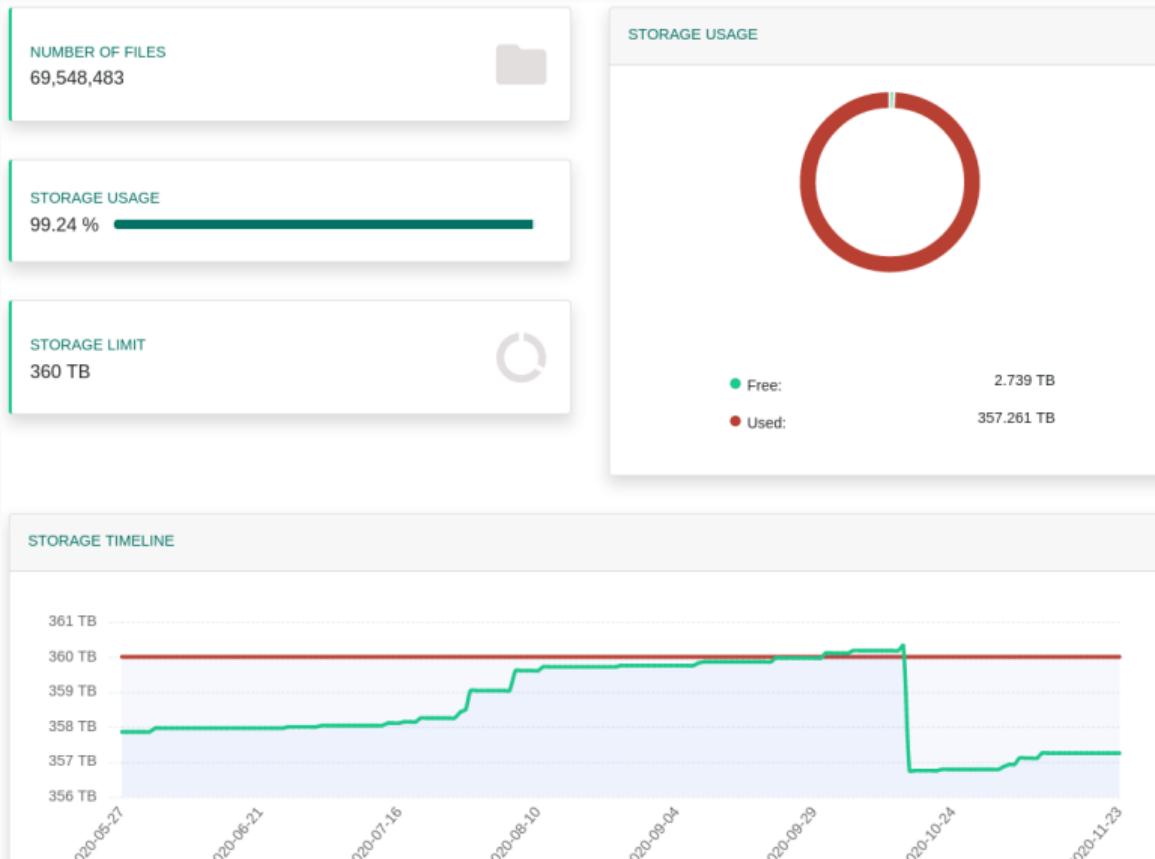
Search:

Project Name	Institute	Capacity	Last changes	
new project		Requested: 15 TB	6.2.2022 14:27	

Showing 1 to 1 of 1 entries

[Previous](#) [1](#) [Next](#)

Storage Use Histogram



What is the LSDF-Portal

Introduction to Django

Project Results

Conclusion

What is Django? On their Website

Meet Django

Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source.



Ridiculously fast.

Django was designed to help developers take applications from concept to completion as quickly as possible.



Exceedingly scalable.

Some of the busiest sites on the web leverage Django's ability to quickly and flexibly scale.

Django Overview

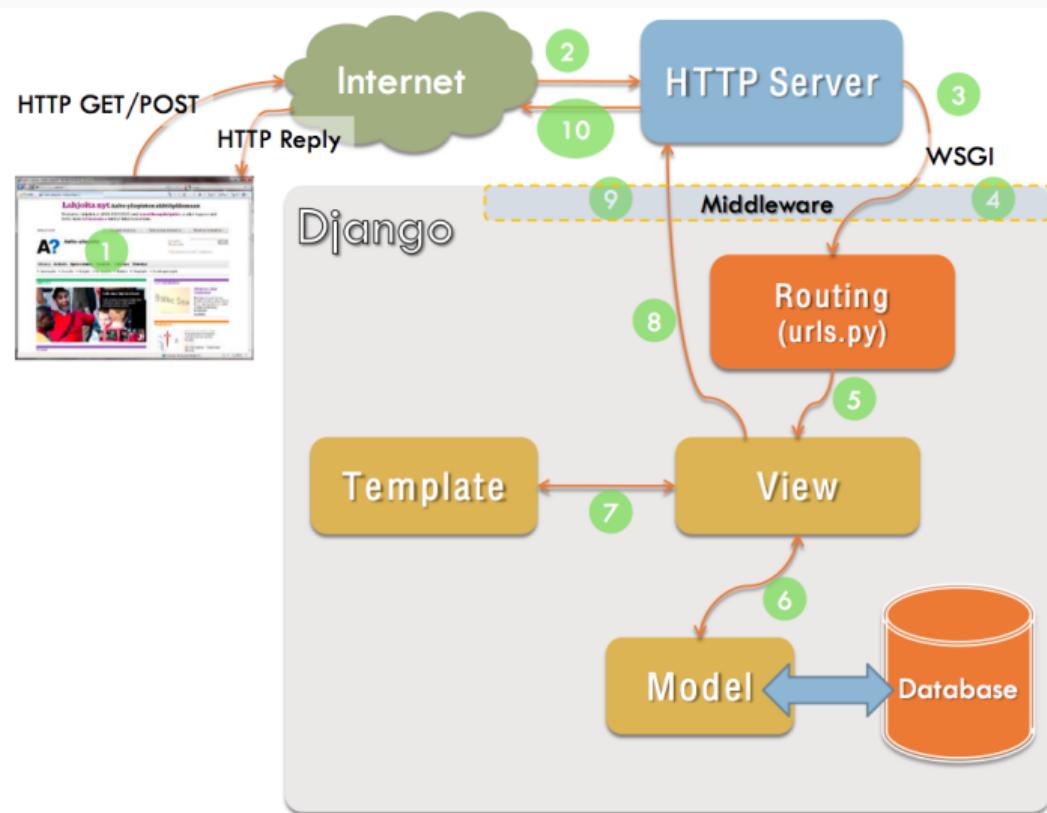


Image source: [1]

What is the LSDF-Portal

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Project Results

Proper Logging

Automatically Generate Documentation

What Research is the Storage used for?

Diff CSV to DFG Schema in Database

Small Mentions

Extension Requests

Changes to Logging

Situation:

- Used to be done in inconsistent formats with `print`-statements
- Traceback of Crash wasn't saved → no information to debug
- Good to get overview of Codebase and touch many files

Now:

- Properly defined Logging levels (debug, info, warn, ...)
- Option to log messages in console, syslog and local file

Logging Now: Example

```
INFO [basehttp.log_message]: "GET / HTTP/1.1" 302 0
INFO [basehttp.log_message]: "GET /admin/login?next=/ HTTP/1.1" 302 0
INFO [basehttp.log_message]: "GET /admin/login/?next=/admin/login%3Fnext%3D/ HTTP/1.1" 200 2245
INFO [basehttp.log_message]: "GET /static/admin/js/nav_sidebar.js HTTP/1.1" 200 1360
INFO [basehttp.log_message]: "GET /static/admin/css/nav_sidebar.css HTTP/1.1" 200 2271
INFO [basehttp.log_message]: "GET /static/admin/css/login.css HTTP/1.1" 200 939
INFO [basehttp.log_message]: "GET /static/admin/css/base.css HTTP/1.1" 200 19513
INFO [basehttp.log_message]: "GET /static/admin/css/responsive.css HTTP/1.1" 200 18545
INFO [basehttp.log_message]: "GET /static/admin/css/fonts.css HTTP/1.1" 200 423
INFO [basehttp.log_message]: "GET /static/admin/fonts/Roboto-Light-webfont.woff HTTP/1.1" 200 85692
INFO [basehttp.log_message]: "GET /static/admin/fonts/Roboto-Regular-webfont.woff HTTP/1.1" 200 85876
WARNING [log.log_response]: Not Found: /favicon.ico
WARNING [basehttp.log_message]: "GET /favicon.ico HTTP/1.1" 404 7000
INFO [basehttp.log_message]: "POST /admin/login/?next=/admin/login%3Fnext%3D/ HTTP/1.1" 200 2405
INFO [basehttp.log_message]: "GET /static/admin/fonts/Roboto-Bold-webfont.woff HTTP/1.1" 200 86184
INFO [basehttp.log_message]: "GET /admin/login/?next=/ HTTP/1.1" 200 2205
INFO [basehttp.log_message]: "POST /admin/login/?next=/ HTTP/1.1" 200 2365
INFO [basehttp.log_message]: "GET /admin/login/ HTTP/1.1" 200 2204
INFO [basehttp.log_message]: "POST /admin/login/ HTTP/1.1" 200 2364
INFO [basehttp.log_message]: "GET / HTTP/1.1" 302 0
INFO [basehttp.log_message]: "GET /admin/login?next=/ HTTP/1.1" 302 0
INFO [basehttp.log_message]: "GET /admin/login/?next=/admin/login%3Fnext%3D/ HTTP/1.1" 200 2245
INFO [basehttp.log_message]: "POST /admin/login/?next=/admin/login%3Fnext%3D/ HTTP/1.1" 200 2405
INFO [basehttp.log_message]: "GET /persons/ HTTP/1.1" 200 13898
```

Project Results

Proper Logging

Automatically Generate Documentation

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Why Attempt Automatic Documentation?

Situation:

- I had still only a rudimentary understanding of the codebase
- Especially on available routes, endpoints, internal dependencies

Expectations:

- Automatic, Complete, Up-to-date Overview
- Creation of a frequently used reference
- Provides a documentation pipeline and *default*

Automatically Generate Documentation

traveler	Travelers
GET	/api/traveler Retrieve all travelers.
POST	/api/traveler Create a traveler.
GET	/api/traveler/{traveler} Display the specified traveler.
PUT	/api/traveler/{traveler} Update the specified traveler.
trip	Trips
GET	/api/trip Retrieve all trips.
POST	/api/trip Create a trip.
GET	/api/trip/{trip} Display the specified trip.
PUT	/api/trip/{trip} Update the specified trip.
quote-request	Quote Requests
purchase-request	Purchase Requests
Schemas	

(Success from different Project)

Failed, because:

- Autogeneration usually used to generate documentation for *DATA* endpoints
- 'Primitive' Views lacking important information for automatic generation

Was worth a try.

Project Results

Proper Logging

Automatically Generate Documentation

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Why Classify Storage Usage?

- Financial backers want to know what they pay for
 - Ministry for Science, Research and Culture (MWK BW)
 - KIT
 - Helmholtz-Society
- Particularly if it is used well
- Good existing classification from 'Deutsche Forschungsgesellschaft'

Engineering Sciences (131 Members)		Subject Areas
RB-Nr.	Review Board / Subject Area	
401	Production Technology	
402	Mechanics and Constructive Mechanical Engineering	
403	Process Engineering, Technical Chemistry	
404	Fluid Mechanics, Technical Thermodynamics and Thermal Energy Engineering	
405	Materials Engineering	
406	Materials Science	
407	Systems Engineering	
408	Electrical Engineering and Information Technology	
409	Computer Science	
	409-01 Theoretical Computer Science	
	409-02 Software Engineering and Programming Languages	
	409-03 Security and Dependability	
	409-04 Operating, Communication, Database and Distributed Systems	
	409-05 Interactive and Intelligent Systems, Image and Language Processing, Computer Graphics and Visualisation	
	409-06 Information Systems, Process and Knowledge Management	
	409-07 Computer Architecture and Embedded Systems	
	409-08 Massively Parallel and Data-intensive Systems	
410	Construction Engineering and Architecture	

Selection of DFG Subject Area upon Project Creation

Please Specify where your project is mainly located according to the [DFG Fachsystematik](#):

DFG Discipline*

DFG Review Board*

DFG Subject Area*

End of the project*

06.02.2023

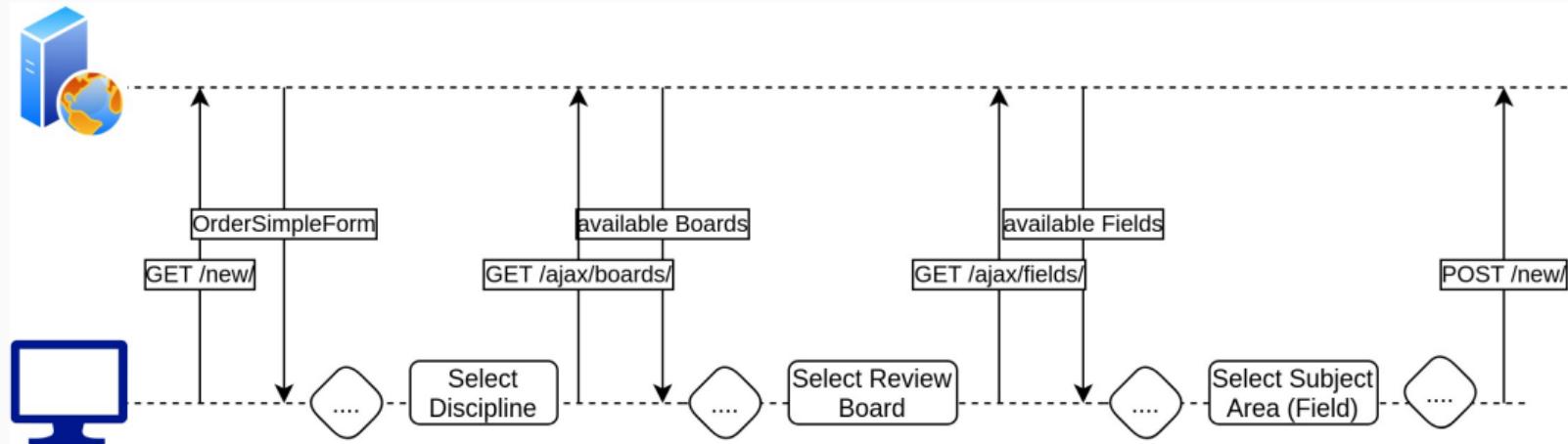
How long you need the storage. You will be able to request an extension

Capacity*

Expected storage capacity in TB (1 TB = 1000 GB)

Directory name*

Request Visualisation



Webpage: Requesting Fields for Boards

```
1  $("#id_board").change(function () {  
2      /* on change of `review board`, request new data for `subject area` field */  
3      var url = $("#form").attr("data-fields-url");          // <host>/ajax/fields/  
4      var board = $(this).val();        // Which board got selected  
5  
6      $.ajax({ // request available fields (subject areas) based on selected board  
7          url: url,           // resolved to <host>/ajax/fields/  
8          data: { 'board': board },    // currently selected board as part of request  
9          success: function (data, _ textStatus, _jqXHR) {  
10              $("#id_field").html(data);      // fill in available subject areas  
11          }  
12      });  
13  });
```

Backend: Answering With Available Fields

```
1 ## urls.py      # path(route: str, view: callable)
2 path(route='ajax/fields/', view=view_science_fields)
3
4 ## views.py
5 def view_science_fields(request: HttpResponseRedirect):
6     b_pk = request.GET.get('board')  # we get the pk of the selected board
7     if b_pk:  # select the Fields that are members of this Board
8         fields = Science_Field.objects.filter(board__pk=b_pk)
9         # SELECT field WHERE field.board.pk == b_pk
10        return render(request, 'dropdown_list_options.html',
11                      {'dropdown_items': fields})
12
13    return render(request, 'dropdown_list_options.html',
14                  {'dropdown_items': Science_Field.objects.none()})
15
```

Project Results

Proper Logging

Automatically Generate Documentation

What Research is the Storage used for?

Diff CSV to DFG Schema in Database

Small Mentions

Extension Requests

Problem: The DFG schema changes frequently

- We have the current schema in our database
- The DFG schema changes every four years
- It was last changed in 2020
- So it'll change again in two years
- The database will extensively references current schema
- Not clear how much will change (probably not a whole lot)

We implemented a command to compare any csv to the schema currently in the database: `manage.py dfg_schema_diff`

Usage of dfg_schema_diff

```
usage: manage.py dfg_schema_diff [-h] [--locale LOCALE] [--columns COLUMNS]
```

```
...
```

```
FILE
```

Show difference from given file schema to DFG schema in database. By default, ignores the now deprecated hierarchy level 1. ...

positional arguments:

FILE	Path to dfg_systematic.csv
------	----------------------------

options:

-h, --help	show this help message and exit
------------	---------------------------------

--locale LOCALE	Set the language of the name column to select. Can correctly select both '<locale>' and 'prefLabel@<locale>' columns. (Default: 'en')
-----------------	---

--columns COLUMNS	Dictionary mapping columns (numbers) to expected values "level" (in the hierarchy, category: 0, deprecated/ignored: 1, board: 2, field: 3), "notation" (e.g. 101-27), and locale translations, e.g. "en" (double quotes are important!). Defaults to auto.
-------------------	--

```
...
```

```
...
```

Project Results

Proper Logging

Automatically Generate Documentation

What Research is the Storage used for?

Diff CSV to DFG Schema in Database

Small Mentions

Extension Requests

List of Attempts or Results not further talked about

- Upgrading all dependencies, especially Django from v2 to v3
- Refactoring and Renaming of Models: Order to LSDFProject, PersonOrder to ProjectRole
- Failed Attempt to rename the Django application: order to lsdfportal
 - Would have been easy with new setup, ignoring current database
 - No database migration found that does not result in an inconsistent state
- Admins: Show a list of all referenced publications from timeframe extensions
- A number of Bugfixes (Permissions, Weird behaviour)
- Failed attempt to properly modularize PersonForm

Project Results

Proper Logging

Automatically Generate Documentation

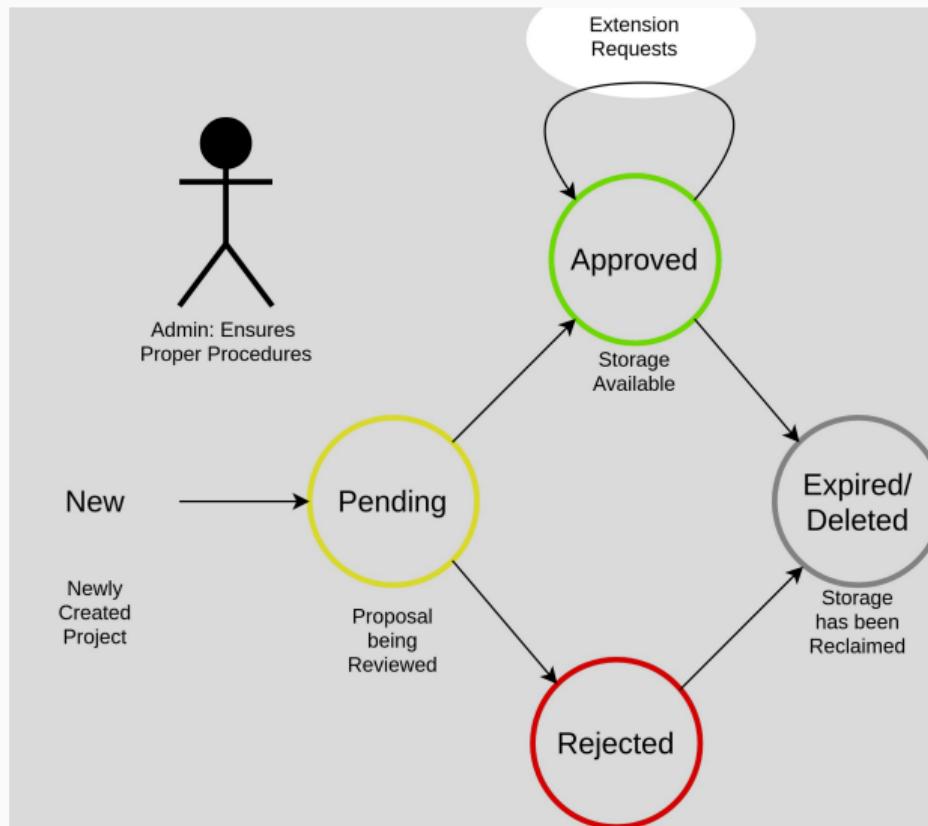
What Research is the Storage used for?

Diff CSV to DFG Schema in Database

Small Mentions

Extension Requests

Project Lifecycle: Extension Requests



Motivation

Frequent Requests:

- More Storage
- Longer Timeframe

Interaction with Admin not
standardized:

- Mail
- Comments in Project
- ...



Timeframe Extension Request View

[HOME](#) | [SITEMAP](#) | [ENGLISH](#) | [IMPRESSUM](#) | [DATENSCHUTZ](#) | [KIT](#)



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Timeframe Extension Request

Project name*

new project

Capacity*

15

Expected storage capacity in TB (1 TB = 1000 GB)

End of the project*

06.02.2023

How long you need the storage. You will be able to request an extension

Reason*

New End of Project*

2024-02-06

Extension request for one year

Publications*

Capacity Extension Request View

[HOME](#) | [SITEMAP](#) | [ENGLISH](#) | [IMPRESSUM](#) | [DATENSCHUTZ](#) | [KIT](#)



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Capacity Extension Request

Project name*

Capacity*

Expected storage capacity in TB (1 TB = 1000 GB)

End of the project*

How long you need the storage. You will be able to request an extension

Request Capacity (New Total)*

Storage capacity you would like to get in TB (1 TB = 1000 GB)

Reason*

Filled out Capacity Extension

[HOME](#) | [SITEMAP](#) | [ENGLISH](#) | [IMPRESSUM](#) | [DATENSCHUTZ](#) | [KIT](#)



SCC

Capacity Extension Request

Project name*

new project

Capacity*

15

Expected storage capacity in TB (1 TB = 1000 GB)

End of the project*

06.02.2023

How long you need the storage. You will be able to request an extension

Request Capacity (New Total)*

20

Storage capacity you would like to get in TB (1 TB = 1000 GB)

Reason*

Artifacts got bigger than expected

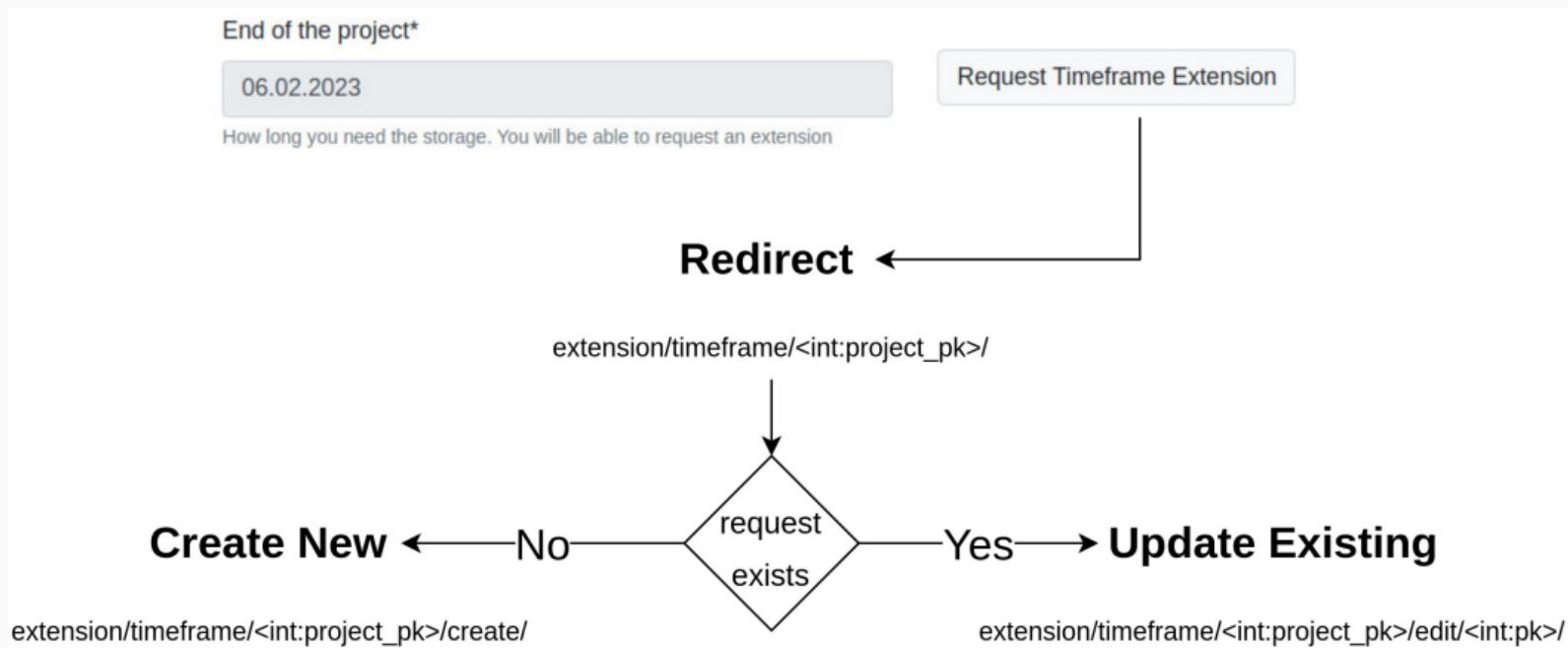
Project: Extension System Message

The screenshot shows a user interface for managing project messages. At the top right, there is a green button labeled "Save changes" with a white plus sign icon. Below this, three blue message cards are displayed, each containing a timestamp and a message:

- [6.2.2022 14:32] Changed project state to "PENDING"
- [6.2.2022 14:33] Changed project state to "APPROVED"
- [6.2.2022 14:36] Requested capacity extension to 20 TB

At the bottom right of the message area, there is another green button with a white plus sign icon, likely for composing a new message.

Routing for Timeframe Requests



Admin: Extension Request Overview

HOME | SITEMAP | ENGLISH | IMPRESSUM | DATENSCHUTZ | KIT



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Home

Open Capacity Requests

Show 10 entries

Search:

Project	Created	State	Reason	Capacity	Decision
new project	2022-02-06	PENDING	Artifacts got bigger than expected	New: 20 TB Current: 15 TB	<button>Approve</button> <button>Reject</button>
some other project	2022-02-06	PENDING	some weird reason	New: 18 TB Current: 16 TB	<button>Approve</button> <button>Reject</button>

System Message showing Extension Approval



Save changes

[6.2.2022 14:32] Changed project state to "PENDING"

[6.2.2022 14:33] Changed project state to "APPROVED"

[6.2.2022 14:36] Requested capacity extension to 20 TB

[6.2.2022 14:59] Changed status of requested capacity extension to APPROVED.



Increased Capacity from User View

Mathematics (312-01) ▾

End of the project*

06.02.2023

Request Timeframe Extension

How long you need the storage. You will be able to request an extension

Capacity*

20

Request Capacity Extension

Expected storage capacity in TB (1 TB = 1000 GB)

What is the LSDF-Portal

Introduction to Django

Project Results

Conclusion

Conclusion

- We learned about LSDF
- As well as the state of LSDF-Portal and changes
- It was a lot of fun working on these challenging tasks!
- We managed to be successful in most of them!
- The codebase is in a much better state now
- I'm excited to get it deployed soon!

Next Internship Iteration



Before that: Deployment of newly implemented features

There is a bunch of stuff left to do:

- Adapt design to current KIT corporate design
- Revisit and finish dynamic PersonForms implementation
- Login with unique identifiers (EPPN) instead of email
- Advanced User Administration and Management of Accounts
- Realizing Projects through Storage API-Access directly
- ...

Sources i

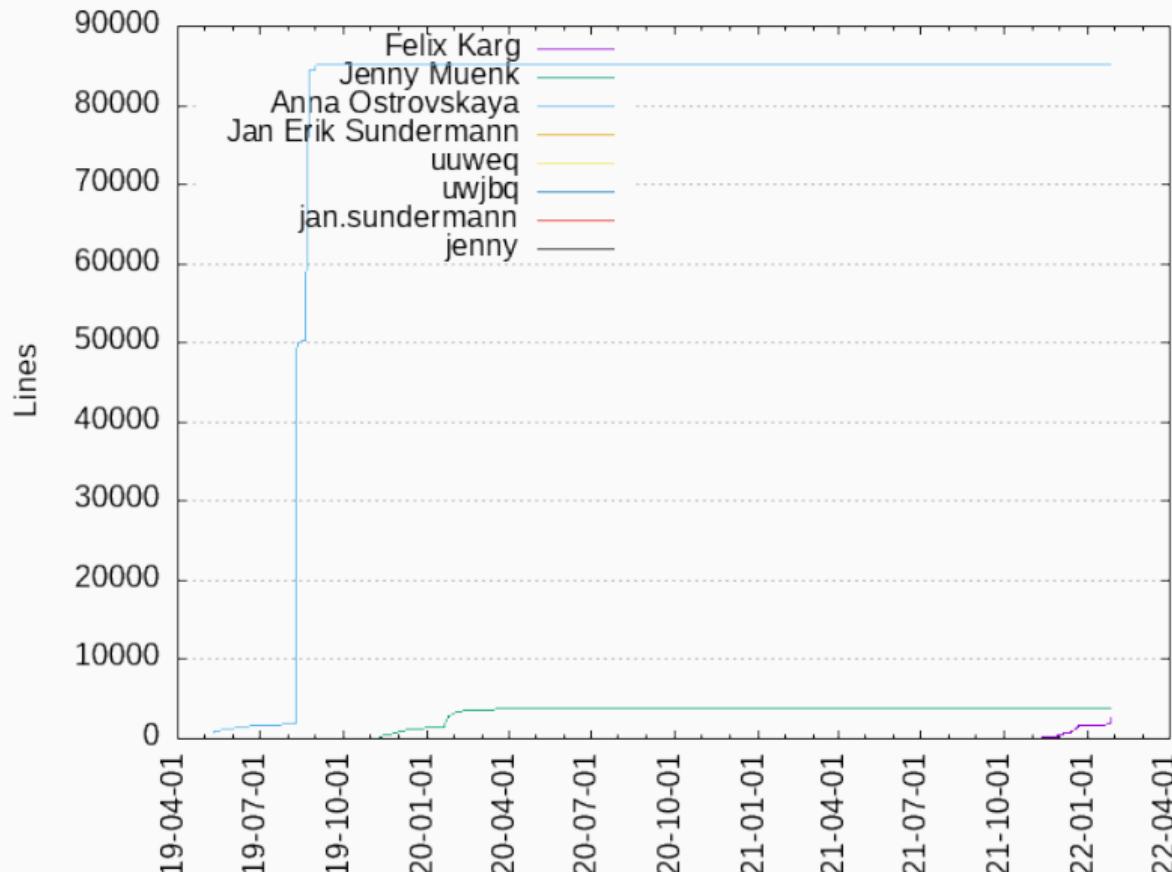
-  "Devopedia, "django"." <https://devopedia.org/django>, 2020.
accessed 2022-02-07.

End

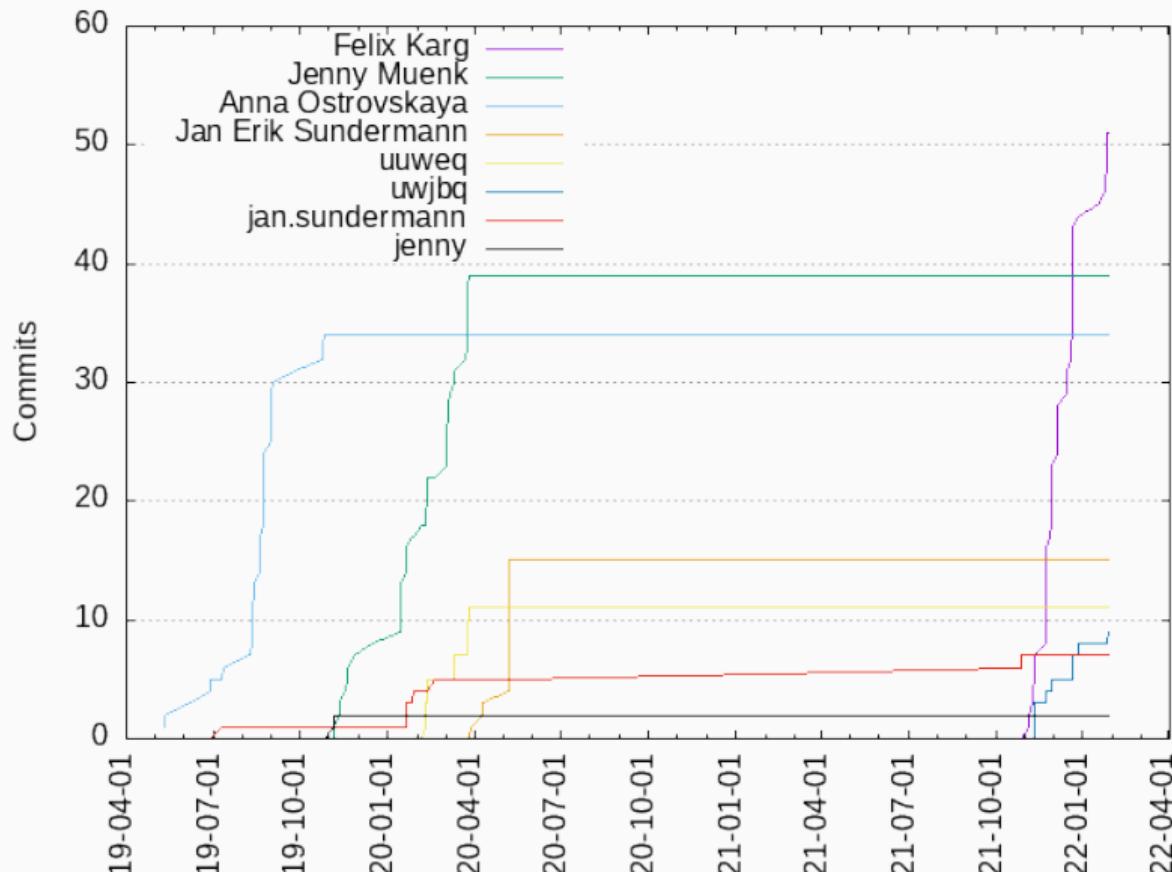
Statistics

More Screenshots

LOC by Author



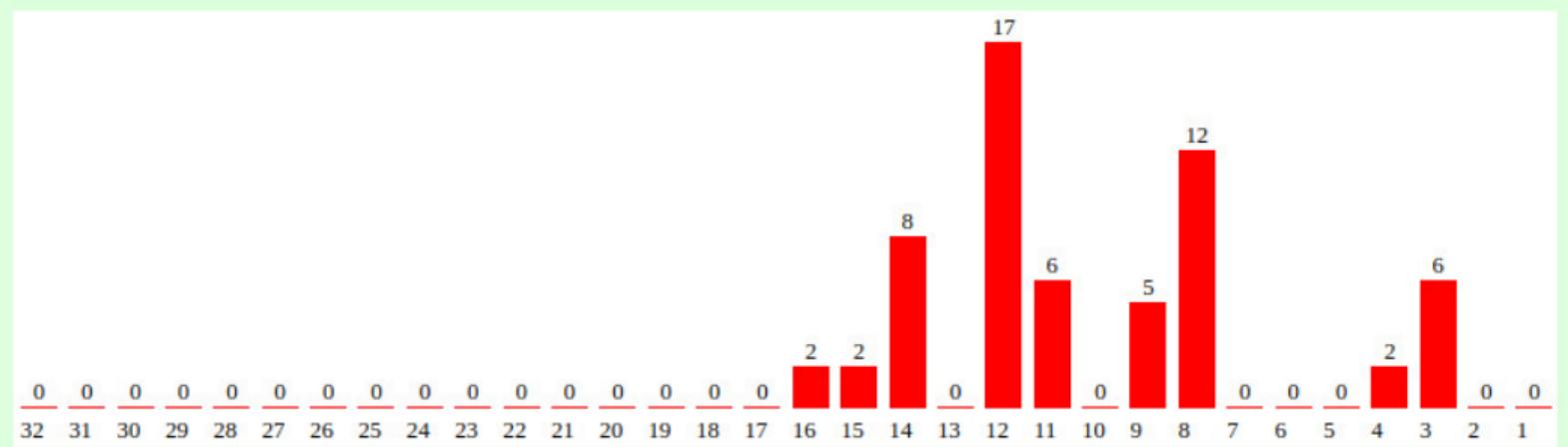
Commits by Author



Recent Activity (Commits by Week)

Weekly activity

Last 32 weeks



LOC stats: Before

Language	Files	Lines	Code	Comments	Blanks
CSS	28	19144	17235	284	1625
JavaScript	27	63499	43096	13725	6678
Python	34	1812	1510	56	246
SVG	14	14	14	0	0
HTML	10	938	838	30	70
— CSS	1	312	282	28	2
— JavaScript	5	155	126	13	16
Total	122	86008	62693	14627	8688

(The numbers don't quite add up, because I omitted e.g. Configs, Markdown, ...)

LOC stats: After

Language	Files	Lines	Code	Comments	Blanks
CSS	28	19162	17248	284	1630
JavaScript	27	63499	43096	13725	6678
Python	48	3078	2485	160	434
SVG	14	14	14	0	0
HTML	15	1231	1107	39	85
— CSS	1	312	282	28	2
— JavaScript	7	244	202	21	21
Total	134	87055	63960	14245	8850

(The numbers don't quite add up, because I omitted e.g. Configs, Markdown, ...)

LOC stats: Diff

Language	Files	Lines	Code	Comments	Blanks
CSS	0	+18	+13	0	+5
JavaScript	0	0	0	0	0
Python	+14	+1266	+975	+104	+188
SVG	0	0	0	0	0
HTML	+5	+293	+269	+9	+15
— CSS	0	0	0	0	0
— JavaScript	+2	+89	+76	+8	+5
Total	+12	+1047	+1267	+382	+162

(The numbers don't quite add up, because I omitted e.g. Configs, Markdown, ...)

Statistics

More Screenshots

More Screenshots

Project Approval

Requesting More Storage

Attempt to properly modularize PersonForm

Project Pending

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Storage projects



Show entries

Search:

Project Name	Institute	Capacity	Last changes	
new project		Requested: 15 TB	6.2.2022 14:32	

Showing 1 to 1 of 1 entries

Previous **1** Next

State Change Message

Want to add more service accounts? Contact your ITB to request access.

Group permission*

No permissions



Extended group permissions (ACLs)



Save changes

[6.2.2022 14:32] Changed project state to "PENDING"



Project Approved

[HOME](#) | [SITEMAP](#) | [ENGLISH](#) | [IMPRESSUM](#) | [DATENSCHUTZ](#) | [KIT](#)



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Storage projects



Show 10 entries

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Showing 1 to 1 of 1 entries

[Previous](#) [1](#) [Next](#)

State Change Message

Group permission*

No permissions

Extended group permissions (ACLs)



Save changes

[6.2.2022 14:32] Changed project state to "PENDING"

[6.2.2022 14:33] Changed project state to "APPROVED"



More Screenshots

Project Approval

Requesting More Storage

Attempt to properly modularize PersonForm

Extension Requests: The Project Needs to be Approved

DFG REVIEW BOARD

Mathematics (312) ▾

DFG Subject Area*

Mathematics (312-01) ▾

End of the project*

06.02.2023

Request Timeframe Extension

How long you need the storage. You will be able to request an extension

Capacity*

15

Request Capacity Extension

Expected storage capacity in TB (1 TB = 1000 GB)

Directory name*

projectdirectory

What should be the name of the project directory? We recommend using a short project acronym. Allowed characters are "a-z 0-9 _ -"

Timeframe Extension Request View

[HOME](#) | [SITEMAP](#) | [ENGLISH](#) | [IMPRESSUM](#) | [DATENSCHUTZ](#) | [KIT](#)



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Timeframe Extension Request

Project name*

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How long you need the storage. You will be able to request an extension

Extension request for one year

Reason*

Publications*

Capacity Extension Request View

[HOME](#) | [SITEMAP](#) | [ENGLISH](#) | [IMPRESSUM](#) | [DATENSCHUTZ](#) | [KIT](#)



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Steinbuch Centre for Computing (SCC)



Capacity Extension Request

Project name*

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Storage capacity you would like to get in TB (1 TB = 1000 GB)

Reason*

Filled out Capacity Extension

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Karlsruher Institut für Technologie



Steinbuch Centre for Computing (SCC)



Capacity Extension Request

Project name*

new project

Capacity*

15

Expected storage capacity in TB (1 TB = 1000 GB)

End of the project*

06.02.2023

Request Capacity (New Total)*

20

Storage capacity you would like to get in TB (1 TB = 1000 GB)

Reason*

Artifacts got bigger than expected

Extension System Message



Save changes

[6.2.2022 14:32] Changed project state to "PENDING"

[6.2.2022 14:33] Changed project state to "APPROVED"

[6.2.2022 14:36] Requested capacity extension to 20 TB



Projects Admin View

Storage projects



Show 10 entries

Search:

Project Name	Institute	Capacity	Last changes
name		Requested: 66 TB	11.1.2022 00:00
new project		Requested: 15 TB	6.2.2022 14:33
sghg		Requested: 10000000000000000000 TB	6.2.2022 14:37
some other project		Requested: 16 TB	23.1.2022 02:43

Extension Request Overview

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Home

Open Capacity Requests

Show 10 entries

Search:

Project	Created	State	Reason	Capacity	Decision
new project	2022-02-06	PENDING	Artifacts got bigger than expected	New: 20 TB Current: 15 TB	<button>Approve</button> <button>Reject</button>
some other project	2022-02-06	PENDING	some weird reason	New: 18 TB Current: 16 TB	<button>Approve</button> <button>Reject</button>

Approving Request

Closed Capacity Requests

Show 10 entries

Search:

Project	Created	State	Reason	Capacity	Decision
new project	2022-02-06	APPROVED	Artifacts got bigger than expected	New: 20 TB Current: 20 TB	<button>Reopen</button>

System Message showing Extension Approval



Save changes

[6.2.2022 14:32] Changed project state to "PENDING"

[6.2.2022 14:33] Changed project state to "APPROVED"

[6.2.2022 14:36] Requested capacity extension to 20 TB

[6.2.2022 14:59] Changed status of requested capacity extension to APPROVED.



Increased Capacity from User View

Mathematics (312-01)



End of the project*

06.02.2023

Request Timeframe Extension

How long you need the storage. You will be able to request an extension

Capacity*

20

Request Capacity Extension

Expected storage capacity in TB (1 TB = 1000 GB)

More Screenshots

Project Approval

Requesting More Storage

Attempt to properly modularize PersonForm

Motivation for PersonForm abstraction

- Boilerplate: strong indicator for bad code quality!
- Redundant!
- Prone to Bugs!
- Distracts from meaning!
- Not Flexible!
- Hard to modify!

```
1  class OrderSimpleForm(ModelForm):  
2      """ Form for Project requests: <host>/new/ """  
3      p1_email = EmailField(...)  
4      p1_institute = CharField(...)  
5      p1_organization = CharField(...)  
6      p1_firstname = CharField(...)  
7      p1_lastname = CharField(...)  
8      p1_roles = MultipleChoiceField(...)  
9  
10     p2_email = EmailField(...)  
11     p2_institute = CharField(...)  
12     p2_organization = CharField(...)  
13     p2_firstname = CharField(...)  
14     p2_lastname = CharField(...)  
15     p2_roles = MultipleChoiceField(...)  
16  
17     p3_email = EmailField(...)  
18     p3_institute = CharField(...)  
19     p3_organization = CharField(...)  
20     p3_firstname = CharField(...)  
21     p3_lastname = CharField(...)  
22     p3_roles = MultipleChoiceField(...)  
23     ...
```

Intermediate Results

```
1  class PersonForm(ModelForm):
2      roles = MultipleChoiceField(
3          label="Roles", required=False,
4          choices=(
5              ("ROLE_HEAD", "Head of the project"),
6              ("ROLE_TECH", "Technical contact"),
7          ))
8  class Meta:
9      model = Person
10     fields = [ "first_name", "last_name", "email",
11                 "institute", "roles", "organization",
12             ]
13
14 PersonFormSet = formset_factory(PersonForm)
15
16 class OrderSimpleForm(ModelForm):
17     """ Form for Project requests: <host>/new/ """
18     owner = PersonForm() # main contact responsible
19     additional_contacts = PersonFormSet(data={
20         'form-TOTAL_FORMS': '0', # empty form has zero total forms
21         'form-INITIAL_FORMS': '0', # initially no form is shown
22     })
```

- Abstraction to one dedicated PersonForm
- PersonFormSet can have arbitrarily many Persons (was only five)
- Simplifies implementation in View
- Difficult to propagate ValidationErrors properly
- Would have deleted about 300 lines of boilerplate

Reasons for Failure

- Nesting of Forms is **not** supported (owner within OrderSimpleForm)
- Particularly with the many assumptions and automated parts of ModelForms
- Manually register fields for ValidationErrors
- Manually put in values for Validation (from PersonFormSet)
- Manually take values out to save new Models

Nothing impossible, but requires a lot of intricate details to get right. We decided to instead implement something else.