

QuantLet

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All You Need is...



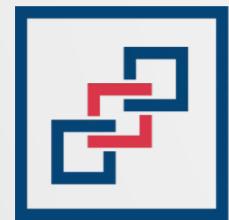
theIDA.net



Quantinar.com



Quantlet.com



Blockchain-Research-Center.com



The path to visibility, transparency and glory

- Quantlets have to be submitted to a repository in the **Quantlet Github Organization**
- Comply to the **styleguide of Quantlets!**
- Contribute Quantlets as member or non-member

Become Q'able!



Outline

1. Styleguide for Quantlets

1.1. Structure of Quantlets Folder

1.2. Metainfo.txt File

2. Submission Guide for Members

3. Submission Guide for Non Members



Structure of Quantlet Folder 1

- Each Quantlet Q is a program that needs to be accompanied by a **Metainfo.txt file**, both files need to be in the same folder.
- Per folder only one Q. If you have multiple Qs structure them in GitHub like this:
 1. \RepositoryName\...\FolderName1\QuantletName1
 2. \RepositoryName\...\FolderName2\QuantletName2
- Give each Q a meaningful name:
 3. The name should be **a unique name** which is abbreviation of the project / book / class.
- Each Q shall be executable, hence provide the input data! If data are classified or too big, provide synthetic data of same structure!
- Save output pictures in the same folder as png or jpg.



Structure of Quantlet Folder 2

- If you have a project which includes multiple major steps, split them into multiple Qs. For example a Q for each of the following steps:
 1. Data collection / scraping / mining
 2. Data preprocessing
 3. Data exploration
 4. Data visualisation
- The README file is created automatically (at midnight) out of the
 - 5. Metainfo file
 - 6. Pictures in the same folder (in alphabetical order)
- Existing **README** files are **not overwritten**, if you make changes in the Metainfo file or the Quantlet, **please delete the README!!!**



Metainfo.txt File 1

- **Required** Meta-Information:

- ▶ **Name of Quantlet:** *Same name as the Quantlet without the program ending (.r,.py,.m,...).* Select a meaningful name!
- ▶ **Published in:** Book / Paper/ Class / other place of publication
- ▶ **Description:** Describe with at least 10 words what this Quantlet does, which techniques are used, what is the applied use case, for what purpose etc.
- ▶ **Keywords:** At least 5 keywords.
- ▶ **Author:** Name of the authors



Metainfo.txt File 2

- **Optional** Meta-Information:

- ▶ **See also**: mention related Quantlets, e.g. Quantlets of same project
- ▶ **Submitted**: state the name and the time of the original submission
- ▶ **Datafile**: All datafiles used by your code need to be listed here
- ▶ **Input**: Should contain some new info, which is not written in other metainfo fields
- ▶ **Output**: Should contain some new info, which is not written in other metainfo fields
- ▶ **Example**: Should contain a list of generated plots and descriptions, which are not written in other metainfo fields



Outline

1. Styleguide for Quantlets

2. Submission Guide for Members

2.1. Member in GitHub Quantlet organization

2.2. Submission options:

2.2.1. Submission to existing repository

2.2.2. Fork repository from your account to Quantlet

2.2.3. Create a new repository

3. Submission Guide for Non Members



Member in GitHub Quantlet organization

- Check if you are member in the Quantlet organization (login to GitHub first): <https://github.com/orgs/QuantLet/people>
- If you are not, the owner (Prof. Härdle) or the Quantlet team (gamanstefan18@stud.ase.ro) can invite you.



Submission to existing repository

- There are 2 ways to submit to existing repositories:
- Directly:
 - ▶ You need write privileges (by default only the repository admin has such privileges)
 - ▶ The repository admin can grant write privileges
 - ▶ Alter the repository as if it was your own
- Via pull request:
 - ▶ Step 1: Fork the repository
 - ▶ Step 2: Commit changes
 - ▶ Step 3: Create a pull request
 - ▶ The steps will be explained in the following pages



Step 1: Fork repository

A screenshot of a GitHub repository page for 'Proper-Scoring-Rules'. The page shows a list of files and their commit history. A large red arrow points to the 'Fork' button in the top right corner of the header.

The repository has 1 branch and 0 tags. The commit history shows the following changes:

- StefanGam Create README.md in folder
- 1.CNN cifar classifier Create README.md in folder 3 weeks ago
- 2.Scoring rules characterization Create README.md in folder last week
- 3. Locality of scoring rules Create README.md in folder last week
- .gitignore add content 3 weeks ago
- Metainfo.txt add gitignore 3 weeks ago
- README.md Create README.md at root level 3 weeks ago

The repository has 8 commits in total. The 'About' section indicates no description, website, or topics provided. It also lists activity, custom properties, and reporting options. The 'Releases' section shows no releases published, and the 'Packages' section shows no packages published. The 'Contributors' section lists StefanGam and ochaffard.



Step 2: Commit changes

The screenshot shows a GitHub repository page for 'Proper-Scoring-Rules' (Public). A red arrow points to the 'Open pull request' button, which is highlighted with a green box. The page displays the following information:

- Branch:** master (1 Branch, 0 Tags)
- Status:** This branch is 1 commit ahead of QuantLet/Proper-Scoring-Rules:master.
- Contributor:** HorvathMatus
- Commits:** 9 Commits (now, last week)
- Files:** 1.CNN cifar classifier, 2.Scoring rules char, 3. Locality of scoring rules, .gitignore, Metainfo.txt, README.md
- Actions:** Open pull request, Create README.md in folder, add content, add gitignore, Create README.md at root level
- Activity:** 3 weeks ago
- Statistics:** 0 stars, 0 forks, 0 watching
- About:** No description, website, or topics provided.
- Releases:** No releases published. Create a new release.
- Packages:** No packages published. Publish your first package.
- Languages:** Jupyter Notebook 100.0%



Step 3: Create pull request 1

The screenshot shows the GitHub interface for creating a pull request. At the top, the repository 'QuantLet / Proper-Scoring-Rules' is selected. The 'Code' tab is active, showing navigation links for Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. A search bar at the top right contains the placeholder 'Type / to search'. Below the navigation, a section titled 'Open a pull request' instructs users to 'Create a new pull request by comparing changes across two branches. If you need to, you can also compare across forks. [Learn more about diff comparisons here.](#)'

The main form for creating a pull request includes fields for 'base repository' (QuantLet/Proper-Scoring-Rul...), 'base' (master), 'head repository' (HorvathMatus/Proper-Scorin...), and 'compare' (master). A title field contains 'Update cifar.ipynb'. A rich text editor allows adding a description, with a note that Markdown is supported. A file upload area says 'Paste, drop, or click to add files'. At the bottom, there's a checkbox for 'Allow edits by maintainers' and a prominent green 'Create pull request' button. A large red arrow points to this green button. To the right of the form, there are sections for 'Reviewers' (No reviews), 'Assignees' (No one—assign yourself), 'Labels' (None yet), 'Projects' (None yet), 'Milestone' (No milestone), and 'Development' (Use [Closing keywords](#) in the description to automatically close issues). A note at the bottom reminds users to follow [GitHub Community Guidelines](#).



Step 3: Create pull request 2

- ☐ The pull request is sent to the repository admin who accepts or denies the commit.
- ☐ If you want to change something after an accepted pull request, commit new changes to your forked repository and create a new pull request.

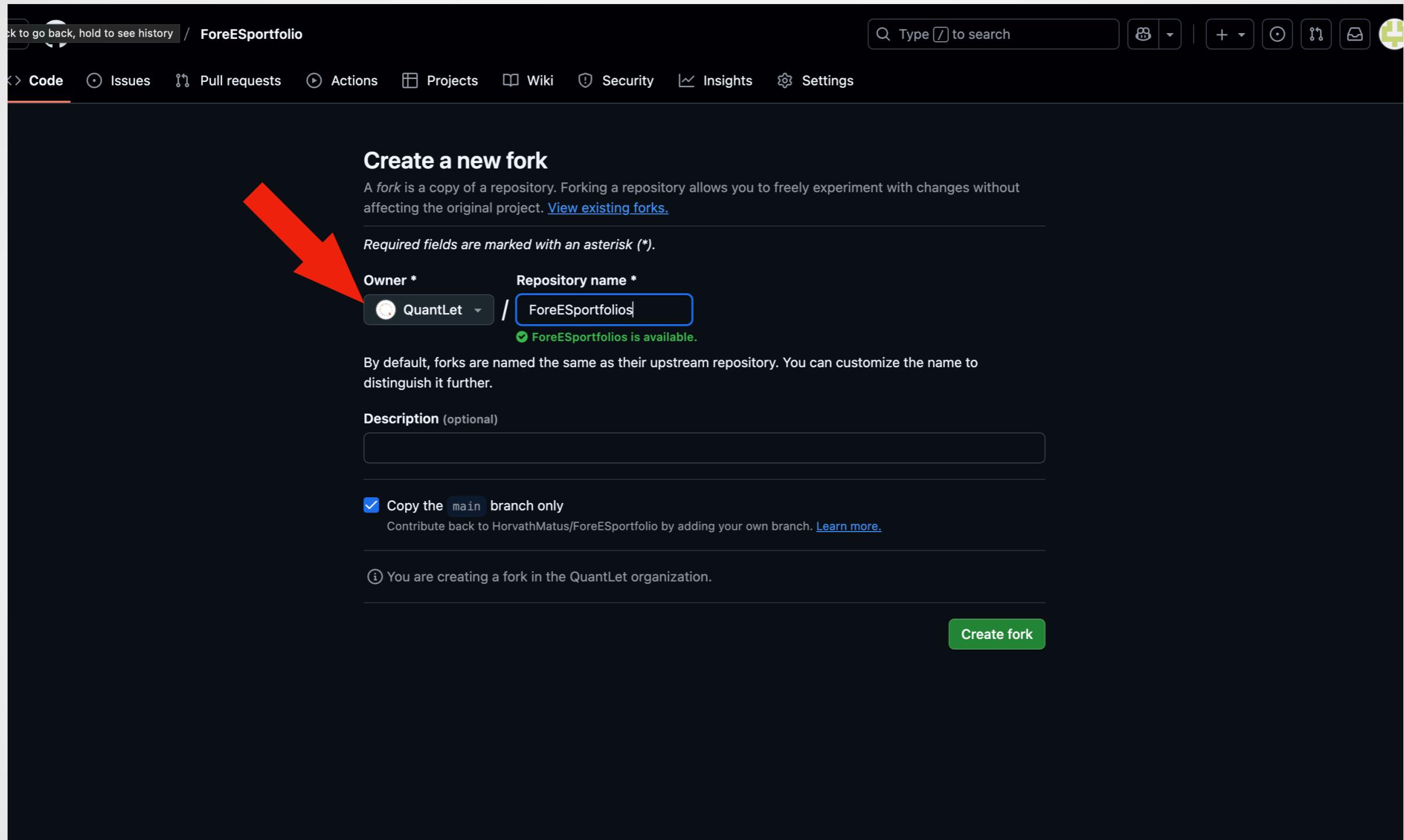


Fork repository from your account to Quantlet 1

A screenshot of a GitHub repository page for 'ForeESportfolio'. The page shows a list of files uploaded by 'HorvathMatus'. On the right side, there is an 'About' section with basic repository statistics: 1 branch, 0 tags, 3 commits, 9 months ago, 5 days ago, and 5 days ago. Below this, there is a 'Releases' section stating 'No releases published' and a 'Create a new release' link. Under 'Packages', it says 'No packages published' and 'Publish your first package'. In the 'Languages' section, there is a single bar for R at 100.0%. A large red arrow points to the 'Fork' button in the top right corner of the main repository area.



Fork repository from your account to Quantlet 2



A screenshot of a GitHub repository page titled "ForeESportfolios". The top navigation bar includes links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. A search bar and various icons are also present. A large red arrow points to the "Owner" dropdown menu, which is set to "QuantLet". The "Repository name" field contains "ForeESportfolios", with a note below it stating "ForeESportfolios is available." Below these fields are sections for "Description (optional)" and "Copy the main branch only" (which is checked). A note indicates that the fork is being created in the QuantLet organization. At the bottom right is a green "Create fork" button.



Responsibilities

- When you fork a repository into the Quantlet organisation, you are its creator and thus automatically admin!
- This brings some responsibilities:
 - ▶ Make sure every submitted Quantlet contains a Metainfo file
 - ▶ Accept / deny pull requests by others
 - ▶ Manage access privileges



Create new repository 1

The screenshot shows the QuantLet platform interface. At the top, there is a navigation bar with links for Overview, Repositories (521), Projects (2), Packages, Teams (4), People (180), and a search bar. Below the navigation bar, a user profile for 'LvB' is displayed, including a profile picture, the name 'LvB', the description 'QuantNet Tokens for science', 155 followers, the location 'Humboldt-Universität zu Berlin', and the website 'http://www.quantlet.com'. There is also a 'Unfollow' button.

In the center, under the heading 'Pinned', two repositories are listed:

- Styleguide-and-FAQ** (Public) - Includes the Styleguide and Frequently Asked Questions (FAQ). It has 3 stars and 42 forks.
- quantinar_nft** (Public) - Issue NFTs on your Quantlets on www.quantlet.com. It is written in Python and has 1 star. A red arrow points from the text 'Issue NFTs on your Quantlets on www.quantlet.com' to this repository entry.

Below the pinned repositories, there is a section for 'Repositories' with a search bar and filters for Type, Language, Sort, and a green 'New' button. Four repositories are listed:

- LPA_AR** (Public) - Jupyter Notebook, 0 stars, 1 fork, 0 issues, 0 pull requests, updated 5 hours ago.
- SHAP_AR** (Public) - Jupyter Notebook, 0 stars, 0 forks, 0 issues, 0 pull requests, updated 5 hours ago.
- AR_sim_p** (Public) - Python, 0 stars, 0 forks, 0 issues, 0 pull requests, updated 8 hours ago.
- ATSSB-Applied-Time-Series-Solutions-Book** (Public) - Applied Time Series Solutions Book, 0 stars, 0 forks, 0 issues, 0 pull requests, updated 8 hours ago.

On the right side of the interface, there are sections for 'View as: Public', 'People' (with a grid of user icons), 'Top languages' (R, Jupyter Notebook, Python, MATLAB, HTML), and 'Most used topics' (cryptocurrency, causal-inference, ethereum, ethereum-contract, finance).



Create new repository 2

The screenshot shows the QuantLet platform interface with a dark theme. At the top, there is a navigation bar with icons for Overview, Repositories (which is the active tab), Projects, Packages, Teams, and People. A search bar is located at the top right, followed by several small icons. The main content area is titled "Create a new repository". It includes instructions: "Repositories contain a project's files and version history. Have a project elsewhere? [Import a repository.](#)" and "Required fields are marked with an asterisk (*)." The form is divided into two sections: "General" (step 1) and "Configuration" (step 2). In the "General" section, the "Owner" is set to "QuantLet" and the "Repository name" field contains a placeholder "/". Below it, a note says "Great repository names are short and memorable. How about `bug-free-potato`?" In the "Description" section, there is a text input field with "0 / 350 characters". In the "Configuration" section, the "Choose visibility" dropdown is set to "Private". Under "Add README", the switch is set to "Off". Under "Add .gitignore", the dropdown is set to "No .gitignore". Under "Add license", the dropdown is set to "No license". At the bottom right of the form is a green "Create repository" button.



Responsibilities

- When you create a repository in the Quantlet organisation, you are automatically its admin!
- This brings some responsibilities, see responsibilities in [page ‘Responsibilities’](#) in the [2. Fork repositories to Quantlet](#).



Outline

1. Styleguide for Quantlets
2. Submission Guide for Members
- 3. Submission Guide for Non Members**
 - 3.1. Submission to an existing repository via pull request
 - 3.2. Fork of entire repository by a member of the Quantlet Organization



Submission to existing repository via pull request

- Submitting a pull request
 - ▶ Step 1: Fork the target repository
 - ▶ Step 2: Commit changes
 - ▶ Step 3: Create a pull request
- The steps are same as for a member, see 2.1.1



Fork by a member of the Quantlet Organization 1

- Members of the Quantlet organisation can fork public repositories into the Quantlet organisation.
- Since only entire repositories can be forked, it is not possible to fork parts of repositories, e.g. Quantlets.
- If your Quantlet is part of project, lecture, exercise etc. ask [Quantlet Team](#) to create a repository and use [Submission to existing repository via pull request](#) method.



Fork by a member of the Quantlet Organization 2

- Steps:
 - ▶ Create in your own Github account a repository and commit your program to it.
 - ▶ Make sure that the repository and Quantlet names are not yet used in the Quantlet organisation.
 - ▶ Ask your Quantlet contact to fork your repository into it. If you do not have one please contact the [Quantlet Team](#).
 - ▶ All following changes can be submitted by the Submission to existing repository via pull request method.



References

Borke L, Härdle WK (2018) Q3-D3-LSA, Handbook of Big data Analytics, (Härdle, Lu, Shen eds), Springer Verlag, ISBN 978-3-319-18284-1, DOI: 10.1007/978-3-319-18284-1



Special Cases

- R Shiny Apps:

1. Program UI and Server in one R Script, e.g.

```
library("shiny")
ui      = shinyUI(...)
server = shinyServer(function(input, output)){...}
app    = shinyApp(ui, server)
```

2. See for example SVCJOptionApp.

- If you have a special case that is not listed below ask your supervisor and if necessary contact the [Quantlet Team](#).





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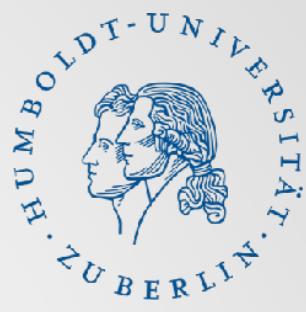
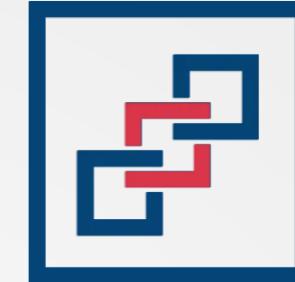
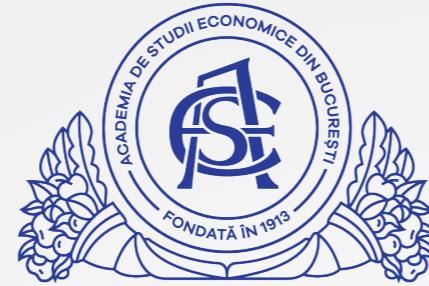
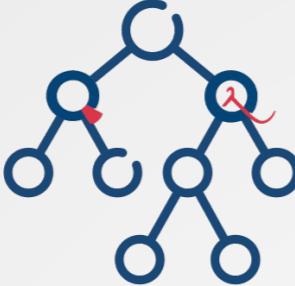
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