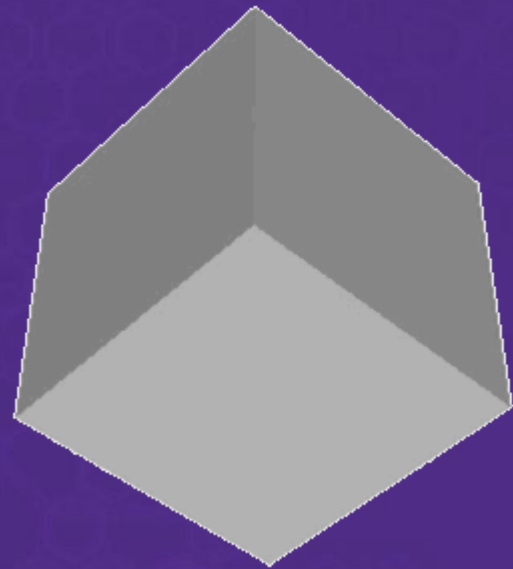


Developing Graphics Frameworks with Java and OpenGL

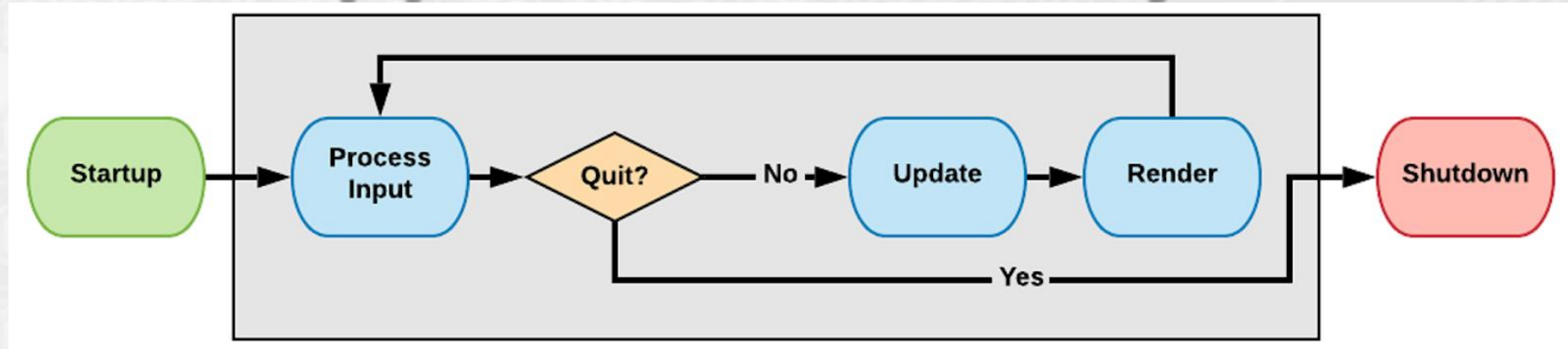


Part 02: Windows

LWJGL

- LWJGL = LightWeight Java Gaming Library
- open source library, enables cross-platform, low-level access to APIs such as OpenGL, OpenAL, and OpenCL (for graphics, audio, parallel computing applications)
- includes GLFW = Graphics Library FrameWork;
will use to create a window that displays images from GPU

Application Life Cycle



- Startup: create objects, initialize values, load external files
- Main Loop: repeat 60 times per second
 - Process Input: Check for user actions, such as pressing keys
 - Update: Change values of variables and objects
 - Render: Display graphics on the screen.
- Shutdown: stop checking for user input, close windows

Project Organization

- project folder needs directory for LWJGL libraries (JAR files)
- organize framework code into packages / directories;
test / example classes in root directory
- source code available on [GitHub.com](https://github.com)

The (abstract) Base class

- `public Base()`
 - `public void run()`
 - `public void startup()`
 - `public abstract void initialize()`
 - `public abstract void update()`
 - `public void shutdown()`
-
- Write class **Test_Window** that extends **Base**