Audit pypi.org

This audit will not contain a list of all the accessibility issues found on pypi.org. Rather, I hope it will serve as a guide of how to discover different issues and explain why they are important to fix.

A few pats on the back

You do a lot of good things! Here are some that I found,

- Forms are provided with fitting labels. and placeholders are being read to screen readers with hints that explain how to interact.
- Interface is generally not cluttered.
- Font size is good.
- You work really well with outlines.
- Primary buttons stand out clearly from the rest on the page content.
- On mobile, it is good that you provide the user with the option of using the desktop version.
- You keep good padding between sections, which means that users with motor impairments are able to scroll on mobile phone.
- The web site works with zoom, both in desktop and on mobile. This is important for visually impaired users.
- Color contrasts generally reach acceptable levels.

Things to ponder

These are some general pointers of things that can cause issues for impaired users.

- The optimal line length of a body text is often considered to be 50-60 characters per line, including spaces. Some other sources suggest that up to 75 characters is acceptable. At some instances, the line length can reach up to 120 characters.
- You have some disabled buttons on the page. Can you avoid these? Read more here, Disabled buttons suck.
- Try to avoid using italic text. It is difficult to read for users with reading impairments such as dyslexia.

Route specific issues

These issues appear when using a screen reader on the site. However, fixing these will help all kinds of users.

/

1. Footer headings are marked as h3 elements, which is a bit confusing. Using the landmarks view (see screenshot below) or navigating between headers using a shortkey reveals that the footer headings are read as subheadings to the "New releases" heading. These headings should either be h2 elements as well or not be headings at all. If unclear what the problem is, compare to the heading structure on */help*, where there is a clear hierarchy.

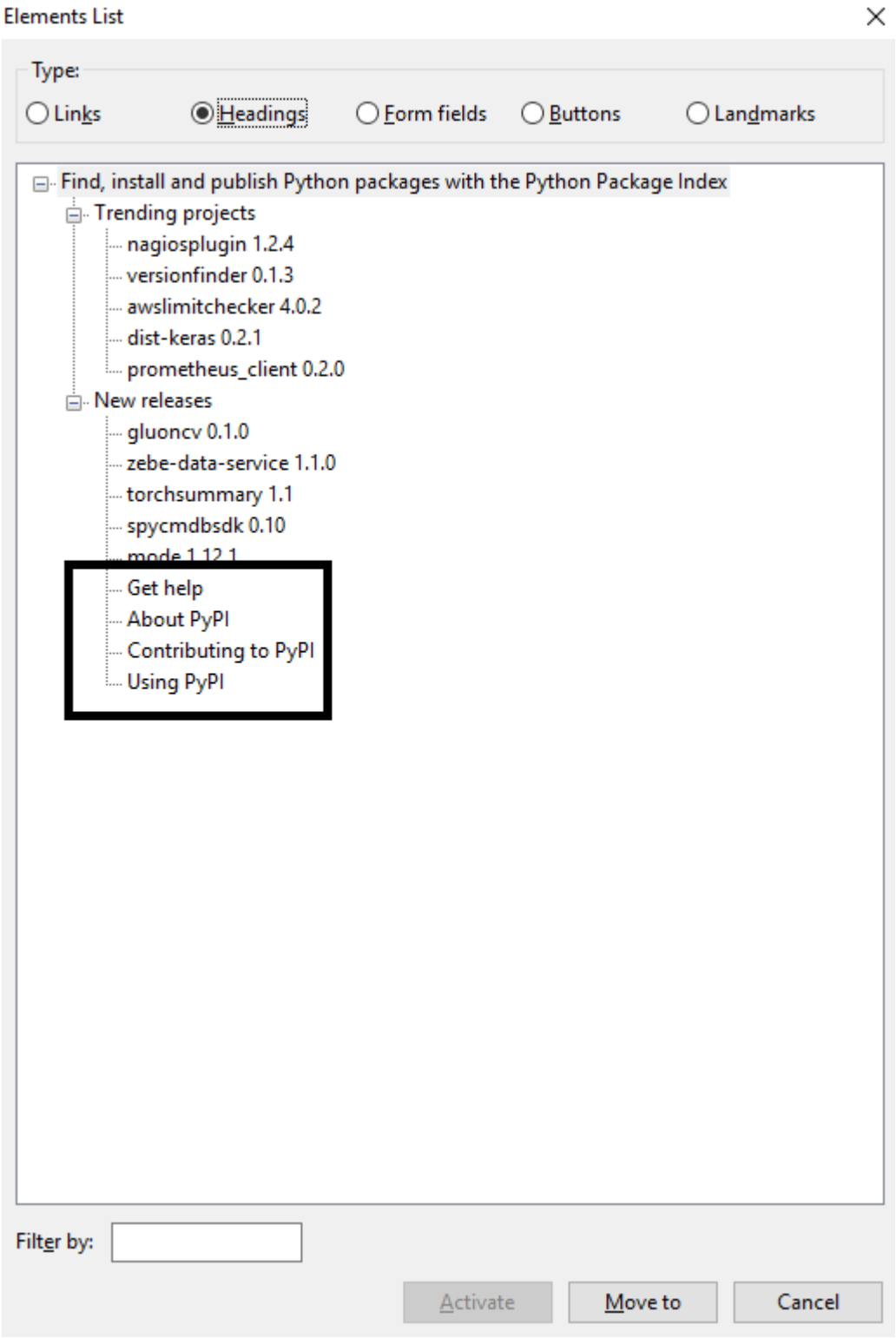


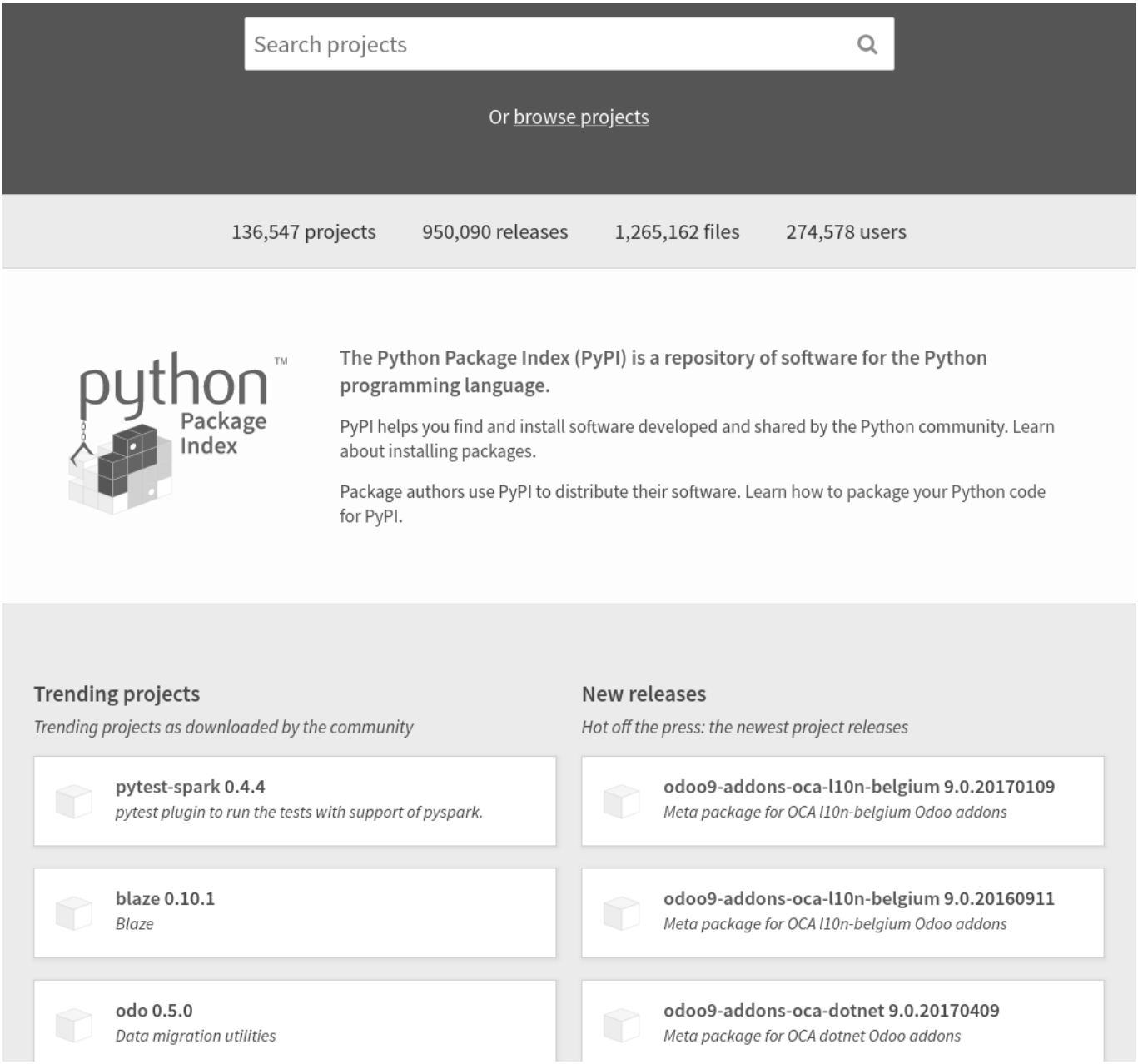
Image showing heading hierarchy accessibility issue

2. The individual project elements under the "trending projects" and "new release" headings are only clickable if you hit the link element inside of them. Small clickable areas can be really hard to access for a user with motor impairment. To fix this specific issue, you can make the whole box clickable or at

least all the text and the icon. If you *do* make the whole box clickable, be sure to leave enough space between the boxes so that users are able to scroll on a mobile phone.

3. There is a color contrast issue with the cube shaped figure under the headings "trending projects" and "new releases". There is nothing in any guideline about contrasts when it comes to images and logos, and it may seem picky since the figure does not communicate any vital information on the page. However, if a user sees something on the page but can't make out what meaning it conveys, it is possible that the user gets frustrated because the user feels like he or she is missing out on information. This scenario is especially true when it comes to visually impaired users because it is common that web pages exclude them from a full user experience.

4. On a few instances, the web site communicates the meaning of certain elements by solely using colors. When that element's context gets lost, the meaning is impossible to discover. The screenshot below is taken in greyscale to simulate color blindness. As you can see, it is impossible to separate the link element from the other elements, except at one instance. The "browse project" link stands out because, aside from communicating its meaning using color, the link text is underlined. This a common accessibility problem and it is often fixed by underlining the link texts, as done at one instance here, or by using complementary icons.



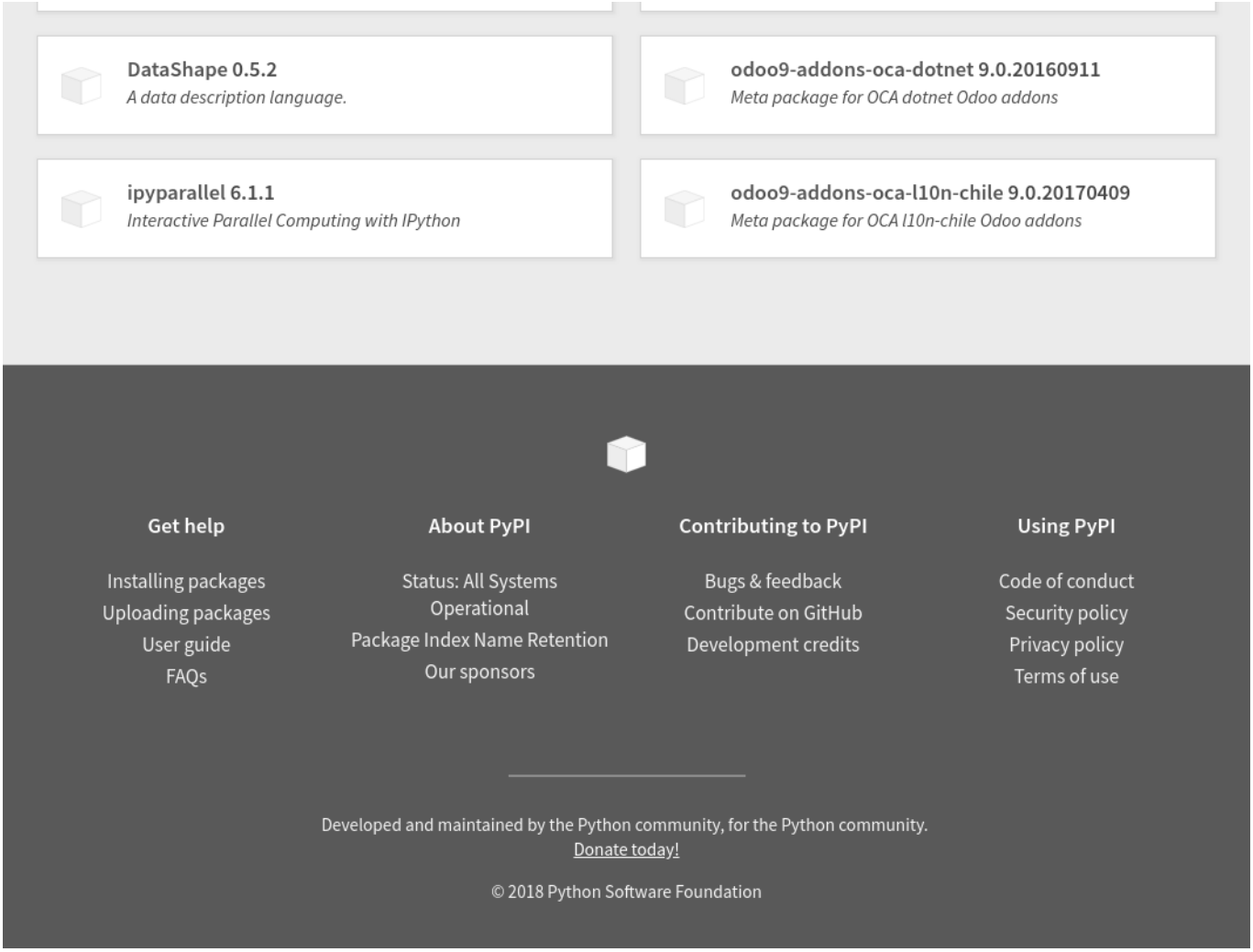


Image showing color contrast accessibility issue

/search

4. When clicking the buttons in the form on the left side under the heading "Filter by classifier", which contains all the checkboxes, nothing is being read by the screen reader. In other words, a screen reader user has no idea that there is clickable content expanded below the button, which is something that is evident for a visual user. Fixing these type of issues is usually done with an HTML attribute called `aria-expanded`. This technique indicates to the user whether the collapsable content below an element is in the expanded or in the collapsed state. Read more about aria-expanded

5. When searching for a package, the results are not read by the screen reader. While a visual user will see the new content appearing on the page (the result box of the search), a screen reader user is not conveyed the same information. The same issue also appear when filtering packages. This is a classic case of a live region on a web page, where a technique such as `aria-live` will come in handy. Read more about live regions

6. "Skip to main content" link goes to the filter section of the page. This means that you have to tab through all the filters before being able the read the results of the search.

/project/:projectName

7. The cube shaped image with the `alt` text "history node" is read on each release version. This can feel repetitive and frustrating as a screen reader user. A visual user will probably not focus on the images at

all. Therefore, you can leave the `alt` text empty so that the screen reader user can focus on the most vital information: the release version.

/login

8. If entering the wrong username or password, no information about what went wrong is conveyed to the screen reader. Instead, "accounts from pypi.pythin.org work too!" is read. The error message *is possible* to navigate to, but as a visual user I will immediately focus on the error message because of the icon and the text color.
9. The "show password" checkbox is accessible for a screen reader user, but it has no usage.

/register

10. The help text for creating an acceptable password pattern should be part of the input field's `label` and not be a separate element.
11. The help text should not be italicized.

How to move forward

You can ask us if you need help with anything of the below.

- [ ] Arrange user testing for people with disabilities

  Nothing beats user testing! The best user testing is done face to face. However, if you can't find the time, you can use social media to reach out to different groups of disabilities.

- [ ] Educate you core team about accessibility

  There are alot of free courses, tools, talks, etc. available.

- [x] Have someone check new changes of the project for accessibility issues

  I will be happy to do this.

- [ ] Provide something about accessibility in the contribution guidelines on Github

  This way you can reduce the code reviewing time greatly.

Tools

- NVDA (screen reader on Windows)
- TalkBack (screen reader on Android)
- Funkify (disablity simulator, chrome extension)
- Axess Lab internal accessibility checklist
- WCAG 2.0 guidelines
- Firefox
- Chrome
- WebAIM Color Contrast Checker