JOSS Documentation

Open Journals

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Author and Reviewer Guides

The Journal of Open Source Software (JOSS) is a developer friendly journal for research software packages.

JOSS is an academic journal (ISSN 2475-9066) with a formal peer-review process that is designed to *improve the quality of the software submitted*. Upon acceptance into JOSS, we mint a CrossRef DOI for your paper and we list it on the JOSS website.

CHAPTER 1

About this site

This site contains documentation for authors interested in submitting to JOSS, reviewers who have generously volunteered their time to review submissions, and editors who manage the JOSS editorial process.

If you're interested in learning more about JOSS, you might want to read:

- Our announcement blog post describing some of the motivations for starting a new journal
- The paper in Computing in Science and Engineering introducing JOSS
- The paper in PeerJ CS describing the first year of JOSS
- The about page on the main JOSS site

CHAPTER 2

Submitting a paper to JOSS

If you'd like to submit a paper to JOSS, please read the author submission guidelines in the *Submitting a paper to JOSS* section.

CHAPTER 3

Sponsors and affiliates

JOSS is a proud affiliate of the Open Source Initiative. As such, we are committed to public support for open source software and the role OSI plays therein. In addition, Open Journals (the parent entity behind JOSS) is a NumFOCUS-sponsored project.

3.1 Submitting a paper to JOSS

If you've already developed a fully featured research code, released it under an OSI-approved license, and written good documentation and tests, then we expect that it should take perhaps an hour or two to prepare and submit your paper to JOSS. But please read these instructions carefully for a streamlined submission.

3.1.1 Submission requirements

- The software should be open source as per the OSI definition.
- The software should have an **obvious** research application.
- You should be a major contributor to the software you are submitting.

- The software should be a significant contribution to the available open source software that either enables some new research challenges to be addressed or makes addressing research challenges significantly better (e.g., faster, easier, simpler).
- The software should be feature-complete (no half-baked solutions) and designed for maintainable extension (not one-off modifications). **Minor 'utility' packages, including 'thin' API clients, are not acceptable**.
- Your paper (`paper.md` and BibTeX files, plus any figures) must be hosted in a Git-based repository, ideally together with your software.

In addition, the software associated with your submission must:

- Be stored in a repository that can be cloned without registration.
- Be stored in a repository that is browsable online without registration.
- Have an issue tracker that is readable without registration.
- Permit individuals to create issues/file tickets against your repository.

JOSS publishes articles about research software. This definition includes software that: solves complex modeling problems in a scientific context (physics, mathematics, biology, medicine, social science, neuroscience, engineering); supports the functioning of research instruments or the execution of research experiments; extracts knowledge from large data sets; offers a mathematical library, or similar.

3.1.2 Typical paper submission flow

Before you submit, you should:

- Make your software available in an open repository (GitHub, Bitbucket, etc.) and include an OSI approved open source license.
- Make sure that the software complies with the JOSS review criteria. In particular, your software should be full-featured, well-documented, and contain procedures (such as automated tests) for checking correctness.
- Write a short paper in Markdown format using `paper.md` as file name, including a title, summary, author names, affiliations, and key references. See our *example paper* to follow the correct format.
- (Optional) create a metadata file describing your software and include it in your repository. We provide a script that automates the generation of this metadata.

3.1.3 What should my paper contain?

Important: Begin your paper with a summary of the high-level functionality of your software for a non-specialist reader. Avoid jargon in this section.

JOSS welcomes submissions from broadly diverse research areas. For this reason, we require that authors include in the paper some sentences that explain the software functionality and domain of use to a non-specialist reader. We also require that authors explain the research applications of the software. The paper should be between 250-1000 words.

Your paper should include:

- A list of the authors of the software and their affiliations, using the correct format (see the example below).
- A summary describing the high-level functionality and purpose of the software for a diverse, *non-specialist audience*.
- A clear *Statement of Need* that illustrates the research purpose of the software.

- A list of key references, including to other software addressing related needs.
- Mention (if applicable) of any past or ongoing research projects using the software and recent scholarly publications enabled by it.
- Acknowledgement of any financial support.

As this short list shows, JOSS papers are only expected to contain a limited set of metadata (see example below), a Statement of Need, Summary, Acknowledgements, and References sections. You can look at an example accepted paper. Given this format, a "full length" paper is not permitted, and software documentation such as API (Application Programming Interface) functionality should not be in the paper and instead should be outlined in the software documentation.

Important: Your paper will be reviewed by two or more reviewers in a public GitHub issue. Take a look at the review checklist and review criteria to better understand how your submission will be reviewed.

3.1.4 Example paper and bibliography

This example `paper.md` is adapted from *Gala: A Python package for galactic dynamics* by Adrian M. Price-Whelan http://doi.org/10.21105/joss.00388:

```
---
title: 'Gala: A Python package for galactic dynamics'
tags:
  - Python
  - astronomy
  - dynamics
  - galactic dynamics
  - milky way
authors:
  - name: Adrian M. Price-Whelan
    orcid: 0000-0003-0872-7098
    affiliation: "1, 2" # (Multiple affiliations must be quoted)
  - name: Author Without ORCID
    affiliation: 2
affiliations:
 - name: Lyman Spitzer, Jr. Fellow, Princeton University
   index: 1
 - name: Institution 2
   index: 2
date: 13 August 2017
bibliography: paper.bib

# Optional fields if submitting to a AAS journal too, see this blog post:
# https://blog.joss.theoj.org/2018/12/a-new-collaboration-with-aas-publishing
aas-doi: 10.3847/xxxxx <- update this with the DOI from AAS once you know it.
aas-journal: Astrophysical Journal <- The name of the AAS journal.
---

# Summary

The forces on stars, galaxies, and dark matter under external gravitational
fields lead to the dynamical evolution of structures in the universe. The orbits
of these bodies are therefore key to understanding the formation, history, and
future state of galaxies. The field of "galactic dynamics," which aims to model
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the gravitating components of galaxies to study their structure and evolution,
is now well-established, commonly taught, and frequently used in astronomy.
Aside from toy problems and demonstrations, the majority of problems require
efficient numerical tools, many of which require the same base code (e.g., for
performing numerical orbit integration).

``Gala`` is an Astropy-affiliated Python package for galactic dynamics. Python
enables wrapping low-level languages (e.g., C) for speed without losing
flexibility or ease-of-use in the user-interface. The API for ``Gala`` was
designed to provide a class-based and user-friendly interface to fast (C or
Cython-optimized) implementations of common operations such as gravitational
potential and force evaluation, orbit integration, dynamical transformations,
and chaos indicators for nonlinear dynamics. ``Gala`` also relies heavily on and
interfaces well with the implementations of physical units and astronomical
coordinate systems in the ``Astropy`` package [@astropy] (``astropy.units`` and
``astropy.coordinates``).

``Gala`` was designed to be used by both astronomical researchers and by
students in courses on gravitational dynamics or astronomy. It has already been
used in a number of scientific publications [@Pearson:2017] and has also been
used in graduate courses on Galactic dynamics to, e.g., provide interactive
visualizations of textbook material [@Binney:2008]. The combination of speed,
design, and support for Astropy functionality in ``Gala`` will enable exciting
scientific explorations of forthcoming data releases from the *Gaia* mission
[@gaia] by students and experts alike.

# Mathematics

Single dollars ($) are required for inline mathematics e.g. $f(x) = e^{\pi/x}$

Double dollars make self-standing equations:

$$\Theta(x) = \left\{\begin{array}{l}
0\textrm{ if } x < 0\cr
1\textrm{ else}
\end{array}\right.$$


# Citations

Citations to entries in paper.bib should be in
[rMarkdown](http://rmarkdown.rstudio.com/authoring_bibliographies_and_citations.html)
format.

For a quick reference, the following citation commands can be used:
- `@author:2001`  ->  "Author et al. (2001)"
- `[@author:2001]` -> "(Author et al., 2001)"
- `[@author1:2001; @author2:2001]` -> "(Author1 et al., 2001; Author2 et al., 2002)"

# Figures

Figures can be included like this: ![Example figure.](figure.png)

# Acknowledgements

We acknowledge contributions from Brigitta Sipocz, Syrtis Major, and Semyeong
Oh, and support from Kathryn Johnston during the genesis of this project.
```

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```
# References
```

Example `paper.bib` file:

```
@article{Pearson:2017,
          Adsnote = {Provided by the SAO/NASA Astrophysics Data System},
          Adsurl = {http://adsabs.harvard.edu/abs/2017arXiv170304627P},
          Archiveprefix = {arXiv},
          Author = {{Pearson}, S. and {Price-Whelan}, A.~M. and {Johnston}, K.~V.},
          Eprint = {1703.04627},
          Journal = {ArXiv e-prints},
          Keywords = {Astrophysics - Astrophysics of Galaxies},
          Month = mar,
          Title = {{Gaps in Globular Cluster Streams: Pal 5 and the Galactic Bar}},
          Year = 2017
}

@book{Binney:2008,
          Adsnote = {Provided by the SAO/NASA Astrophysics Data System},
          Adsurl = {http://adsabs.harvard.edu/abs/2008gady.book.....B},
          Author = {{Binney}, J. and {Tremaine}, S.},
          Booktitle = {Galactic Dynamics: Second Edition, by James Binney and Scott␣
↪Tremaine.~ISBN 978-0-691-13026-2 (HB).~Published by Princeton University Press,␣
↪Princeton, NJ USA, 2008.},
          Publisher = {Princeton University Press},
          Title = {{Galactic Dynamics: Second Edition}},
          Year = 2008
}

@article{gaia,
    author = {{Gaia Collaboration}},
    title = "{The Gaia mission}",
    journal = {\aap},
    archivePrefix = "arXiv",
    eprint = {1609.04153},
    primaryClass = "astro-ph.IM",
    keywords = {space vehicles: instruments, Galaxy: structure, astrometry,␣
↪parallaxes, proper motions, telescopes},
    year = 2016,
    month = nov,
    volume = 595,
    doi = {10.1051/0004-6361/201629272},
    adsurl = {http://adsabs.harvard.edu/abs/2016A%26A...595A...1G},
}

@article{astropy,
    author = {{Astropy Collaboration}},
    title = "{Astropy: A community Python package for astronomy}",
    journal = {\aap},
    archivePrefix = "arXiv",
    eprint = {1307.6212},
    primaryClass = "astro-ph.IM",
    keywords = {methods: data analysis, methods: miscellaneous, virtual observatory␣
↪tools},
    year = 2013,
    month = oct,
```

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```
    volume = 558,
    doi = {10.1051/0004-6361/201322068},
    adsurl = {http://adsabs.harvard.edu/abs/2013A%26A...558A..33A}
}
```

Note that the paper ends with a References heading, and the references are built automatically from the content in the `.bib` file. You should enter in-text citations in the paper body following correct Markdown citation syntax.

3.1.5 Submitting your paper

Submission is as simple as:

- Filling in the short submission form
- Waiting for the managing editor to start a pre-review issue over in the JOSS reviews repository: https://github.com/openjournals/joss-reviews

3.1.6 No submission fees

There are no fees for submitting or publishing in JOSS. You can read more about our cost and sustainability model.

3.1.7 Preprint Policy

Authors are welcome to submit their papers to a preprint server (arXiv, bioRxiv, SocArXiv, PsyArXiv etc.) at any point during the submission and review process.

Submission to a preprint server is *not* considered a previous publication.

3.1.8 Authorship

Purely financial (such as being named on an award) and organizational (such as general supervision of a research group) contributions are not considered sufficient for co-authorship of JOSS submissions, but active project direction and other forms of non-code contributions are. The authors themselves assume responsibility for deciding who should be credited with co-authorship, and co-authors must always agree to be listed. In addition, co-authors agree to be accountable for all aspects of the work, and to notify JOSS if any retraction or correction of mistakes are needed after publication.

3.1.9 Submissions using proprietary languages/dev environments

We strongly prefer software that doesn't rely upon proprietary (paid for) development environments/programming languages. However, provided *your submission meets our requirements* (including having a valid open source license) then we will consider your submission for review. Should your submission be accepted for review, we may ask you, the submitting author, to help us find reviewers who already have the required development environment installed.

3.1.10 The review process

After submission:

- An Associate Editor-in-Chief will carry out an initial check of your submission, and proceed to assign a handling editor.

- The handling editor will assign two or more JOSS reviewers, and the review will be carried out in the JOSS reviews repository.
- Authors will respond to reviewer-raised issues (if any are raised) on the submission repository's issue tracker. Reviewer and editor contributions, like any other contributions, should be acknowledged in the repository.
- Upon successful completion of the review, authors will make a tagged release of the software, and deposit a copy of the repository with a data-archiving service such as Zenodo or figshare, get a DOI for the archive, and update the review issue thread with the version number and DOI.
- After we assign a DOI for your accepted JOSS paper, its metadata is deposited with CrossRef and listed on the JOSS website.
- The review issue will be closed, and an automatic tweet from @JOSS_TheOJ will announce it!

If you want to learn more details about the review process, take a look at the reviewer guidelines.

3.2 Reviewing for JOSS

Firstly, thank you so much for agreeing to review for the Journal of Open Source Software (JOSS), we're delighted to have your help. This document is designed to outline our editorial guidelines and help you understand our requirements for accepting a submission into the JOSS. Our review process is based on a tried-and-tested approach of the rOpenSci collaboration.

3.2.1 Guiding principles

We like to think of JOSS as a 'developer friendly' journal. That is, if the submitting authors have followed best practices (have documentation, tests, continuous integration, and a license) then their review should be rapid.

For those submissions that don't quite meet the bar, please try to give clear feedback on how authors could improve their submission. A key goal of JOSS is to raise the quality of research software generally and you (the experienced reviewer) are well placed to give this feedback.

A JOSS review involves checking submissions against a checklist of essential software features and details in the submitted paper. This should be objective, not subjective; it should be based on the materials in the submission as perceived without distortion by personal feelings, prejudices, or interpretations.

We encourage reviewers to file issues against the submitted repository's issue tracker. **When you have completed your review, please leave a comment in the review issue saying so.**

You can include in your review links to any new issues that you the reviewer believe to be impeding the acceptance of the repository. (Similarly, if the submitted repository is a GitHub repository, mentioning the review issue URL in the submitted repository's issue tracker will create a mention in the review issue's history.)

3.2.2 JOSS Conflict of Interest Policy

The definition of a conflict of Interest in peer review is a circumstance that makes you "unable to make an impartial scientific judgment or evaluation." (PNAS Conflict of Interest Policy). JOSS is concerned with avoiding any actual conflicts of interest, and being sufficiently transparent that we avoid the appearance of conflicts of interest as well.

As a reviewer, COIs are your present or previous association with any authors of a submission: recent (past four years) collaborators in funded research or work that is published; and lifetime for the family members, business partners, and thesis student/advisor or mentor. In addition, your recent (past year) association with the same organization of a submitter is a COI, for example, being employed at the same institution.

If you have a conflict of interest with a submission, you should disclose the specific reason to the submissions' editor. This may lead to you not being able to review the submission, but some conflicts may be recorded and then waived, and if you think you are able to make an impartial assessment of the work, you should request that the conflict be waived. For example, if you and a submitter were two of 2000 authors of a high energy physics paper but did not actually collaborate. Or if you and a submitter worked together 6 years ago, but due to delays in the publishing industry, a paper from that collaboration with both of you as authors was published 2 year ago. Or if you and a submitter are both employed by the same very large organization but in different units without any knowledge of each other.

Declaring actual, perceived, and potential conflicts of interest is required under professional ethics. If in doubt: ask the editors.

3.3 Review criteria

3.3.1 The JOSS paper

As outlined in the submission guidelines provided to authors, the JOSS paper (the compiled PDF associated with this submission) should only include:

- A list of the authors of the software
- Author affiliations
- A summary describing the high-level functionality and purpose of the software for a diverse, non-specialist audience
- A clear statement of need that illustrates the purpose of the software
- Mentions (if applicable) of any ongoing research projects using the software or recent scholarly publications enabled by it
- A list of key references including a link to the software archive

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Important: Note the paper *should not* include software documentation such as API (Application Programming Interface) functionality, as this should be outlined in the software documentation.

3.3.2 Review items

Important: Note, if you've not yet been involved in a JOSS review, you can see an example JOSS review checklist here.

3.3.2.1 Software license

There should be an OSI approved license included in the repository. Common licenses such as those listed on choosealicense.com are preferred. Note there should be an actual license file present in the repository not just a reference to the license.

> **Acceptable:** A plain-text LICENSE file with the contents of an OSI approved license**Not acceptable:** A phrase such as 'MIT license' in a README file

3.3.2.2 Documentation

There should be sufficient documentation for you, the reviewer to understand the core functionality of the software under review. A high-level overview of this documentation should be included in a `README` file (or equivalent). There should be:

3.3.2.2.1 A statement of need

The authors should clearly state what problems the software is designed to solve and who the target audience is.

3.3.2.2.2 Installation instructions

There should be a clearly-stated list of dependencies. Ideally these should be handled with an automated package management solution.

> **Good:** A package management file such as a Gemfile or package.json or equivalent **OK:** A list of dependencies to install **Bad (not acceptable):** Reliance on other software not listed by the authors

3.3.2.2.3 Example usage

The authors should include examples of how to use the software (ideally to solve real-world analysis problems).

3.3.2.2.4 API documentation

Reviewers should check that the software API is documented to a suitable level.

> **Good:** All functions/methods are documented including example inputs and outputs **OK:** Core API functionality is documented **Bad (not acceptable):** API is undocumented

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Note: The decision on API documentation is left largely to the discretion of the reviewer and their experience of evaluating the software.

3.3.2.2.5 Community guidelines

There should be clear guidelines for third-parties wishing to:

- Contribute to the software
- Report issues or problems with the software
- Seek support

3.3.2.3 Functionality

Reviewers are expected to install the software they are reviewing and to verify the core functionality of the software.

3.3.2.4 Tests

Authors are strongly encouraged to include an automated test suite covering the core functionality of their software.

> **Good:** An automated test suite hooked up to an external service such as Travis-CI or similar **OK:** Documented manual steps that can be followed to objectively check the expected functionality of the software (e.g., a sample input file to assert behavior) **Bad (not acceptable):** No way for you the reviewer to objectively assess whether the software works

3.3.3 Other considerations

3.3.3.1 Authorship

As part of the review process, you are asked to check whether the submitting author has made a 'substantial contribution' to the submitted software (as determined by the commit history) and to check that 'the full list of paper authors seems appropriate and complete?'

As discussed in the submission guidelines for authors, authorship is a complex topic with different practices in different communities. Ultimately, the authors themselves are responsible for deciding which contributions are sufficient for co-authorship, although JOSS policy is that purely financial contributions are not considered sufficient. Your job as a reviewer is to check that the list of authors appears reasonable, and if it's not obviously complete/correct, to raise this as a question during the review.

3.3.3.2 An important note about 'novel' software and citations of relevant work

Submissions that implement solutions already solved in other software packages are accepted into JOSS provided that they meet the criteria listed above and cite prior similar work. Reviewers should point out relevant published work which is not yet cited.

3.3.3.3 What happens if the software I'm reviewing doesn't meet the JOSS criteria?

We ask that reviewers grade submissions in one of three categories: 1) Accept 2) Minor Revisions 3) Major Revisions. Unlike some journals we do not reject outright submissions requiring major revisions - we're more than happy to give the author as long as they need to make these modifications/improvements.

3.3.3.4 What about submissions that rely upon proprietary languages/development environments?

As outlined in our author guidelines, submissions that rely upon a proprietary/closed source language or development environment are acceptable provided that they meet the other submission requirements and that you, the reviewer, are able to install the software & verify the functionality of the submission as required by our reviewer guidelines.

If an open source or free variant of the programming language exists, feel free to encourage the submitting author to consider making their software compatible with the open source/free variant.

3.4 Review checklist

JOSS reviews are checklist-driven. That is, there is a checklist for each JOSS reviewer to work through when completing their review. A JOSS review is generally considered incomplete until the reviewer has checked off all of their checkboxes.

Below is an example of the review checklist for the Yellowbrick JOSS submission.

Important: Note this section of our documentation only describes the JOSS review checklist. Authors and reviewers should consult the review criteria to better understand how these checklist items should be interpreted.

3.4.1 Conflict of interest

- As the reviewer I confirm that I have read the JOSS conflict of interest policy and that there are no conflicts of interest for me to review this work.

3.4.2 Code of Conduct

- I confirm that I read and will adhere to the JOSS code of conduct.

3.4.3 General checks

- **Repository:** Is the source code for this software available at the repository url?
- **License:** Does the repository contain a plain-text LICENSE file with the contents of an OSI approved software license?
- **Version:** Does the release version given match the GitHub release (v0.8)?
- **Authorship:** Has the submitting author made major contributions to the software? Does the full list of paper authors seem appropriate and complete?

3.4.4 Functionality

- **Installation:** Does installation proceed as outlined in the documentation?
- **Functionality:** Have the functional claims of the software been confirmed?
- **Performance:** If there are any performance claims of the software, have they been confirmed? (If there are no claims, please check off this item.)

3.4.5 Documentation

- **A statement of need:** Do the authors clearly state what problems the software is designed to solve and who the target audience is?
- **Installation instructions:** Is there a clearly-stated list of dependencies? Ideally these should be handled with an automated package management solution.
- **Example usage:** Do the authors include examples of how to use the software (ideally to solve real-world analysis problems).
- **Functionality documentation:** Is the core functionality of the software documented to a satisfactory level (e.g., API method documentation)?
- **Automated tests:** Are there automated tests or manual steps described so that the function of the software can be verified?
- **Community guidelines:** Are there clear guidelines for third parties wishing to 1) Contribute to the software 2) Report issues or problems with the software 3) Seek support

3.4.6 Software paper

- **Authors:** Does the `paper.md` file include a list of authors with their affiliations?
- **A statement of need:** Do the authors clearly state what problems the software is designed to solve and who the target audience is?
- **References:** Do all archival references that should have a DOI list one (e.g., papers, datasets, software)?

3.5 Editorial Guide

The Journal of Open Source Software (JOSS) conducts all peer review and editorial processes in the open, on the GitHub issue tracker.

JOSS editors manage the review workflow with the help of our bot, `@whedon`. The bot is summoned with commands typed directly on the GitHub review issues. For a list of commands, type: `@whedon commands`.

Note: To learn more about `@whedon`'s functionalities, take a look at our dedicated guide.

3.5.1 Pre-review

Once a submission comes in, it will be in the queue for a quick check by the Editor-in-chief (EiC). From there, it moves to a `PRE-REVIEW` issue, where the EiC will assign a handling editor, and the author can suggest reviewers. Initial direction to the authors for improving the paper can already happen here, especially if the paper lacks some requested sections.

Important: If the paper is out-of-scope for JOSS, editors assess this and notify the author in the `PRE-REVIEW` issue.

The EiC assigns an editor (or a volunteering editor self-assigns) with the command `@whedon assign @username as editor` in a comment.

Note: If a paper is submitted without a recommended editor, it will show up in the weekly digest email under the category 'Papers currently without an editor.' Please review this weekly email and volunteer to edit papers that look to be in your domain. If you choose to be an editor in the issue thread type the command `@whedon assign @yourhandle as editor`

3.5.1.1 How papers are assigned to editors

By default, unless an editor volunteers, the Associated Editor-in-chief (AEiC) on duty will attempt to assign an incoming paper to the most suitable handling editor. While AEiCs will make every effort to match a submission with the most appropriate editor, there are a number of situations where an AEiC may assign a paper to an editor that doesn't fit entirely within the editor's research domains:

- If there's no obvious fit to *any* of the JOSS editors
- If the most suitable editor is already handling a large number of papers
- If the chosen editor has a lighter editorial load than other editors

In most cases, an AEiC will ask one or more editors to edit a submission (e.g. `@editor1, @editor 2 - would one of you be willing to edit this submission for JOSS`). If the editor doesn't respond within ~3 working days, the AEiC may assign the paper to the editor regardless.

3.5.1.2 Finding reviewers

At this point, the handling editor's job is to identify reviewers who have sufficient expertise in the field of software and in the field of the submission. JOSS papers have to have a minimum of two reviewers per submission, except for papers that have previously been peer-reviewed via rOpenSci. In some cases, the editor also might want to formally add themself as one of the reviewers. If the editor feels particularly unsure of the submission, a third (or fourth) reviewer can be recruited.

To recruit reviewers, the handling editor can mention them in the `PRE-REVIEW` issue with their GitHub handle, ping them on Twitter, or email them. After expressing initial interest, candidate reviewers may need a longer explanation via email. See sample reviewer invitation email, below.

Once a reviewer accepts, the handling editor runs the command `@whedon assign @username as reviewer` in the `PRE-REVIEW` issue. Add more reviewers with the command `@whedon add @username as reviewer`.

Note: The `assign` command clobbers all reviewer assignments. If you want to add an additional reviewer use the `add` command.

3.5.1.3 Starting the review

Next, run the command `@whedon start review`. If you haven't assigned an editor and reviewer, this command will fail and `@whedon` will tell you this. This will open the `REVIEW` issue, with prepared review checklists for each reviewer, and instructions. The editor should close the `PRE-REVIEW` issue, at this point, and move the conversation to the separate `REVIEW` issue.

3.5.2 Review

The `REVIEW` issue contains some instructions, and reviewer checklists. The reviewer(s) should check off items of the checklist one-by-one, until done. In the meantime, reviewers can engage the authors freely in a conversation aimed at improving the paper.

If a reviewer recants their commitment or is unresponsive, editors can remove them with the command `@whedon remove @username as reviewer`. You can also add new reviewers in the `REVIEW` issue, but in this case, you need to manually add a review checklist for them by editing the issue body.

Comments in the `REVIEW` issue should be kept brief, as much as possible, with more lengthy suggestions or requests posted as separate issues, directly in the submission repository. A link-back to those issues in the `REVIEW` is helpful.

When the reviewers are satisfied with the improvements, we ask that they confirm their recommendation to accept the submission.

3.5.3 After acceptance

When a submission is accepted, we ask that the authors create an archive (on Zenodo, figshare, or other) and post the archive DOI in the `REVIEW` issue. The editor should run the command `@whedon set <archive doi> as archive`, and ping the EiC for final processing.

Steps:

- Get a new proof with the `@whedon generate pdf` command.
- Download the proof, check all references have DOIs, follow the links and check the references.
  - Whedon can help check references with the command `@whedon check references`
- Give the paper a proof-read and ask authors to fix typos.
- Ask the author to make a Zenodo archive, and report the DOI in the review thread.
- Check the Zenodo deposit has the correct metadata (title and author list), and request the author edit it if it doesn't match the paper.
- Run `@whedon set <doi> as archive`.
- Run `@whedon set <v1.x.x> as version` if the version was updated.
- Ping the `@openjournals/joss-eics` team on the review thread letting them know the paper is ready to be accepted.

At that point, the EiC/AEiC will take over to publish the paper.

It's also a good idea to ask the authors to check the proof. We've had a few papers request a post-publication change of author list, for example—this requires a manual download/compile/deposit cycle and should be a rare event.

3.5.4 Processing of rOpenSci-reviewed and accepted submissions

If a paper has already been reviewed and accepted by rOpenSci, the streamlined JOSS review process is:

- Assign yourself as editor and reviewer
- Add a comment in the pre-review issue pointing to the rOpenSci review
- Start the review issue
- Add a comment in the review issue pointing to the rOpenSci review
- Compile the paper and check it looks ok
- Tick off all the review checkboxes
- Go to to the source code repo and grab the Zenodo DOI
- Accept the paper

3.5.5 Sample letter to invite reviewers

```
Dear Dr. Jekyll,

I found you following links from the page of The Super Project and/or on Twitter. This
message is to ask if you can help us out with a submission to JOSS (The Journal of␣
↪Open
Source Software), where I'm an editor.

JOSS publishes articles about open source research software. The submission I'd like␣
↪you
to review is titled: "great software name here"

and the submission repository is at: https://github.com/< ... >

JOSS is a free, open-source, community driven and developer-friendly online journal
```

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```
(no publisher is seeking to raise revenue from the volunteer labor of researchers!).

The review process at JOSS is unique: it is open and author-reviewer-editor␣
↪conversations
are encouraged.

JOSS reviews involve downloading and installing the software, and inspecting the␣
↪repository
and submitted paper for key elements. See https://joss.readthedocs.io/en/latest/
↪review_criteria.html

Editors and reviewers post comments on the Review issue, and authors respond to the␣
↪comments
and improve their submission until acceptance (or withdrawal, if they feel unable to
satisfy the review).

Would you be able to review this submission for JOSS? If not, can you recommend
someone from your team to help out?

Kind regards,

JOSS Editor.
```

3.5.6 Overview of editorial process

Step 1: An author submits a paper.

The author can choose to select an preferred editor based on the information available in our biographies. This can be changed later.

Step 2: If you are selected as an editor you get @-mentioned in the pre-review issue.

This doesn't mean that you're the editor, just that you've been suggested by the author.

Step 3: Once you are the editor, find the link to the code repository in the `pre-review` issue

Step 4: The editor looks at the software submitted and checks to see if:

- There's a general description of the software
- The software is within scope as research software
- It has an OSI-approved license

Step 5: The editor responds to the author saying that things look in line (or not) and will search for reviewer

Step 6: The editor finds >= 2 reviewers

- Use the list of reviewers: type the command `@whedon list reviewers` or look at list of reviewers in a Google spreadsheet
- If people are in the review list, the editor can @-mention them on the issue to see if they will review: e.g. `@person1 @person2 can you review this submission for JOSS?`
- Or solicit reviewers outside the list. Send an email to people describing what JOSS is and asking if they would be interested in reviewing.

Step 7: Editor tells Whedon to assign the reviewer to the paper

- Use `@whedon assign @reviewer as reviewer`

- To add a second reviewer use `@whedon add @reviwer2 as reviewer`

Note: The `assign` command clobbers all reviewer assignments. If you want to add an additional reviewer use the `add` command.

Step 8: Create the actual review issue

- Use `@whedon start review`
- An issue is created with the review checklist, one per reviewer, e.g. https://github.com/openjournals/joss-reviews/issues/717

Step 9: Close the pre-review issue

Step 10: The actual JOSS review

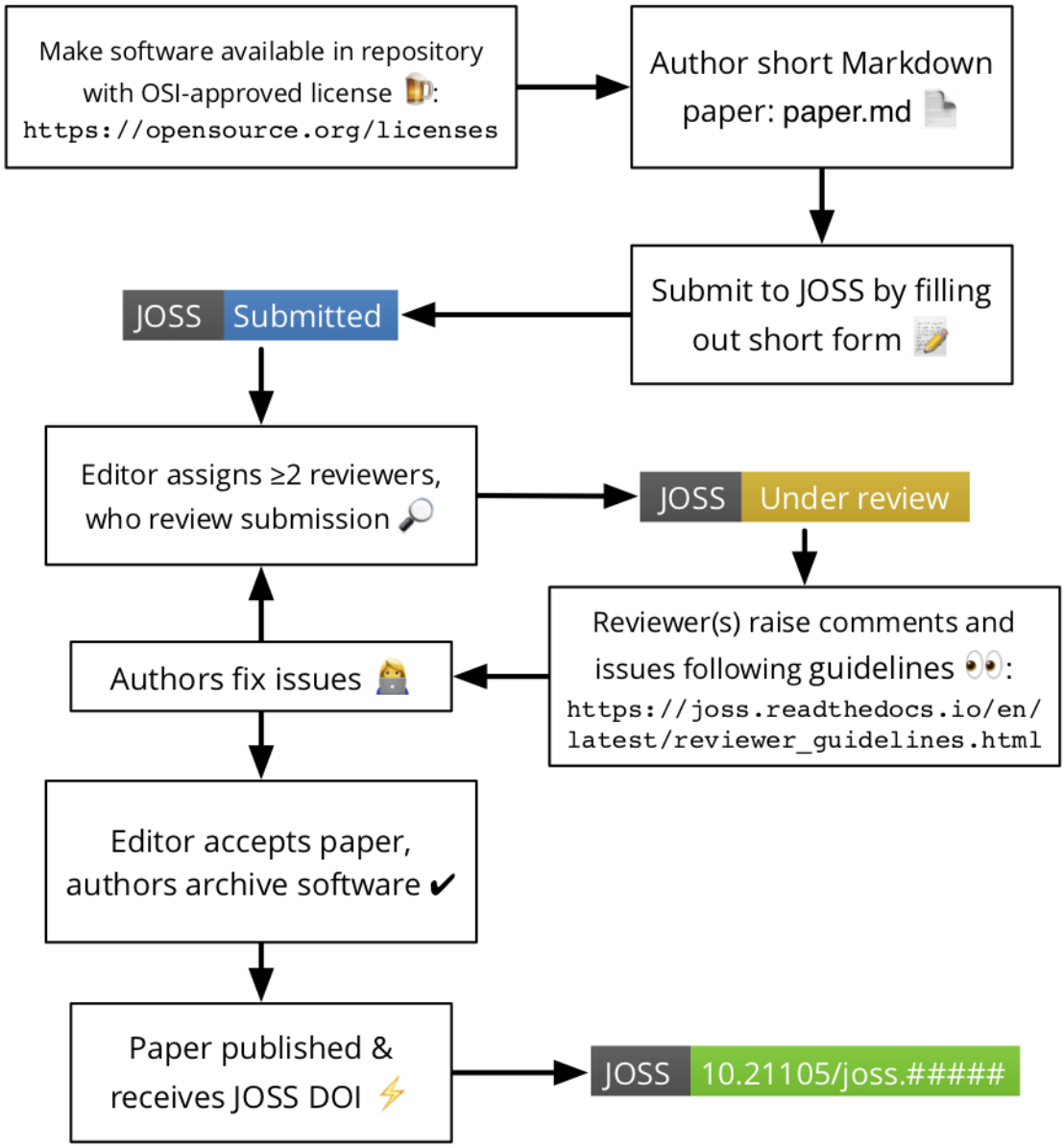
- The reviewer reviews the paper and has a conversation with the author. The editor lurks on this conversation and comes in if needed for questions (or CoC issues).
- The reviewer potentially asks for changes and the author makes changes. Everyone agrees it's ready.

Step 11: The editor pings the EiC team to get the paper published

- To get the paper published, ping the `@openjournals/joss-eics` team on the review thread letting them know the paper is ready to be accepted.

Step 12: Celebrate publication! Tweet! Thank reviewers! Say thank you on issue.

3.5.7 Visualization of editorial flow



Editorial flow

3.5.8 Expectations on JOSS editors

3.5.8.1 Responding to editorial assignments

As documented above, usually, papers will be assigned to you by one of the AEiCs. We ask that editors do their best to respond in a timely fashion (~ 3 working days) to invites to edit a new submission.

3.5.8.2 Continued attention to assigned submissions

As an editor, part of your role is to ensure that submissions you're responsible for are progressing smoothly through the editorial process. This means that once or twice per week we ask that you check your GitHub notifications and/or your editorial dashboard (e.g. `http://joss.theoj.org/dashboard/youreditorname`) for updates to the papers you are handling.

If reviews go stale

Sometimes reviews go quiet, either because a reviewer has failed to complete their review or an author has been slow to respond to a reviewer's feedback. **As the editor, we need you to prompt the author/or reviewer(s) to revisit the submission if there has been no response within 7-10 days unless there's a clear statement in the review thread that says an action is coming at a slightly later time, perhaps because a reviewer committed to a review by a certain date, or an author is making changes and says they will be done by a certain date.**

Whedon has functionality to remind an author or review to return to a review at a certain point in the future. For example:

```
@whedon remind @reviewer in five days
```

3.5.9 Out of office

Sometimes we need time away from our editing duties at JOSS. The joss-reviews repository has the OoO bot installed which means you can mark yourself as out of the office (and unable to respond to reviews) for a period of time e.g.:

Mark yourself as OoO in one of the reviews you're editing in the joss-reviews repository like this:

```
/ooo January 18 until February 2
```

Ooo bot will then respond to any mentions in the joss-reviews repository to let people know you're away.

Note, if you're planning on being out of the office for more than two weeks, please let the JOSS editorial team know.

3.6 Interacting with Whedon

Whedon or `@whedon` on GitHub, is our editorial bot that interacts with authors, reviewers, and editors on reviews.

`@whedon` can do a bunch of different things. If you want to ask `@whedon` what it can do, simply type the following in a `review` or `pre-review` issue:

```
@whedon commands
```

This will return an output something like this (the exact response depends upon whether or not you're an editor):

```
# List all of Whedon's capabilities
@whedon commands

# Assign a GitHub user as the sole reviewer of this submission
@whedon assign @username as reviewer

# Add a GitHub user to the reviewers of this submission
@whedon add @username as reviewer

# Remove a GitHub user from the reviewers of this submission
```

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```
@whedon remove @username as reviewer

# List of editor GitHub usernames
@whedon list editors

# List of reviewers together with programming language preferences and domain␣
↪expertise
@whedon list reviewers

# Change editorial assignment
@whedon assign @username as editor

# Set the software archive DOI at the top of the issue e.g.
@whedon set 10.0000/zenodo.00000 as archive

# Set the software version at the top of the issue e.g.
@whedon set v1.0.1 as version

# Open the review issue
@whedon start review

EDITORIAL TASKS

# Compile the paper
@whedon generate pdf

# Compile the paper from alternative branch
@whedon generate pdf from branch custom-branch-name

# Remind an author or reviewer to return to a review after a
# certain period of time (supported units days and weeks)
@whedon remind @reviewer in 2 weeks

# Ask Whedon to accept the paper and deposit with Crossref
@whedon accept

# Ask Whedon to check the references for missing DOIs
@whedon check references
```

3.6.1 Author commands

A subset of the Whedon commands are available to authors (and reviewers):

3.6.1.1 Compiling papers

When a `pre-review` or `review` issue is opened, `@whedon` will try to compile the JOSS paper by looking for a `paper.md` file in the repository specified when the paper was submitted.

If it can't find the `paper.md` file it will say as much in the review issue. If it can't compile the paper (i.e., there's some kind of Pandoc error), it will try and report that error back in the thread too.

Note: If you want to see what command `@whedon` is running when compiling the paper, take a look at the code here.

Anyone can ask `@whedon` to compile the paper again (e.g., after a change has been made). To do this simply comment on the review thread as follows:

```
@whedon generate pdf
```

3.6.1.1.1 Compiling papers from a non-default branch

By default, Whedon will look for papers in the default git branch. If you want to compile a paper from a non-default branch, this can be done as follows:

```
@whedon generate pdf from branch custom-branch-name
```

3.6.1.2 Finding reviewers

Sometimes submitting authors suggest people the think might be appropriate to review their submission. If you want the link to the current list of reviewers, type the following in the review thread:

```
@whedon list reviewers
```

3.6.2 Editorial commands

Most of `@whedon`'s functionality can only be used by the journal editors.

3.6.2.1 Assigning an editor

Editors can either assign themselves or other editors as the editor of a submission as follows:

```
@whedon assign @editorname as editor
```

3.6.2.2 Adding and removing reviewers

Reviewers should be assigned by using the following commands:

```
# Assign a GitHub user as the sole reviewer of this submission
@whedon assign @username as reviewer

# Add a GitHub user to the reviewers of this submission
@whedon add @username as reviewer

# Remove a GitHub user from the reviewers of this submission
@whedon remove @username as reviewer
```

Note: The `assign` command clobbers all reviewer assignments. If you want to add an additional reviewer use the `add` command.

3.6.2.3 Starting the review

Once the reviewer(s) and editor have been assigned in the `pre-review` issue, the editor starts the review with:

```
@whedon start review
```

Important: If a reviewer recants their commitment or is unresponsive, editors can remove them with the command `@whedon remove @username as reviewer`. You can also add new reviewers in the `REVIEW` issue, but in this case, you need to manually add a review checklist for them by editing the issue body.

3.6.2.4 Reminding reviewers and authors

Whedon can reminders authors and reviewers after a specified amount of time to return to the review issue. Reminders can only be set by editors, and only for REVIEW issues. For example:

```
# Remind the reviewer in two weeks to return to the review
@whedon remind @reviewer in two weeks
```

```
# Remind the reviewer in five days to return to the review
@whedon remind @reviewer in five days
```

```
# Remind the author in two weeks to return to the review
@whedon remind @author in two weeks
```

Note: Most units of times are understood by Whedon, e.g., *hour/hours/day/days/week/weeks*.

Important: For reviewers, the reminder will only be triggered if the reviewer's review is outstanding (i.e., outstanding checkboxes).

3.6.2.5 Setting the software archive

When a submission is accepted, we ask that the authors create an archive (on Zenodo, figshare, or other) and post the archive DOI in the `REVIEW` issue. The editor should add the `accepted` label on the issue and ask `@whedon` to add the archive to the issue as follows:

```
@whedon set 10.0000/zenodo.00000 as archive
```

3.6.2.6 Changing the software version

Sometimes the version of the software changes as a consequence of the review process. To update the version of the software do the following:

```
@whedon set v1.0.1 as version
```

3.6.3 Accepting a paper (dry run)

Whedon can accept a paper from the review issue. This includes generating the final paper PDF, Crossref metedata, and depositing this metadata with the Crossref API.

Topic editors can ask for the final proofs to be created by Whedon with the following command:

```
@whedon accept
```

On issuing this command, Whedon will also check the references of the paper for any missing DOIs. This command can be triggered separately:

3.6.3.1 Check references

```
@whedon check references
```

Note: Whedon can verify that DOIs resolve, but cannot verify that the DOI associated with a paper is actually correct. In addition, DOI suggestions from Whedon are just that—i.e., they may not be correct.

3.6.4 Accepting a paper (for real)

If everything looks good with the draft proofs from the `@whedon accept` command, the (associate) editors-in-chief can take the additional step of actually accepting the paper with the following command:

```
@whedon accept deposit=true
```

Note: This command is only available to the editor-in-chief or associate editors-in-chief.

3.7 Installing the JOSS application

To be written…

For now, please take a look at the JOSS codebase.