

Building Reproducibility and Efficiency into Document Collaboration Workflows using Jupyter Notebooks and Overleaf Collaboration Templates

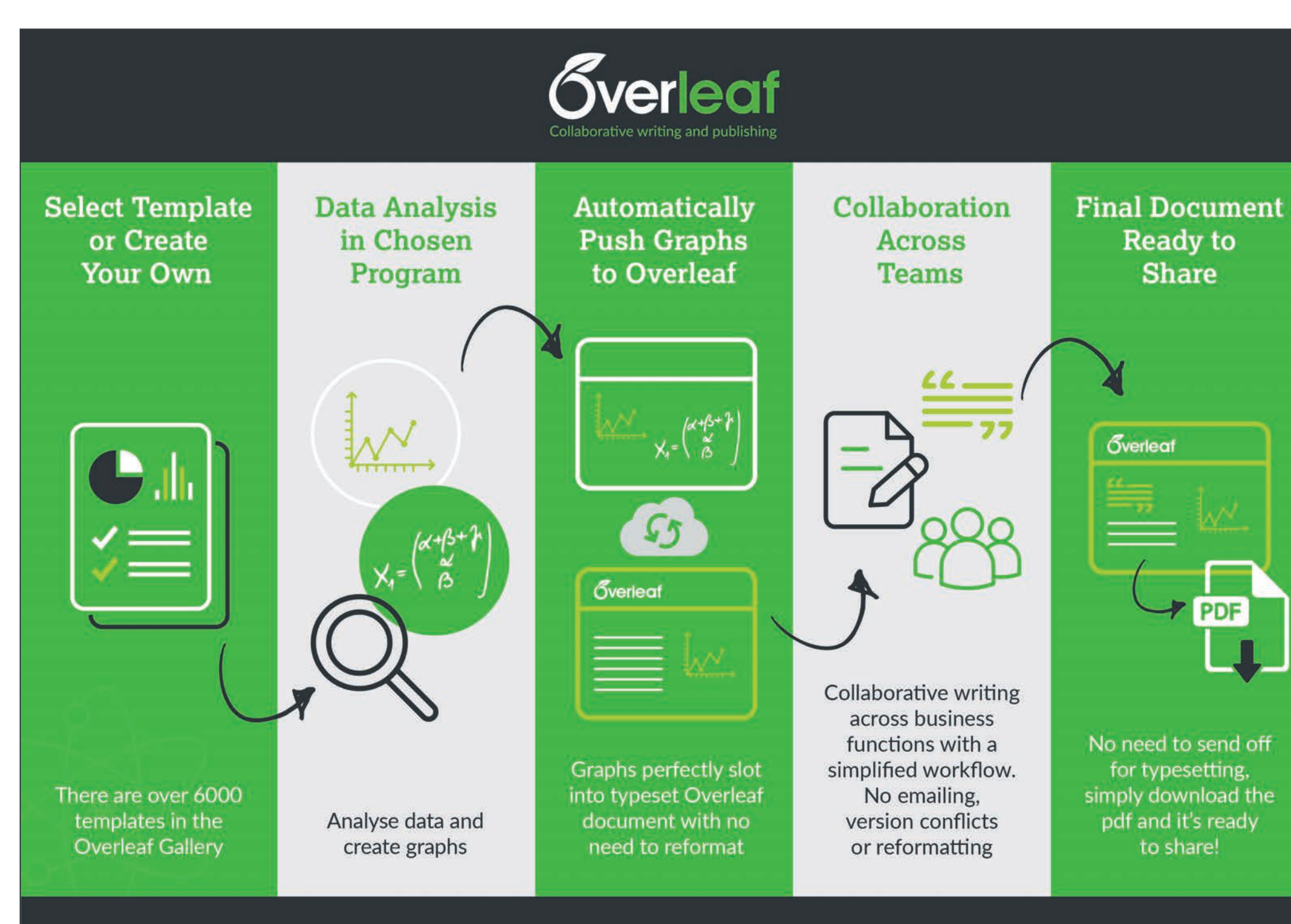
Introduction

Overleaf offers authors an easy way to write and collaborate on their documents through a user-friendly interface that automatically typesets their work, in real-time, in the browser. It supports team collaboration by providing an innovative writing tool that simplifies the writing process, expands and facilitates collaboration ability and streamlines the workflow process. For teams who frequently write data-heavy documents, a lack of integration between data science tools can be frustrating. With Overleaf, updates to data visualisations can be synced from data analysis tools such as Jupyter Notebooks directly into reports and documents written on Overleaf. In addition, teams can add and remove authors at any time – giving them access to ‘read-only’ or ‘read-and-write’ files; and authors can easily follow the correct report format and guidelines by using a custom Overleaf report template. Plus, by having both Rich Text and LaTeX writing modes available in Overleaf, anyone can easily join the collaboration - whether they’re familiar with writing in LaTeX or not.

This poster will walk you through this Document Collaboration Workflow as well as the key benefits of using this for data science teams and wider teams at your organisation.

Key Benefits of Workflow

- Seamless, automated integration between Overleaf and Jupyter Notebooks to produce data, graphs, and the written reports
- Real-time collaboration between data analysis, writing and marketing teams
- Reduced reliance on external agencies to produce professionally typeset documentation - saving time and money
- Ability to make document changes right up to print or share deadlines



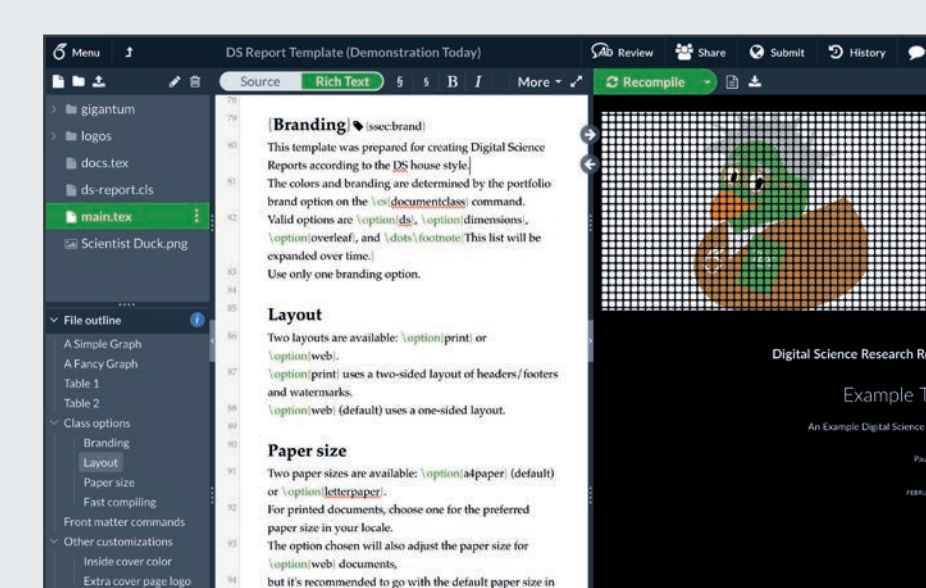
The Streamlined Workflow

The first part of the Document Collaboration Workflow is to select or create a template on Overleaf. There are over 6,000 templates in the Overleaf template gallery to choose from or you can create your own if you have a very specific style and format you want to use. By developing your own custom template (or on some Overleaf templates), you will be able to take advantage of powerful LaTeX and template features such as:

- Simple data automation throughout the document via LaTeX code (ability to change text/data in one place and have it automatically update throughout the document).
- Ability to amend the report structure and format by changing the selected LaTeX package
- Ability to use the same core template across multiple departments, teams and projects resulting in minimal time required to quickly and consistently develop a beautifully typeset document.
- Teams can focus on research and writing rather than the layout and format.

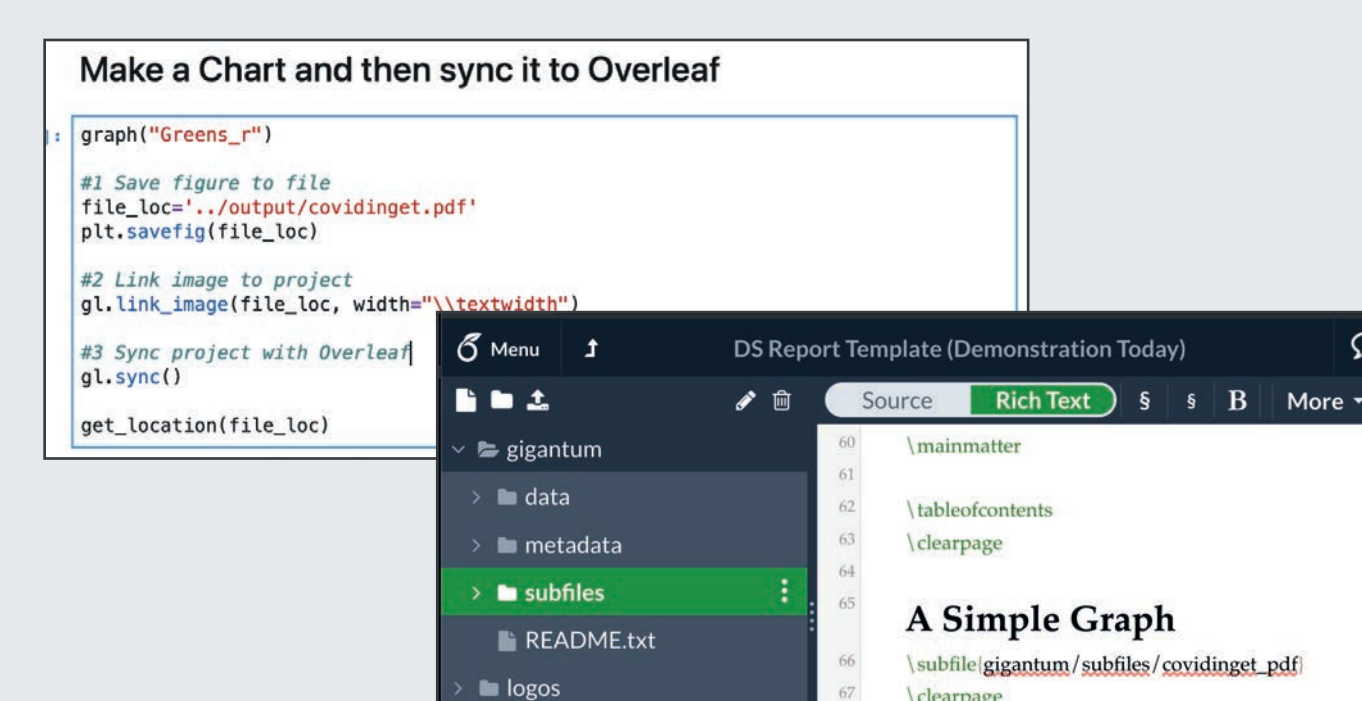
Example

1. To get started first select an Overleaf template or create your own

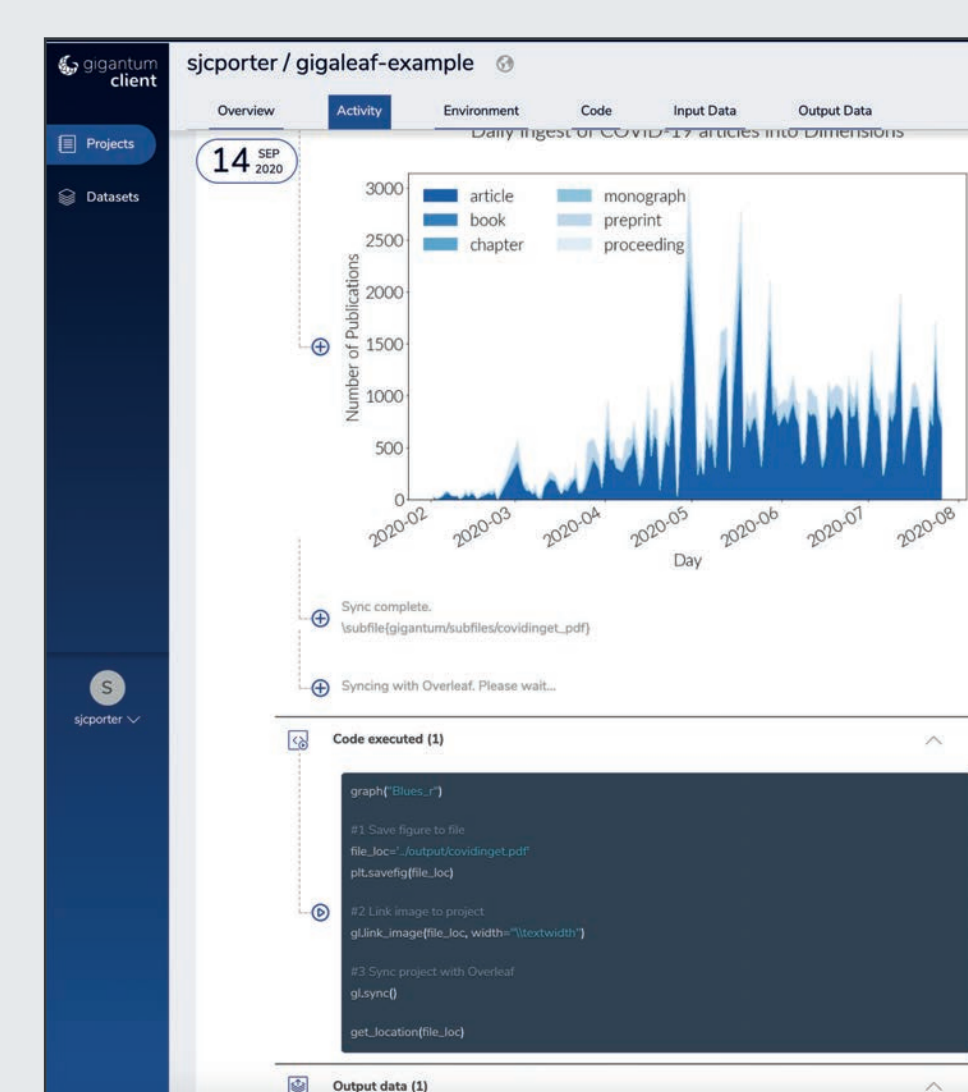


2. Select a chart from your Jupyter Notebooks to sync with a specific section of your Overleaf template, you can sync the chart with your Overleaf document using the Git Bridge. Alternatively, through Gigantum you can use their Python library (Gigaleaf), which makes Overleaf integration very simple

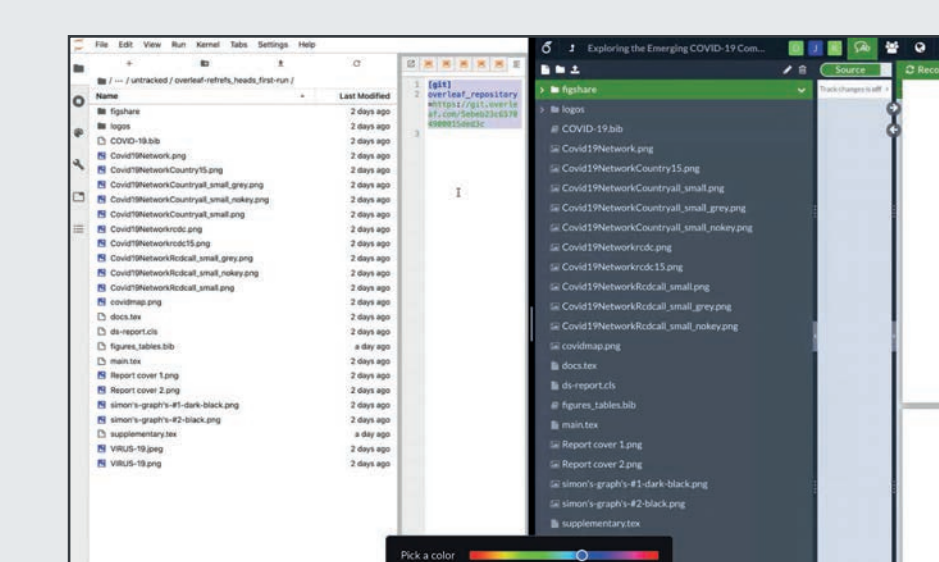
- Generate your image (or table)
- Give Gigaleaf the location of your file (along with basic formatting)
- Sync to Overleaf. You can now include your image as a subfile in your Overleaf document



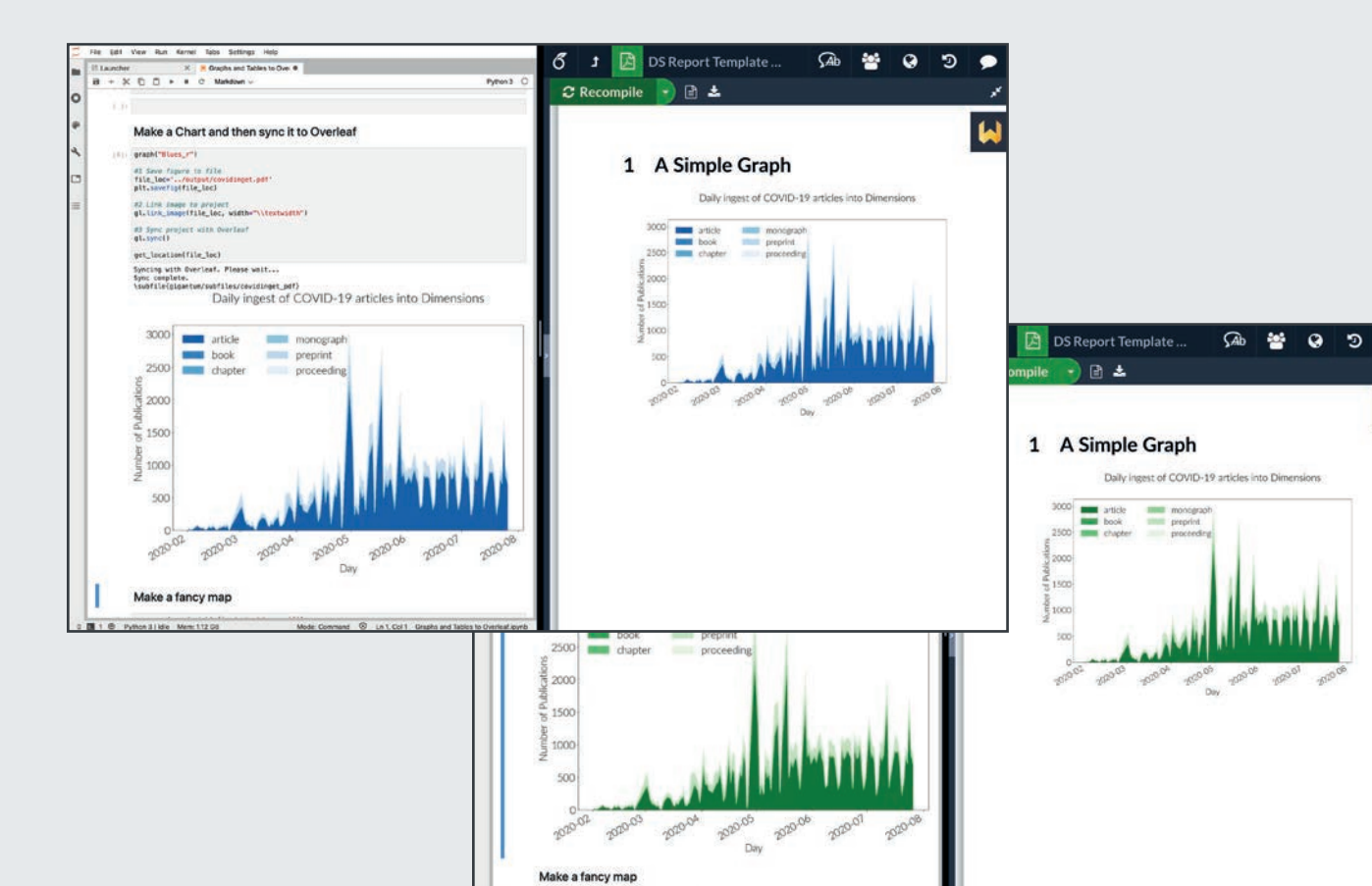
3. As well as integrating with Overleaf, Gigaleaf also links files back to the correct notebook version



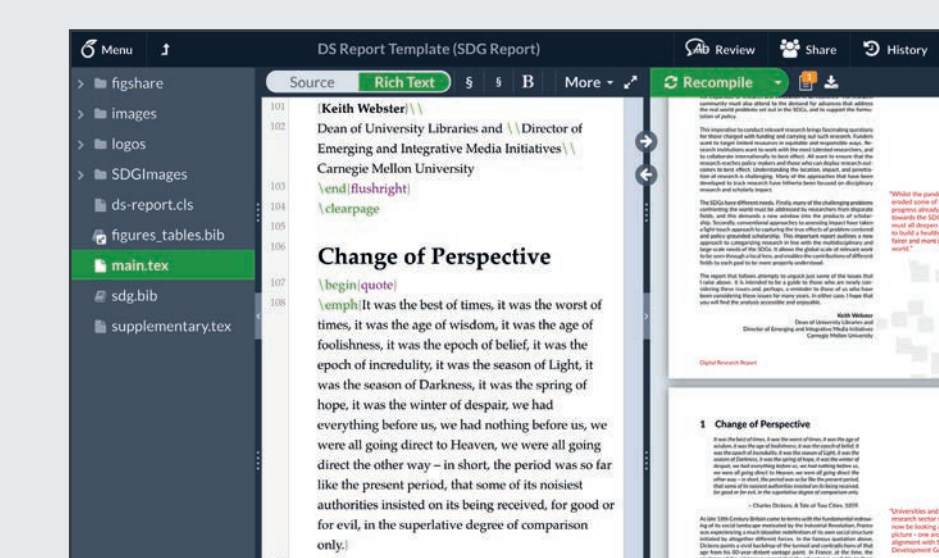
4. After the command has been run, when viewing the Overleaf document and Jupyter Notebooks side by side you can see that the files are mirrored



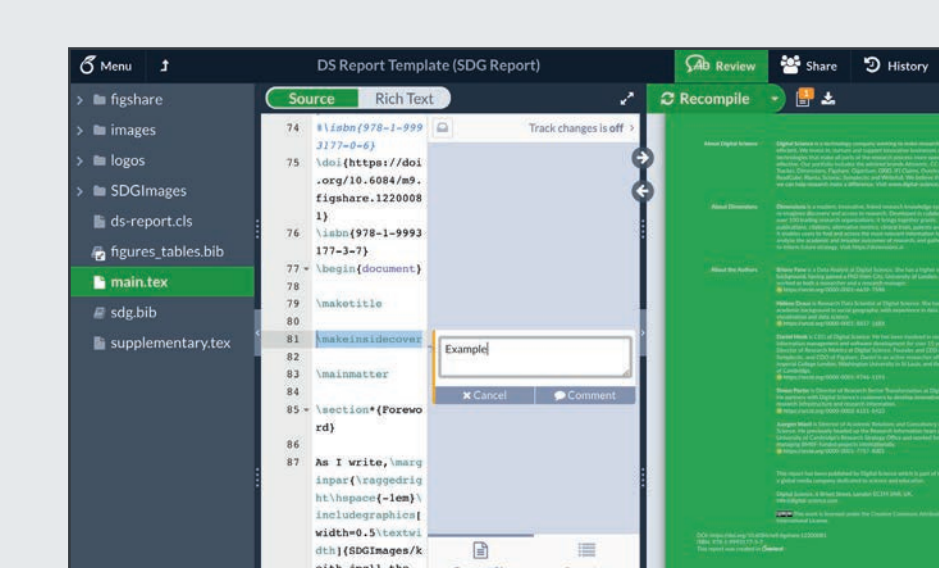
5. Once mirrored you can easily change a graph in Jupyter then instantly see the update in Overleaf simply by recompiling the document



6. Overleaf has the added benefit of having Rich Text Mode. Team members without LaTeX experience can easily use this to make their edits and with auto-compilation can instantly see how their changes will look in the final report



7. Overleaf also has other helpful collaboration features such as comments, chat and track changes



Key Benefits for Data Science Teams

1 How the Git Bridge works

- Much like a webpage, an Overleaf doc is a set of coded files that are compiled to produce a pdf document
- Git is a code repository where both files from Overleaf as well as other programs can be stored
- Files external to Overleaf, i.e. Jupyter Notebook graph files, can easily be pushed from Jupyter Notebook directly into the correct section of the Overleaf document that you are collaborating on

2 Benefits of Continuous Integration

- Data and visualisation can be an iterative process in the same way that writing text is
 - While your colleagues edit the text, you can continuously update data without out of date versions going backwards and forwards
 - Because the overhead for change is low, your team members can be more involved in how the data is presented, right from the beginning

3 Gigantum and Gigaleaf make it easier

- By Using Jupyter inside a Gigantum project, integration with Overleaf is even easier and comes with more features
- With Gigantum, there is no need to learn how to use the Git Bridge, in order to push files to the Overleaf document you simply create the chart you want, and using Gigantum's Gigaleaf module it will upload it for you with a few simple lines of code
- Image and data version control is included, as Gigantum tracks and commits notebook changes automatically, the Git revision of the image or table is included in the metadata

Ready to get started?

Our Overleaf Enterprise solution can be provided as a cloud or on-premise solution, with a range of options to suit your requirements. You can also check out some of our great report writing templates in our gallery that you might find useful as a starting point. You can try out templates from the National Institute of Standards and Technology (NIST) and CERN or you can create your own template and share it with your collaborators.

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