

# GUI Programming in C using GTK

Let's build user interfaces for terminal-noobs



# FAI

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# 01

# GTK

Introduction to GTK and how to  
use it



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# What is GTK

- **GTK** is abbreviation of **GIMP Toolkit** which is a **widget toolkit** for creating a GUI.
- Was once known as **GTK+** but renamed to **GTK** back in 2019.
- Using **GNU Lesser General Public License** (LGPL) as its license

Ref: [GTK Wikipedia](#)

# How to install GTK

- **Windows**

[Windows 10 Gtk Glade Programming Part 37a: Running GTK on Windows 10 using WSL/Ubuntu](#)

[Windows 10 Gtk Glade Programming Part 37b: Running GTK on Windows 10 using Visual C++](#)

- **Linux**

```
sudo apt-get install libgtk-3-0 libgtk-3-dev
```

or in case of so many weird dependency collisions happened

```
sudo aptitude install libgtk-3-0 libgtk-3-dev
```

- **MacOS**

Follow these steps:

1. Install python and git
2. Download [installation script \(gtk-osx-build-setup.sh\)](#) and run it

Or this one thread [How to install gtk on OSX for use with g++/gcc compiler](#) from stackoverflow

# Example Program

```
#include <gtk/gtk.h>

static void activate (GtkApplication* app, gpointer user_data){
    GtkWidget *window;
    window = gtk_application_window_new (app);
    gtk_window_set_title (GTK_WINDOW (window), "Window");
    gtk_window_set_default_size (GTK_WINDOW (window), 200, 200);
    gtk_widget_show_all (window);
}

int main (int argc, char **argv){
    GtkApplication *app;
    int status;
    app = gtk_application_new ("org.gtk.example", G_APPLICATION_FLAGS_NONE);
    g_signal_connect (app, "activate", G_CALLBACK (activate), NULL);
    status = g_application_run (G_APPLICATION (app), argc, argv);
    g_object_unref (app);
    return status;
}
```

# How to compile

```
gcc `pkg-config --cflags gtk+-3.0` -o program.bin program.c `pkg-config --libs gtk+-3.0`
```

This will compile the program using gcc by including all libraries needed for the gtk header files.

More compilation options are available at [Compiling GTK+ Applications: GTK+ 3 Reference Manual](#).



# 02

## Glade

Introduction to Glade and how  
to use it

# How to install Glade

- **Windows**

[How to install Glade 3.22 on Windows 10?](#)

- **Linux**

`sudo apt-get install glade`

or in case of so many weird dependency collisions happened

`sudo aptitude install glade`

- **MacOS**

Follow these steps:

1. Install brew
2. `brew install glade`

# Example Program

```
GtkWidget *window;
GtkWidget *fixed;
GtkWidget *button;
GtkBuilder *builder;

int main(int argc, char *argv[]) {
    gtk_init(&argc, &argv);
    builder = gtk_builder_new_from_file ("glade-test.glade");
    window = GTK_WIDGET(gtk_builder_get_object(builder, "window"));
    g_signal_connect(window, "destroy", G_CALLBACK(gtk_main_quit), NULL);
    gtk_builder_connect_signals(builder, NULL);
    fixed = GTK_WIDGET(gtk_builder_get_object(builder, "fixed"));
    button = GTK_WIDGET(gtk_builder_get_object(builder, "button"));
    gtk_widget_show(window);
    gtk_main();
    return 0;
}

void on_button1_clicked (GtkButton *b) {
    printf("Hello World");
}
```

# Whats the difference ?



Writing bunch of UI setups,  
callback subroutines  
initializations manually.

**Without Glade**



Easier UI creations and  
automatic callback  
subroutines initialization

**With Glade**



# 03

## Sample App

Create a simple sample  
application

# Goals

1

## Get TP data

Get practican't's *Tugas*  
*Pendahuluan* data

2

## Create the GUI

Create a simple GUI for the  
application

3

## Connect data

Connect the TP data  
(backend) to the GUI  
application (frontend)

# 04

## QnA

Ask some questions and i'll try to  
answer them

# Thanks!

Presentation recording will be on youtube that'll be shared in the discord server too

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