

Newcomer Genesis

Evolution

BY BASTIAN ILSO HOUGAARD AND CARLOS SORIANO SANCHEZ





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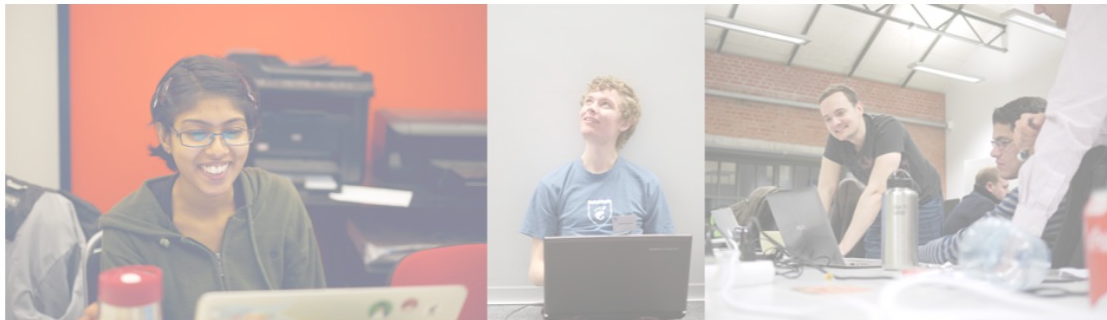


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Be a part of a vibrant worldwide community



GNOME is a friendly and welcoming community. Getting involved is a great way to learn skills, have fun, and help to create world-class Free Software.

Pick an area

Coding

GNOME has every kind of coding task, and there are guides to help you get started.

[Read the Newcomers Guide](#)

Engagement

The Engagement Team works on marketing, user outreach, events organization, and websites. It wants your help!

[Join the Engagement Team](#)

Documentation

Help to maintain GNOME's user and developer documentation.

[Contribute to the Documentation Team](#)

Translation

GNOME is translated into over 80 languages, all thanks to our volunteers. Help to translate it into your language!

[Find a Localization Team](#)

Can't find what you're looking for?

There are many other teams and activities in the GNOME project, including testing, design, bug triage, system administration, and more.

[Browse Other Teams](#)



Little of History

- GNOME Love
- 3 years ago, the transformation starts.
- 2 years ago, Bastian joins
- 1 year ago, Newcomers initiative
- Now, newcomers genesis evolution.





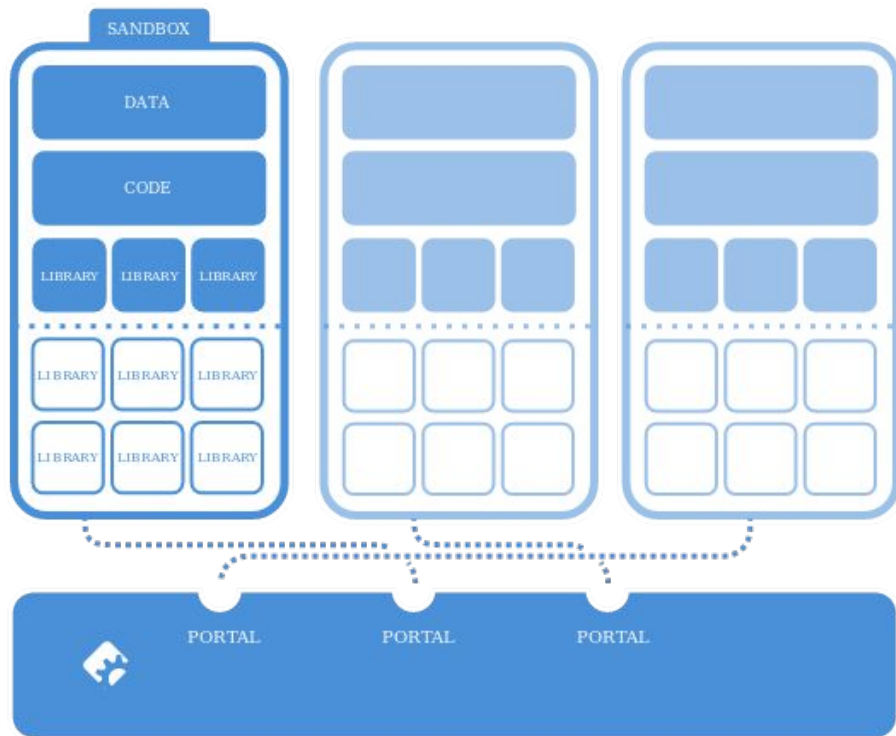
The build problem

- Jhbuild is absurdly complex for current standards (e.g. npm, cargo, etc.)
- Build times around 8h if including WebKit
- No reproducible
- Only latest Fedora and Ubuntu supported



The solution - Flatpak

- Reproducible
- No distro dependent
- Build times around 8 min
- Common runtime + few deps
- Each app has a manifest



The integration problem

- No software is integrated with jhbuild
- And mostly cannot be
- Terminal is required for building and contributing to GNOME
- Documentation is sparse and in different places
- No profiling of the app
- No debugging of the app
- No git UI



The solution - Builder

- Flatpak can be integrated easily
- No terminal required anymore
- Documentation can be integrated
- Debugger can be integrated
- Profiling is integrated
- Git management can be integrated

```
Polari / master  org.gnome.Polari.json  🔍 Pre
```

```
Project  < >  src / appNotifications.js
```

```
1  const Gio = imports.gi.Gio;
2  const Gtk = imports.gi.Gtk;
3  const Pango = imports.gi.Pango;
4  const Tp = imports.gi.TelepathyGLib;
5
6  const Lang = imports.lang;
7  const Mainloop = imports.mainloop;
8
9  const TIMEOUT = 7;
10 const COMMAND_OUTPUT_REVEAL_TIME = 3;
11
12 var AppNotification = new Lang.Class({
13   ... Name: 'AppNotification',
14   ... Abstract: true,
15   ... Extends: Gtk.Revealer,
16
17   ... _init: function() {
18     ... this.parent({ reveal_child: true,
19     ... transition type: Gtk.RevealerTrans
20     ... this.connect('notify::child-revealed',
21     ... Lang.bind(this, this._onChildReveal
22     ... },
23
24   ... close: function() {
25     ... this.reveal_child = false;
26     ... },
27
28   ... _onChildRevealed: function() {
29     ... if (!this.child_revealed)
30     ... this.destroy();
31     ... }
32 });
33
34 var MessageNotification = new Lang.Class({
35   ... Name: 'MessageNotification',
36   ... Extends: AppNotification,
37
38   ... init: function(label, iconName) {
```

```
Build Output  Todo  Terminal
```

```
Cache hit for gspell, skipping build
Stopping at module polari
Everything cached, checking out from cache
Pruning cache
ninja: no work to do.
[0/1] Installing files.
```


Problems were not only technical

- IRC is outdated and inconvenient
- Wiki feels visually old
- Not feeling of accomplishment during guide
- Not clear how many steps remaining
- Not guide for after your first patch
- No visual guidance



Riot - The new IRC

Filter room names

FAVOURITES

Drop here to favourite

PEOPLE 30

ROOMS 123

- GUADEC
- #d
- GNOME sysadmin team
- #flatpak
- GNOME Design
- GNOME Builder
- GNOME
- #photos
- GNOME Hackers
- GUADEC Sport

MORE

LOW PRIORITY 4

- IRC Matrix Bridges

HISTORICAL

Home, Profile, Lists, Add, Settings

GNOME Design

<https://wiki.gnome.org/Design/Contribute>

Jump to first unread message

J jhasse (IRC)
I don't understand what you are trying to say

R rishi (IRC)
So its not just developers in the conventional sense of the term.

J jhasse (IRC)
Never said that it's just developers. I said "developers and technical people".

R rishi (IRC)
I know what you said. My point stands.
Second, random people on the Internet who actually respond to these surveys often have a "I know better attitude" without having spent time sitting behind a bug-tracker or working on the code itself.

J jhasse (IRC)
I agree

R rishi (IRC)
Third, and most importantly, random online surveys are not a replacement for, or equivalent to user testing.

J jhasse (IRC)
But don't you think that joining an IRC channel and executing terminal commands would qualify someone as "technical"?

R rishi (IRC)
I understand your point. And surveys definitely lie! Every approach has drawbacks. Drawbacks of the bugtracker/IRC/extensions approach should also be considered. Do you really think that answering to (IMHO valid) suggestions with "Surveys lie" or "No." is a good idea?

R rishi (IRC)
Every approach that doesn't involve user testing or studying users who wouldn't know/care about online polls has drawbacks, yes. :)

N nekohayoo (IRC) joined the room.

Send a message (unencrypted)...

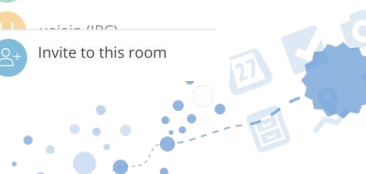
Settings, Search, Close

283

Filter room members

- Adrián
- Ernestas Kulik
- gregknicholson (IRC)
- em (IRC)
- vyasgiridhar (IRC)
- giordano (IRC)
- ochosi (IRC)
- mpt (IRC)
- wozgeass_ (IRC)
- heroux (IRC)
- juliushaertl (IRC)
- hussam (IRC)
- ...

Invite to this room



Newcomer Genesis Evolution

Welcome to the Newcomers Guide!

The Newcomers Guide is for developers who want to participate in coding GNOME's apps. Contributing to GNOME can be boiled down to 4 steps:



What does it require?

There are no requirements to start development. Seriously.

That said, it's an advantage if you know a bit of object oriented programming and git. Patience and curiosity helps too. Take a deep breath. Are you ready?

Let's do it! →


Want to contribute something else?

GNOME has many teams who are always looking for new contributors, [get Involved today.](#)

Newcomers - GNOME Wiki!
https://wiki.gnome.org/Newcomers/ -

Newcomers Home Recent Changes Schedule Bastianlso Settings Logout GNOME.org

Before we begin..





[Join the #newcomers chatroom!](#)

In the #newcomers chatroom you can ask questions while following this guide.

Hangout and get help.

in GNOME we use IRC chatrooms to hangout together. In the #newcomers chatroom you can ask questions while following this tutorial.






Ask but be patient.

It can take time before a fellow contributor can assist you. Please provide as much information as possible about your problem. Refrain from asking for help via private messages - this is what the #newcomer channel is for.

Be self-driven and take the initiative.


GNOME contributors find and decide to work on tasks on their own. The community can't help with all steps and some steps requires that you help yourself. GNOME is driven by people like you who takes the initiative and create awesome things!



[Gotcha, let's go! →](#)






Newcomers - GNOME Wiki!
https://wiki.gnome.org/Newcomers/

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Choose a Project

GNOME has got hundreds of projects. To make it easier for you to get started, we have highlighted 5 applications.

-  **Maps** (#gnome-maps)
Mentors: [Jonas Danielsson \(jonasdn\)](#), [Marcus Lundblad \(marcus\)](#), [Amisha Singla \(amisha\)](#), [Mattias Bengtsson \(mattiasb\)](#)
A simple map application, written in Javascript.
-  **Music** (#gnome-music)
Mentors: [Vadim Rutkovsky \(rutkovs\)](#), [Felipe Borges \(feborges\)](#)
A music playing application, written in Python.
-  **Nibbles** (#gnome-games)
Mentors: [Julian Radu \(julianradu\)](#)
A game where the user controls a snake, written in Vala.
-  **Photos** (#photos)
Mentors: [Alessandro Bono \(abono\)](#), [Debarshi Ray \(rishi\)](#)
An application to show, find and organize your photos, written in C.
-  **Polari** (#polari)
Mentors: [Bastian Ise \(bastianise\)](#), [Florian Müller \(fmuellner\)](#)
An easy to use IRC client, written in Javascript.

[..or check out the full list here.](#)

How do I choose?


The apps you see here are all equally challenging. Is there programming language you like? Maybe there is an app you recognize and use already yourself? Exploring the project websites, installing the apps and trying them out can help you choose.

That's it! In the next step we will look at how to build the project from source code.

[Build the project](#) →


Newcomers – GNOME Wiki! <https://wiki.gnome.org/Newcomers/>

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Build the project

GNOME is a big stack of dependencies. All applications requires the newest unstable versions of everything. So what you need is a development environment.



Meet Builder.

Builder is an *Integrated Development Environment* (IDE). You can use it to download and build GNOME applications. Builder uses the [Flatpak technology](#) to compile and run your project in a sandbox.

[Download Builder](#) ↓

Once you have Builder, you can move on to get your project built.

1. Clone the repository
I hope we can do this through Builder

2. Adjust your build preferences
Set Builder to compile your project against the GNOME Nightly Flatpak SDK

3. Build the App
Press the Play button. First time you build Builder is going to download dependencies and compile them and your app. This can take a while, but the next compilation will be much faster.

That's it! Now that you have the project built and can run it, we can start looking into fixing bugs.

[Find and Solve a Task](#) →

Newcomers - GNOME Wiki! <https://wiki.gnome.org/Newcomers/>

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Your first mission!

Keep your hands warm and your head cold. You are about to make your first contribution!

In GNOME we keep all tasks inside a *bug tracker*. You can imagine it a bit like a huge database of "to do" items. All of the bugs are open for anyone to try and solve!

Documentation

Before we can begin, you need to know where to search for clues. Afterall you might find something in the code or in the bug report you don't understand.

1. Search the GNOME Developer Center

The Developer Center contains GNOME's APIs and you can look up any function or class for GTK+, Glib and other GNOME libraries.

[Visit Developer Center](#) [Search Developer Center](#)

2. Find documentation in your project's homepage

Each GNOME project has its own homepage with information and links to resources that can help you understand the source code



GNOME.org

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1. Search the GNOME Developer Center
2. Find Documentation in your project's homepage
3. Ask questions in the GNOME channels (IRC)


Oh Ready! Where do I start?

Each GNOME application (GNOME) has had paid some bugs which are easier to handle.


1. Choose a bug from the list.
2. Carefully read the bug title, the description and the attachments (if any).
3. Identify the problem.
4. Find the relevant code.

Newcomers - GNOME Wiki!
https://wiki.gnome.org/Newcomers/

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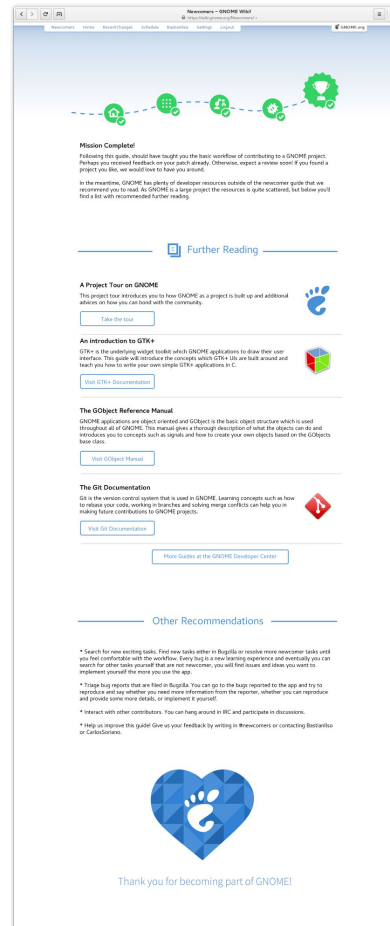
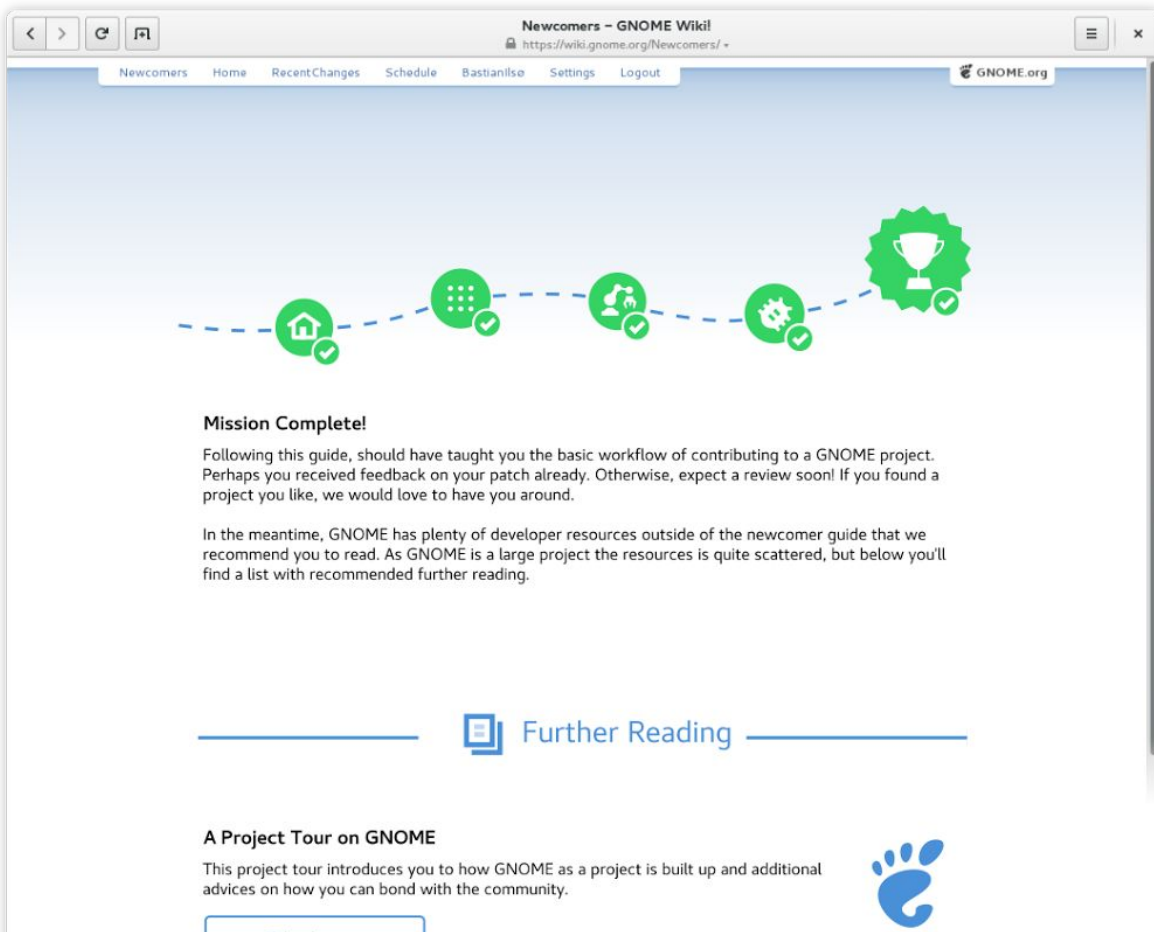
A dashed line path of icons representing a workflow: a home icon, a grid icon, a person icon, a gear icon, and a trophy icon. The trophy icon is highlighted with a blue glow and a downward arrow above it.



Made it!

Let's get this merged!
Got your code working? Let's get this uploaded to bugzilla.





What's Next

Sometimes flatpak-builder fails to download,
no instructions provided for manual install.

Once Builder fails, nobody knows what to
do. We provide a streamline process, but if
it fails, is critical. No way to workaround it.

Link directly to a web chat
client with decent UX and
guest access such as Riot

Things requiring to delete the flatpak
cache

Installing builder nightly when you already
have builder installed (stable/distro etc).

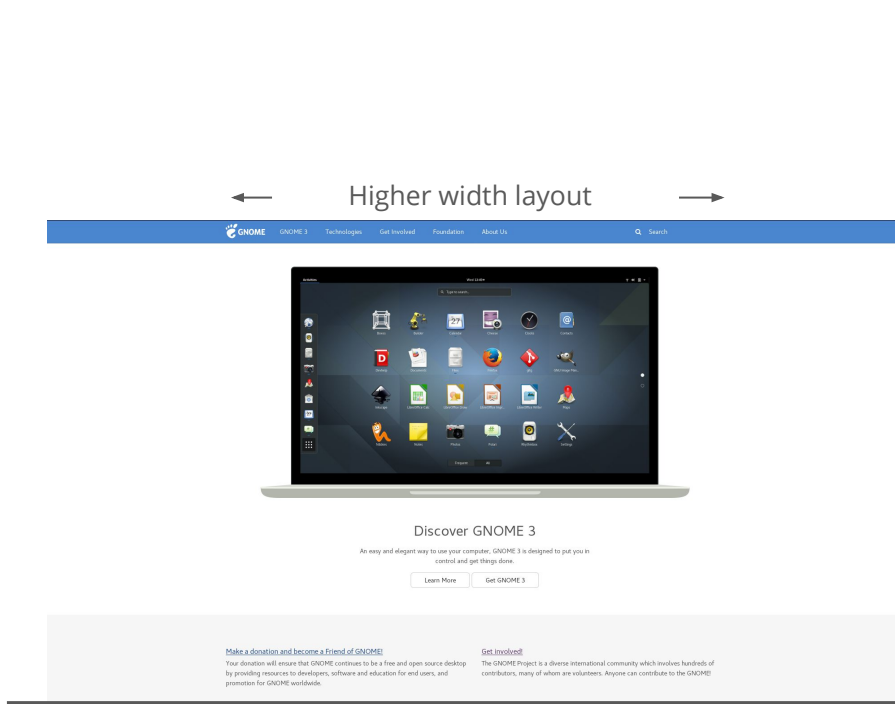
Overriden builder .desktop files

Setup inconsistency between what
developers run and what newcomers run.

Provide flatpak download to gitg

Things requiring to delete the builder
cache

warning messages which might add to the
confusion like "Gtk-Message: Failed to load
module "unity-gtk-module" or "Failed to load
module "canberra-gtk-module""



Thanks tomtryf!

Multi-column text

/Newcomers/SubmitPatch



Current



Centered



Fix?



Long-term Re-Evaluation

What do we need in a newcomer guide?

..Is it just an objective guide with a few instructions in it?

..Is this all that newcomers need to get started in GNOME?



newcomer

Hi all :) I'm new to Gnome and I'd like to contribute to Gnome projects but I don't know where to start from, I know how to program in C, Python, Java, and C++ but I'm not very fluent in them (I'm still student), I checked the Gnome's getting started guide on the website and it's really good, but I feel like there a lot of things that I should have known before checking it, For example

I don't know how to write OOP in the C language and in the section of Building Application in the getting started guide most of the code I didn't understand what it does. So any help or guide would be really appreciated, I'm sorry if that was long. Thanks in advance

newcomer

hello gnome friends
i am new on gnome 3, but i am ready to growth in language
and good programming practices
there is someone online? hello again!
hei?
hello!
i want to elaborate a better gedit
who is with me?

newcomer

hello everyone , my name is mohit verma i am a new contributor and wanted to start to contribute to gnome

newcomer

Btw i am a college student and an engineering student and i started to learn web design and development and soon i get into design and development with javascript i made several site with basics html css and javascript and now making with Jekyll , hugo etc static site developemnt and i also had made a chatbot kindoff lol yeah it responds too!

newcomer

Hi guys

newcomer

Hey

Been wanting to contribute for a while now and want to finally get started, any recommendations on a small/simple bug to start with?

helper

newcomer i think the recommendation would be to pick an app from here, and then look at their newcomer bugs - <https://wiki.gnome.org/Newcomers/ChooseProject>

newcomer

Yeah I have looked through those but was just wondering if there was any preference etc

newcomer

hello friends, i am new to the open source community, i know c and python please help me find a project to which i can contribute. Thank u

What are newcomers looking for in GNOME?

Improving skills

Giving back

Being part of a community social motivation

Finding enjoyment in the work hedonic motivation

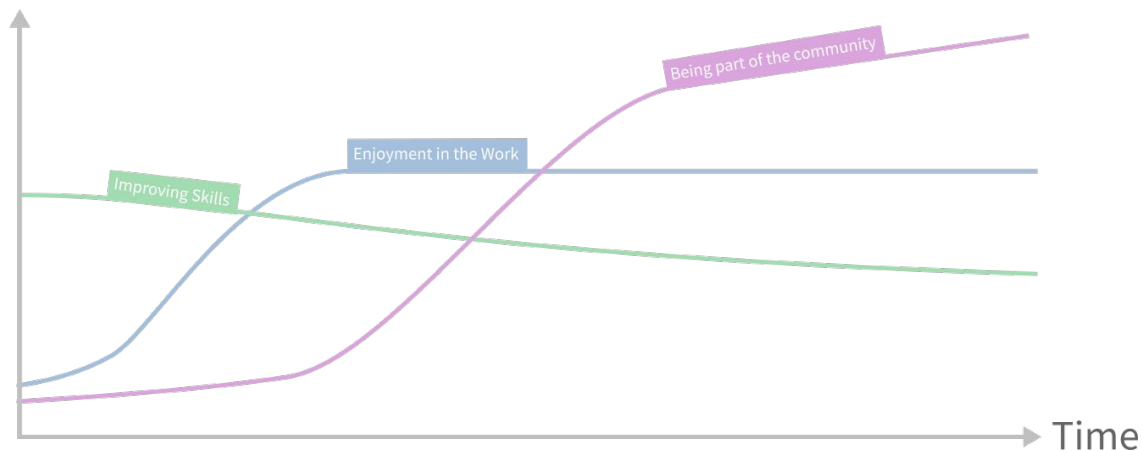
Example



hello gnome friends

i am new on gnome 3, but i am ready to growth in language and good programming practices

Motivation



What challenges do newcomers face?

user

Hi guys, I've downloaded GNOME Builder but it appears to be missing the run icon... Any idea what I did wrong?

newcomer

I am on Ubuntu Gnome 16.04. And Builder doesn't appear to show as installed on either the GNOME or Ubuntu software centers. Should I uninstall it from flatpak then get it through the software centers?

newcomer

After uninstalling both Builder and flatpak I followed the newcomer wiki and am having the same issue. Whenever I try to build a project it fails immediately with no build output. There is a tab along the top saying that I am missing flatpak-builder, clicking install brings up a download tab saying "Installing 1 package" but never changes

Issues in installation

Missing error handling
Distro/Flatpak version conflicts



What challenges do newcomers face?

newcomer

Facing error while installing builder

error: While pulling runtime/org.gnome.Sdk/x86_64/3.24 from remote gnome:
Could not connect: Socket I/O timed out

newcomer

Hey everyone, I'm trying to hack on nautilus but when I put '<https://git.gnome.org/browse/nautilus>' as the repository URL I get the error message 'Failed to resolve address for https: No address associated with hostname'. I can ping/wget the URL on a terminal and the address resolves in a web browser. Any idea what might be up?

Connectivity issues

Missing fallback behavior?



What challenges do newcomers face?

newcomer

ok thanks i will try that. sorry for the rather rude question. it is just very demotivating that after trying to contribute to project by creating patches for some bugs, none where actually looked at yet. i maybe am just used to different time frames for reactions on such things from the projects i contributed so far. but regardless i switched from trying to contribute to project to contribute to other project as it is listed as one of the newcomer projects.

newcomer

hello gnome friends
i am new on gnome 3, but i am ready to growth in language
and good programming practices
there is someone online? hello again!
hei?
hello!
i want to elaborate a better gedit
who is with me?

..lack of follow-up?



newcomer I know c programming but don't know anything about gtk,gobject and vala.I want to learn and contribute in nautilus project is it necessary to learn all these technology before exploring nautilus project Please guide me.

helper **newcomer**: You will need to learn GTK+ and GObject at the minimum
newcomer: Since Nautilus uses both extensively
newcomer: In general, in order to contribute to GNOME, you'll have to learn GTK+ and GObject

newcomer **helper**: Thank you a lot for your guidance now I will learn these two technology GTK+ and Gobject concepts

...
What happened afterwards?

Did you find the right information to learn about GTK+ and GObject?

Were the docs intimidating?

Did other things in your life pile up and take over?

Are you still excited to contribute to GNOME?

Learn about GTK+ GObject Concepts

All Videos News Images Shopping More Settings

About 393,000 results (0.81 seconds)

Including results for **Learn about *GTK* GObject Concepts**
Search only for **Learn about GTK+ GObject Concepts**

Getting started with writing a GLib/GTK+ application in C - GNOME Wiki
<https://wiki.gnome.org/SébastienWilmet/DevGettingStarted> ▼
Aug 7, 2016 - The logical learning path is GLib -> GObject -> GIO -> GTK+. ... The important concepts of GLib/GObject is object-oriented programming, and ...

GObject: GObject Reference Manual - GNOME Developer Center
<https://developer.gnome.org/gobject/unstable/gobject-The-Base-Object-Type.html> ▼
For the high-level concepts behind GObject, read Instantiable classed types: Objects. from g_type_default_interface_ref() , or, if you know the interface has already ... The paramspecs are owned by GLib, but the array should be freed with ...

Part I. Concepts: GObject Reference Manual
<https://developer.gnome.org/gobject/stable/pt01.html> ▼
Part I. Concepts. Table of Contents. Background · Data types and programming · Exporting a C API · The GLib Dynamic Type System ... The GObject base class.

PDF **D GTK - DConf 2017**
dconf.org/2017/talks/hunn.pdf ▼
GTK+, more than you ever wanted to know ... GIR files available in XML containing GObject introspection information ... Built on concept of memory safety.

GObject Gtk, Gnome, Gtk+, Gl, Gtk2, Gtk3...I don't ... - Stack Overflow
<https://stackoverflow.com/.../gobject-gtk-gnome-gtk-gl-gtk2-gtk3-i-dont-understand> ▼
Mar 12, 2012 - The short story: If you're programming for GTK 2, use pyGTK. If you're programming for GTK 3, use PyGObject. Should I learn GObject and GLib to work with GTK? ... connections between the minimal polynomial and other concepts in linear algebra?

c - concept of gobject and how can we use it in gstresmer application ...
<https://stackoverflow.com/.../concept-of-gobject-and-how-can-we-use-it-in-gstresmer-...> ▼
Feb 26, 2014 - When learning gstreamer , you may not need to know/ learn about GObject . In or in one basic line GObject , and its lower-level type system, GType, are used by GTK+ and most GNOME libraries to provide: object-oriented ...

GNOME - Wikipedia

What challenges does newcomers face?

Lack of free time

Not knowing where to get help if something goes wrong.

Confidence in ability

Language barriers

Feeling welcome

Distractions

Issues in installation

Overwhelmed by options and not knowing where to start

Connectivity issues



How can we help newcomers overcome them?

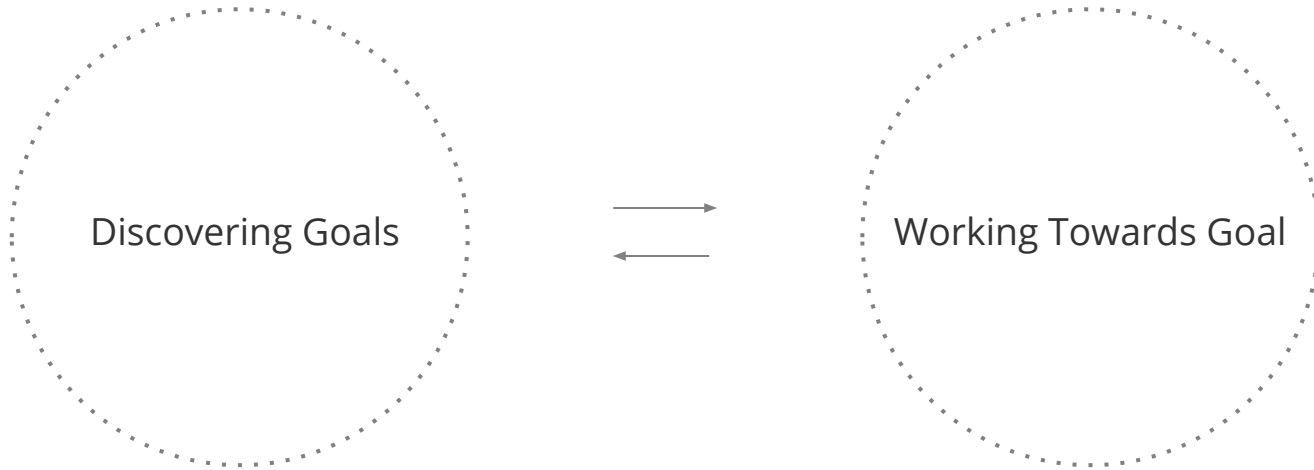
Our own challenges: Limited time, limited resources

The guide is an efficient way to address the challenges through:

- Language
- Visuals
- Chat in #newcomers
- ..other ways?



Goal setting



Thank you!

wiki.gnome.org/Newcomers





Your input!

Using Flatpak and Builder for the newcomer experience

Newcomer's motivation for joining GNOME

Identification of newcomer challenges

Efficient means to help them

Facilitating Goal Setting

Applicability to other guides

Other newcomer discussion topics

