A conversation with Outreachy student Sonja Heinze about Fractal - GNOME's Matrix client

Here we are glad to have a conversation with former Outreachy Student Sonja Heinze about her work on Fractal, GNOME's Matrix client. Sonja who was doing an Outreachy internship for GNOME from December 2019 to March this year adding video functionally to GNOME's Maxtrix client Fractal.

Hi Sonja would you like to introduce yourself and tell us something about your background?

I'm a mathematician and have just finished a PhD in algebraic singularity theory.

At the end of 2018, I went to a place called Recurse Center for three months with the idea to figure out if programming would be a fun alternative to an academic career. There, I met lots of amazing people and, apart from learning whatever seemed interesting at any moment, worked on two projects I had in mind beforehand.

So my conclusion was: Yeah, programming is for sure a worthy alternative.

Right, so you did an outreachery internship for GNOME working on Fractal, can you tell the audience something about your work about adding video functionality to Fractal?

Before my internship, video attachments in Fractal were handled like file attachments.

With my internship, video attachments get handled as follows: any message with video attachment that appears in the room history (i.e. list of messages sent in that room), gets provided its own box where it gets auto-played in a loop without sound. There is also a three dot button on it. Clicking on that button or right clicking on the message widget provides a video message context menu popover (see first mail attachment). Of course, when the user scrolls up or down in the room history and the video message gets out of sight, it stops playing.

To me, the project seemed the most interesting and challenging one on the Outreachy list. For me, learning through the internship is just as important as starting to get to know the open source world. I was not familiar with GTK or GStreamer before my internship but reading and learning more about them seemed very interesting. Furthermore, Fractal is written in Rust. I hadn't seen any code written in Rust before, but Rust had already caught my attention during my time at the Reaschre Center.

How would you in general rate the development experience? (not least considering that GitLab these days have a central role for the GNOME developer experience)

It has taken me a little while to get used to a good development work flow, like when to ask a question in a private chat and when to ask in a public chat, when to ask a question on GitLab .

Now, I find GitLab very user-friendly. Also, whenever I did not know about a functionality that'd be useful, my project mentors explained the functionality to me. And, the documentation have been very useful.

What are your impressions about the GNOME community and how do you feel about contributing to GNOME in general?

The two people from the community I've been working with the most was my project mentors. They was both super nice and helpful. I asked a lot of questions and always got a patient and helpful reply. And the same holds for the designer who gave me advice on how to design and style the video player. At the beginning of February , I went to FOSDEM, where I met several GNOME community members in person, among them one of my mentors. Everyone was very welcoming. I felt like I could ask a lot of questions and there was no need to hide that sometimes I didn't understand their technical conversations.

Contributing to GNOME is cool. I used to see GNOME as a non commercial open-source alternative to Windows or Mac and contributing to GNOME is, for sure worth the while. Since FOSDEM, I'm also seeing more the intrinsic value of desktop applications, as opposed to web applications.

Your work on Fractal involved using GStreamer, can you elaborate and tell the audience something about GStreamer?

GStreamer is a library used for media reproduction. In Fractal, GStreamer was already used for the implementation of the audio player that appears for messages with audio attachment in the room message history. GStreamer reproduces audio or video by means of a pipeline, i.e. a system of connecting pieces, called elements, that manipulate the media in one way or another. In Fractal, we use a high level API provided by GStreamer for that called GstPlayer. In the end, I've been able to do almost everything through GstPlayer. But on my way there, I've sometimes manipulated the pipeline directly and through that I've learned a quite a bit about how GStreamer works.

We want to thank Sonja for taking time talking with us about Fractal, and hope she had a good experience with her outreachery internship. We wish Sonja the best of luck in her future endeavors and hope she will continue contribute and be part of the GNOME community.

Fractal is available on Flathub as a Flatpak if you are interested to try out the app. Also information about GNOME's Outreachery program is available on the GNOME wiki.

text by Oliver Propst