



SDL In Practice

Keep It Small and Simple

Setup Environment

&

Write Your First Application

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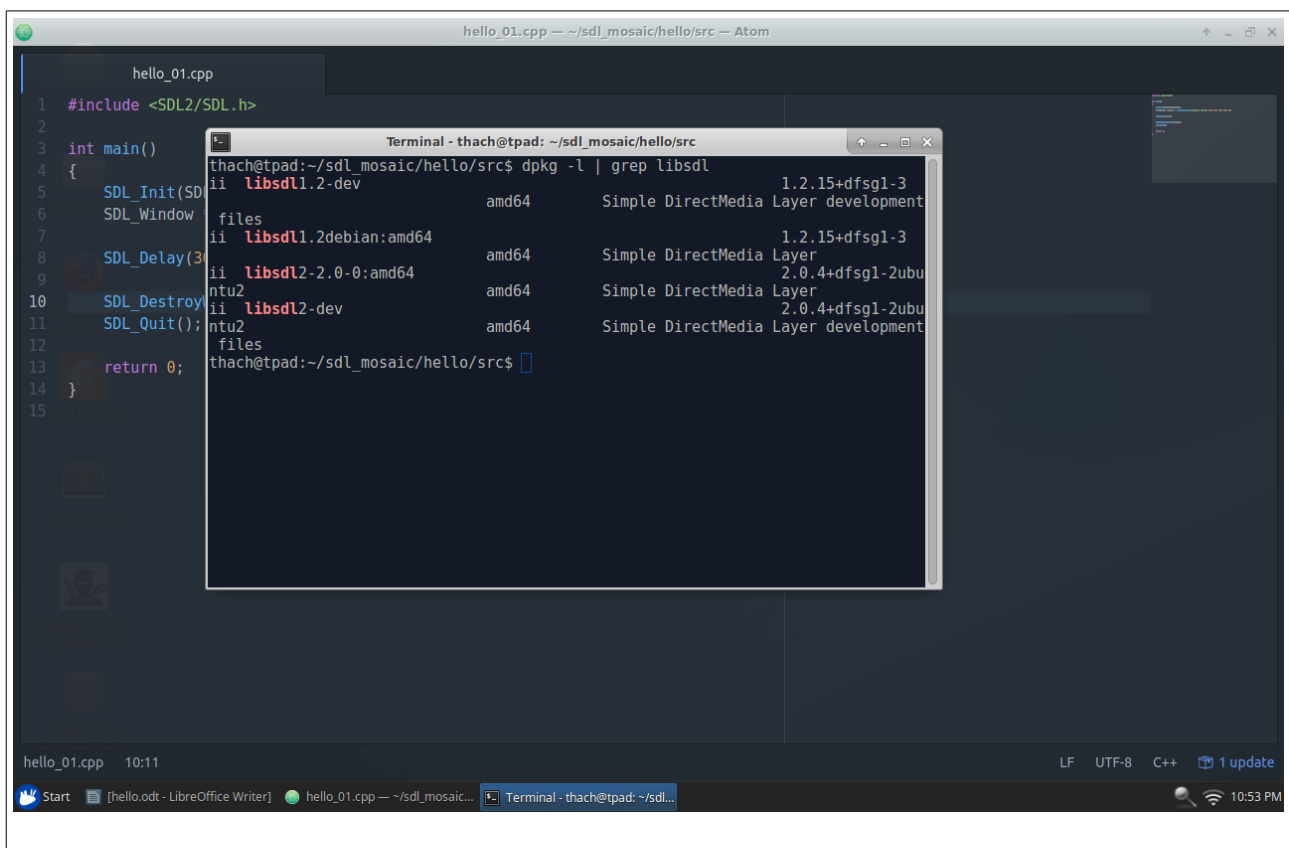
Setup Environment

Install SDL

```
sudo apt-get install libsdl2-dev
```

Check Installation

```
dpkg -l | grep libsdl
```



The screenshot shows a Linux desktop environment. In the background, a code editor (Atom) is open with a file named `hello_01.cpp`. The code in the editor is as follows:

```
1 #include <SDL2/SDL.h>
2
3 int main()
4 {
5     SDL_Init(SDL_INIT_VIDEO);
6     SDL_Window *window = SDL_CreateWindow("Hello SDL", SDL_WINDOWPOS_CENTERED, SDL_WINDOWPOS_CENTERED, 640, 480, SDL_WINDOW_OPENGL);
7     SDL_GLContext glContext = SDL_GL_CreateContext(window);
8     SDL_Delay(3000);
9     SDL_DestroyWindow(window);
10    SDL_Quit();
11    return 0;
12 }
```

In the foreground, a terminal window is open, displaying the output of the command `dpkg -l | grep libsdl`. The output is as follows:

```
thach@tpad:~/sdl_mosaic/hello/src$ dpkg -l | grep libsdl
ii  libsdl1.2-dev                    amd64        Simple DirectMedia Layer development files
ii  libsdl1.2debian:amd64           amd64        Simple DirectMedia Layer
ii  libsdl2-2.0-0:amd64             amd64        Simple DirectMedia Layer
ii  libsdl2-dev                     amd64        Simple DirectMedia Layer
thach@tpad:~/sdl_mosaic/hello/src$
```

The terminal window title is "Terminal - thach@tpad: ~/sdl_mosaic/hello/src". The desktop environment includes a taskbar at the bottom with icons for Start, LibreOffice Writer, and the current application. The system clock shows 10:53 PM.

Header File Location

```
/usr/include/SDL2
```

List header files

```
ls /usr/include/SDL2
```

```
Terminal - thach@tpad: ~/sdl_mosaic/hello/src
thach@tpad:~/sdl_mosaic/hello/src$ ls /usr/include/SDL2
begin_code.h      SDL_egl.h         SDL_joystick.h    SDL_opengles2_glxext.h  SDL_power.h       SDL_system.h      SDL_test_images.h
close_code.h      SDL_endian.h      SDL_keyboard.h    SDL_opengles2_gl2.h     SDL_quit.h        SDL_syswm.h       SDL_test_log.h
SDL_assert.h      SDL_error.h       SDL_keycode.h     SDL_opengles2_gl2platform.h  SDL_rect.h       SDL_test_assert.h  SDL_test_md5.h
SDL_atomic.h      SDL_events.h      SDL_loadso.h      SDL_opengles2.h         SDL_render.h      SDL_test_common.h  SDL_test_random.h
SDL_audio.h       SDL_filesystem.h  SDL_log.h         SDL_opengles2_khrplatform.h  SDL_revision.h   SDL_test_compare.h  SDL_thread.h
SDL_bits.h        SDL_gamecontroller.h  SDL_main.h       SDL_opengles.h         SDL_rwops.h       SDL_test_crc32.h   SDL_timer.h
SDL_blendmode.h   SDL_gesture.h     SDL_messagebox.h  SDL_opengl_glxext.h     SDL_scancode.h   SDL_test_font.h    SDL_touch.h
SDL_clipboard.h   SDL.h             SDL_mouse.h       SDL_opengl.h           SDL_shape.h       SDL_test_fuzzer.h  SDL_types.h
SDL_config.h      SDL_haptic.h      SDL_mutex.h       SDL_pixels.h           SDL_stdinc.h      SDL_test_harness.h  SDL_version.h
SDL_cpuinfo.h     SDL_hints.h       SDL_name.h        SDL_platform.h         SDL_surface.h     SDL_test.h         SDL_video.h
thach@tpad:~/sdl_mosaic/hello/src$
```

Start | hello.odt - LibreOffice Writer | hello_01.cpp — ~/sdl_mosaic... | Terminal - thach@tpad: ~/sdl... | 10:56 PM

Hello World

hello_01.cpp

```
#include <SDL2/SDL.h>

int main()
{
    SDL_Init(SDL_INIT_VIDEO);
    SDL_Window *window = SDL_CreateWindow("Hello World", 100, 100, 320, 320, 0);

    SDL_Delay(3000);

    SDL_DestroyWindow(window);
    SDL_Quit();

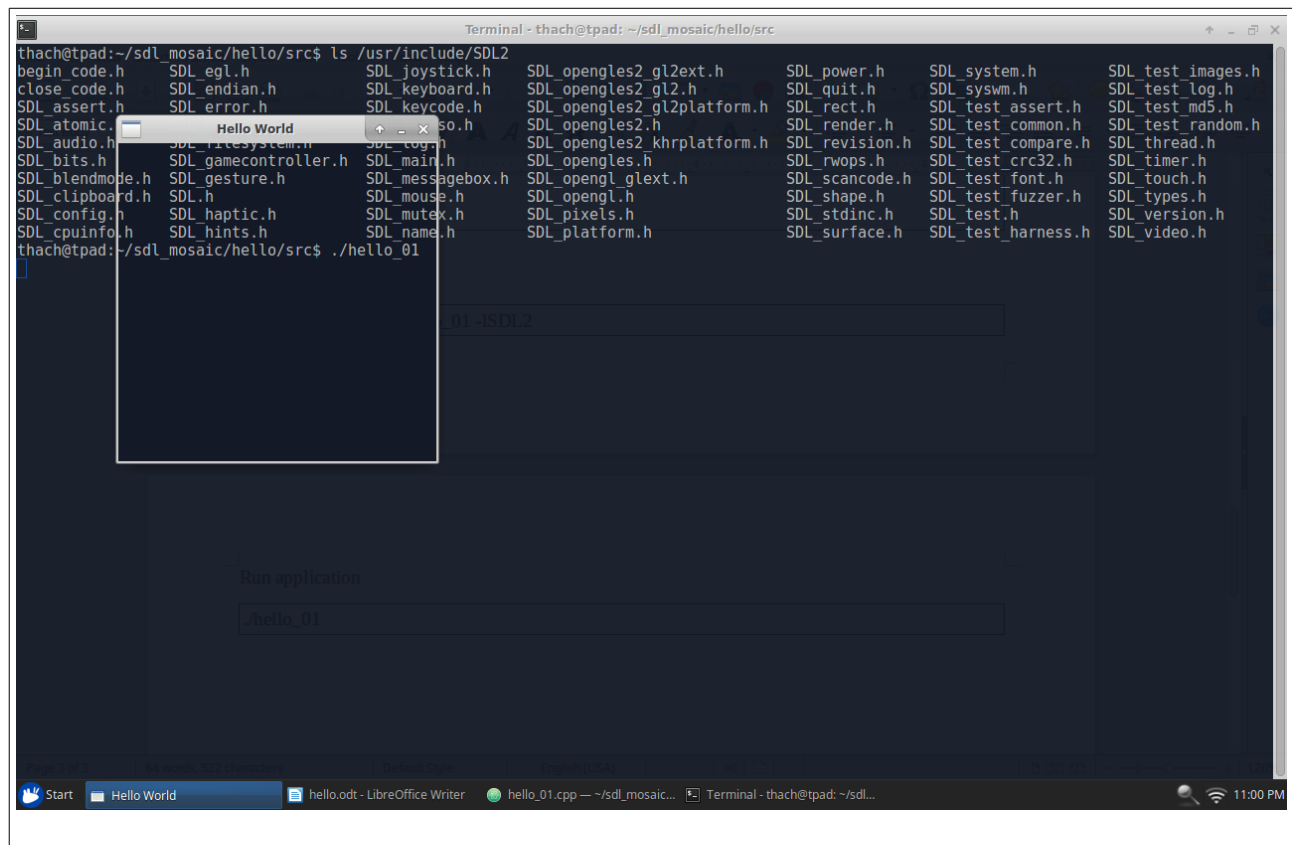
    return 0;
}
```

Compile

```
g++ hello_01.cpp -o hello_01 -lSDL2
```

Run application

```
./hello_01
```



Hello World In Action

hello_02.cpp

```
#include <SDL2/SDL.h>

int main()
{
    SDL_Init(SDL_INIT_VIDEO);

    SDL_Window *window = SDL_CreateWindow("Hello World", 100, 100, 320, 320, 0);
    SDL_Renderer *renderer = SDL_CreateRenderer(window, -1, 0);

    SDL_SetRenderDrawColor(renderer, 0, 255, 0, 255);
    SDL_RenderClear(renderer);
    SDL_RenderPresent(renderer);

    bool isRunning = true;
    SDL_Event event;
    while (isRunning)
    {
        SDL_PollEvent(&event);

        if (event.type == SDL_QUIT)
        {
            isRunning = false;
        }
    }

    SDL_DestroyWindow(window);
    SDL_Quit();

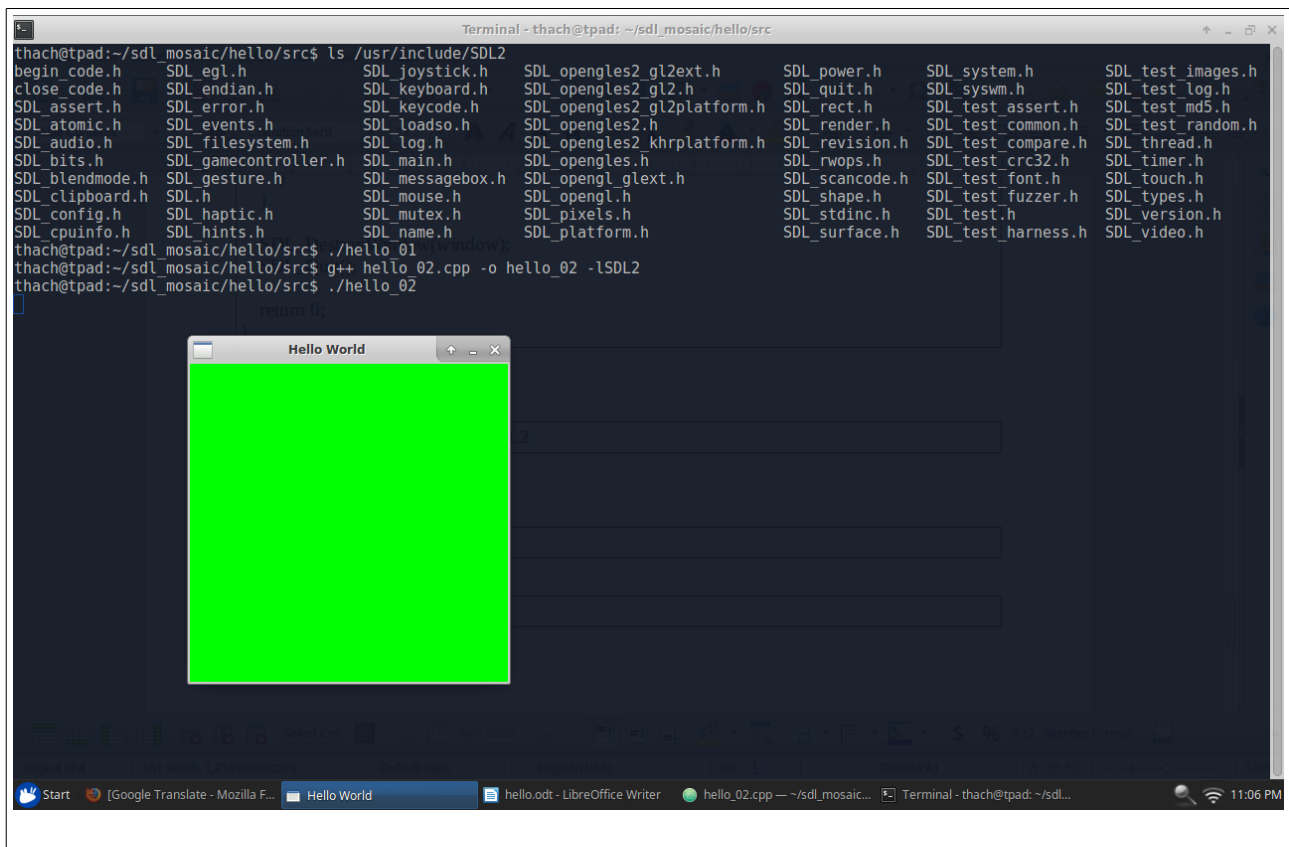
    return 0;
}
```

Compile

```
g++ hello_02.cpp -o hello_02 -lSDL2
```

Run application

```
./hello_02
```



Make some change.

Change window title, position, size

```
SDL_Window *window = SDL_CreateWindow("Hi SDL", 50, 50, 200, 200, 0);
```

Change background color

```
SDL_SetRenderDrawColor(renderer, 255, 0, 0, 255);
```