GNOME PipeWire

Do you confirm that you are eligible for this internship as stated in our eligibility rules at https://wiki.gnome.org/Internships#Eligibility?. Answer "yes" or "no".
Yes.

Do you confirm that you have read and agree with the internship contract linked at https://wiki.gnome.org/Internships#Eligibility?. Answer "yes" or "no".
Yes.

== Personal Information ==

If you are accepted, fields in this section that are marked "(public)" will be displayed on a public acceptances page. If you prefer different information to be displayed publicly than you want to provide in this form, please provide both a private version visible only to the coordinators and mentors of the internship, and a public version to be displayed publicly.
Name (public): Tapasweni Pathak

Preferred pronoun (e.g. she, he, they): She

E-mail address: tapaswenipathak@gmail.com

Blog URL (public, required): tapaswenipathak.wordpress.com

IRC nick (public, optional): tapasweni

Twitter URL (public, optional): http://twitter.com/tapaswenipathak (inactive)

Website or Portfolio URL (optional): tapasweni-pathak.github.io

GitHub, GitLab, or any other code repository URL (optional):
http://github.com/tapasweni-pathak

LinkedIn URL (optional): https://www.linkedin.com/in/tapaswenipathak/

Any other online presence URL you wish to provide:
https://www.quora.com/profile/Tapasweni-Pathak

Location (city, state/province, and country) (public): India

Education completed or in progress (include university, major/concentration, degree level, and graduation year): Bachelors in Computer Science, Indira Gandhi Delhi Technical University for Women, Delhi, 2014

How did you hear about this internship? Someone added the information to the list https://github.com/tapasweni-pathak/SOC-Programs, I was looking for something more of systems and C programming and working with mentors in an internship would be best.

== Project Information ==

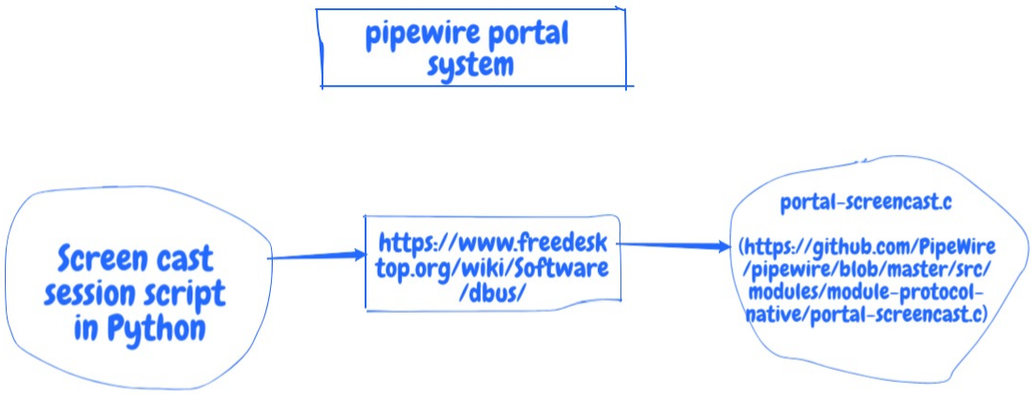
What project are you interested in? PipeWire portal system

Who is a possible mentor for the project you are interested in? Wim Taymans

Please describe your experience with the GNOME community and GNOME projects as a user and as a contributor. Some experience with GNOME stack and some contributions to GNOME are required for considering the application. Include information and links to the contributions you made: I have been using GNOME desktop and software since years. I started using linux based distro when I was in university in 2010. Since than my primary machine runs on linux have GNOME desktop. Contributions can be find here and here and will be updated at the linked urls.

Please describe your experience with the project you are interested to participate as a user and as a contributor and relevant areas. Include information and links to the contributions you made:
There were no initusial tasks that I could work on but after discusesing I have started working on few related tickets which can be found here.

Background: screen cast session script should be integrated in Portal using dbus.



Tasks:

https://gitlab.gnome.org/snippets/39 should be integrated in https://github.com/PipeWire/pipewire/blob/work/src/modules/module-flatpak.c using dbus.

Please describe any relevant projects that you have worked on previously and what knowledge you gained from working on them (include links):

- System level programming ↔ C and C++
  - Base Number Convertor System
  - Visualization of CPU Scheduling Algorithms
  - IITD Research Internship Report
  - Qualcomm Internship Report
  - Linux Kernel Patches; Arnd's tree's patches
  - Linux Kernel Analysis; USENIX ;login: paper
  - Notes and implementations of few OS and AOS papers; All OS Algos
  - Linux kernel analysis [initial phase]
  - Some open source AWS work
- Other programming projects and Open Source Contributions

I have been interested, contributing to low level or close to system level projects since few years. During my bachelors I worked on implemented different operating system algorithms as a starting point in C and graphics.h. I contributed to Linux kernel in the application period and worked on research and submitted patchs as a summer of code intern and wrote an article about it[1]. I worked with Julia Lawall and Nicolas Palix. I worked to fix y2038, iio, coccinelle and infer fixes. Recently I have

been working on fixing facebook/infer issues in Linux kernel and researching over 4.x versions.
I have nearly 5 years of programming experience. I did engineering internship with Qualcomm where I contributed to low level C and perl programming. I have worked with SAP Labs as Software Engineer(Level 13), Software Engineer with Mapbox. I have also been OWASP summer of code intern which is more close to web security areas. In all these I have worked with low level systems programming.

Please describe your experience with any other FOSS projects as a user and as a contributor:
As described above, I have been involved with open source project since my bachelors. I learn a lot while contributing to open source projects. I open source few of my projects on GitHub and reports of closed source ones are present on LinkedIn. I have been contributing and involved with Linux kernel, OWASP, AirMozilla dev, Systers projects.

Please describe the details and the timeline of the work you plan to accomplish on the project you are most interested in (discuss these first with the mentor of the project):

Project timeline

Dec1 - Dec7	• Bonding period
	  ◦ Get in touch with community
	  ◦ Get familiar with codebase, standards followed.
	  ◦ Checklist and complete setup, decide on system configuration, any specifics.

Dec7 - Dec21	• Start with creating dbus examples and testing
Dec21- Jan6	• Learn pipewire and portal
Jan6- Jan19	• implement caller code • new_session_path() • new_request_path() • remote_desktop_call()
Jan19-	• screen_cast_call()

Jan31	• on_gst_message() • play_pipewire_stream() • on_start_response() • terminate() • on_select_sources_response() • on_select_devices_response() • on_create_session_response()

Feb1-Feb9	• Add current test coverage integration
	  ◦ travis-ci
	  ◦ coveralls
	  ◦ auto building

Feb10-Feb23	• Make test coverage near to 100% after getting current numbers
Feb24-Mar1	• Buffer time for unexpected delays, or necessary work unidentified in the beginning.

Enhancement Tasks

- Travis CI
- Converalls
- Auto build
- Increase test coverage after getting current numbers

Readings

- https://wiki.gnome.org/Projects/Mutter/RemoteDesktop
- https://blogs.gnome.org/uraeus/2018/01/26/an-update-on-pipewire-the-multimedia-revolution-an-update/
- More info here.