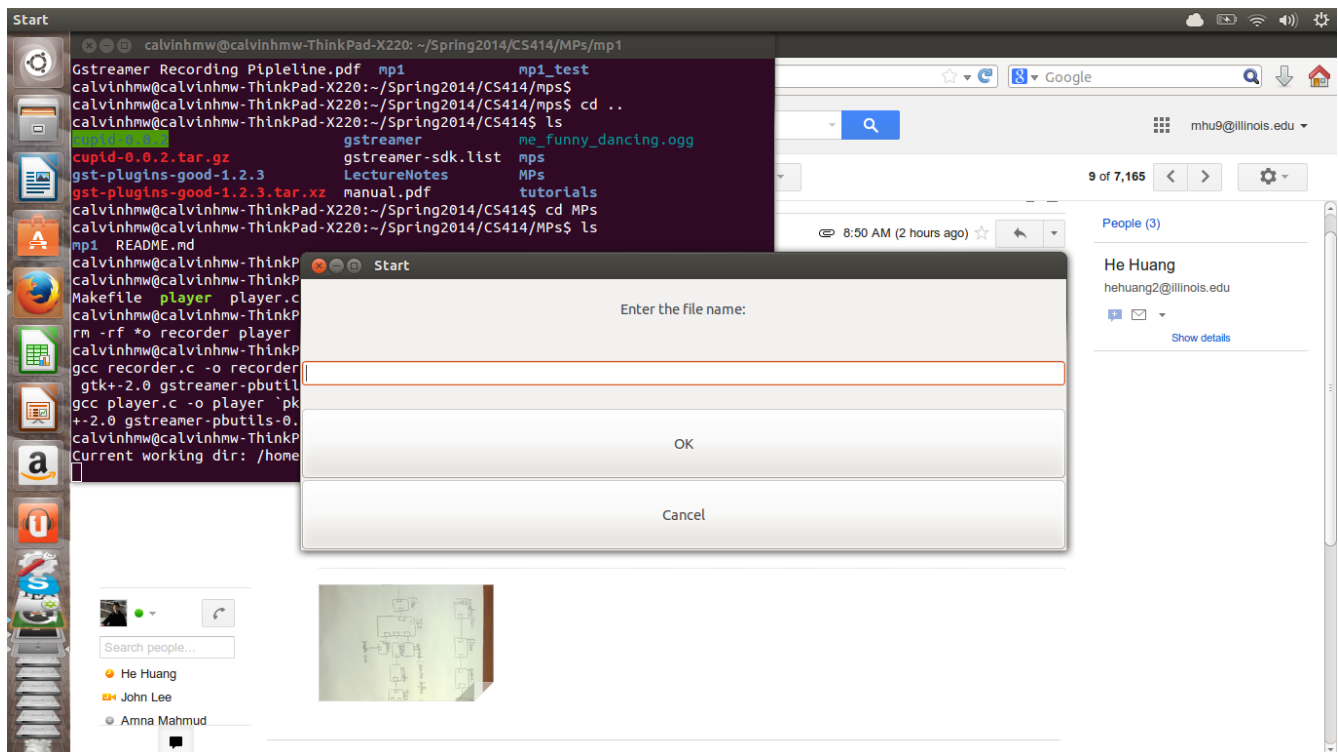


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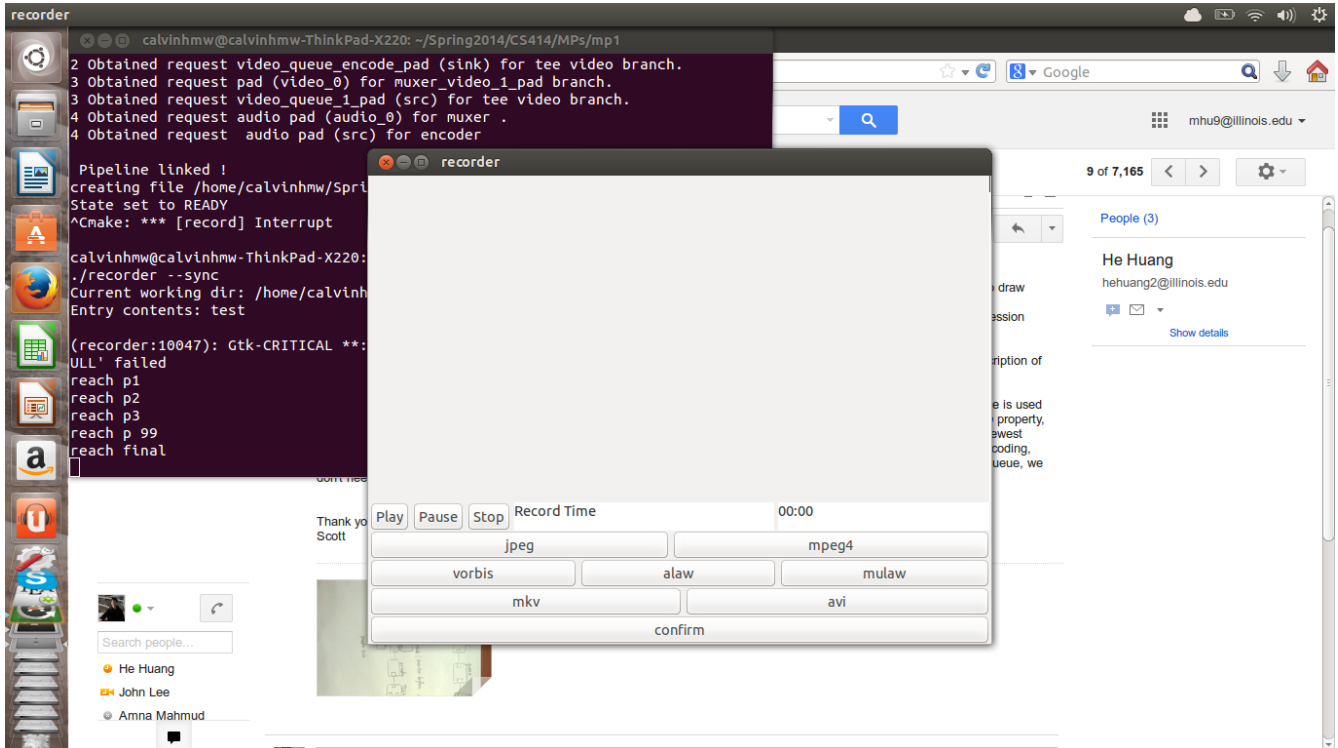
User Manual

Recorder

- Run `<make>` to compile the recorder.
- Run `<make record>` to execute the recorder.
- Enter the file name and hit OK to start recording:

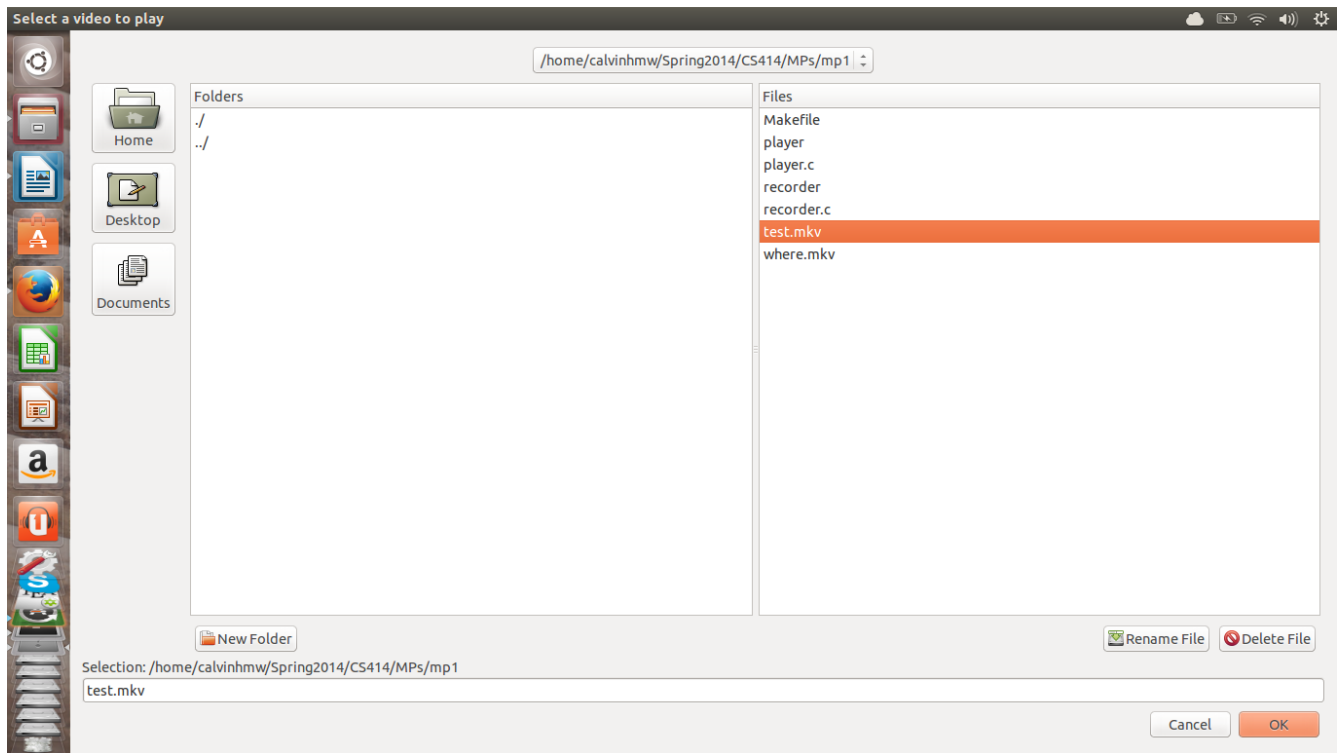


- Select audio and video compression techniques and hit “Play” to record:

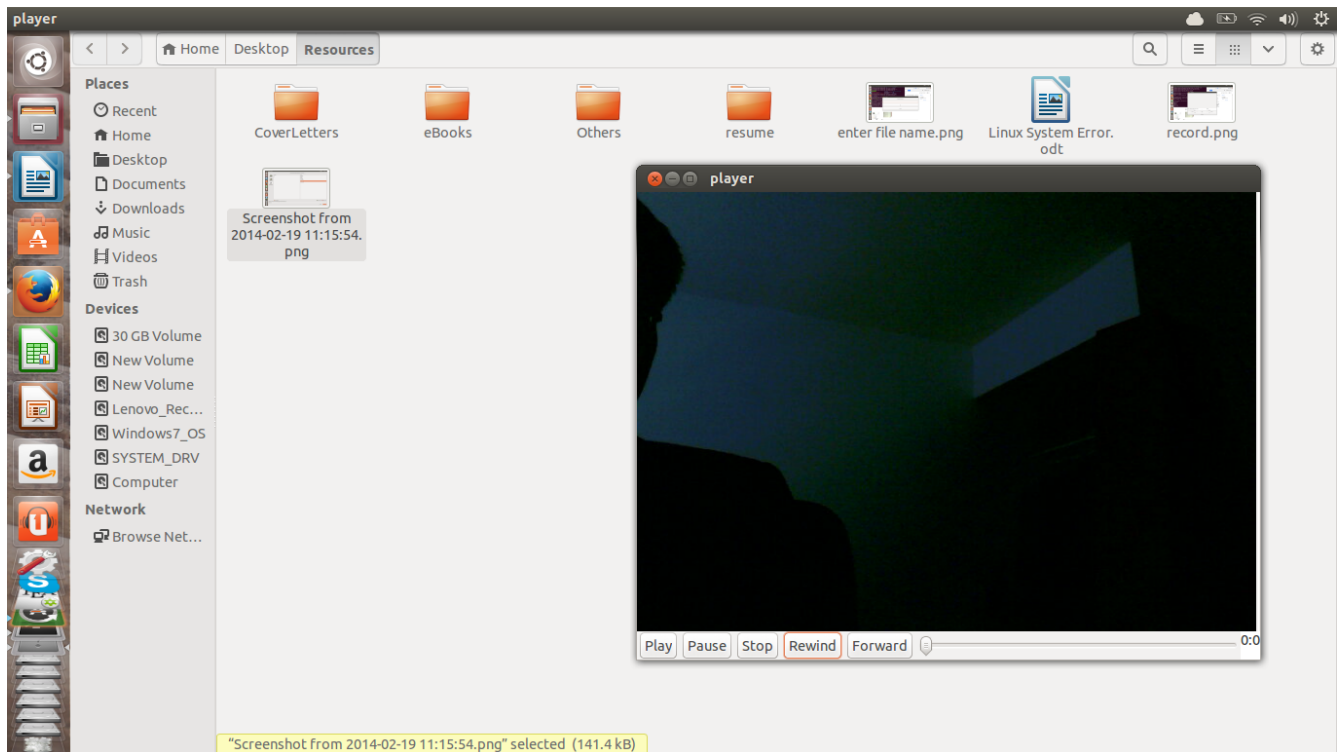


Player

- Run `<make>` to compile the recorder.
- Run `<make record>` to execute the recorder.
- Select the file you want to play and hit OK:

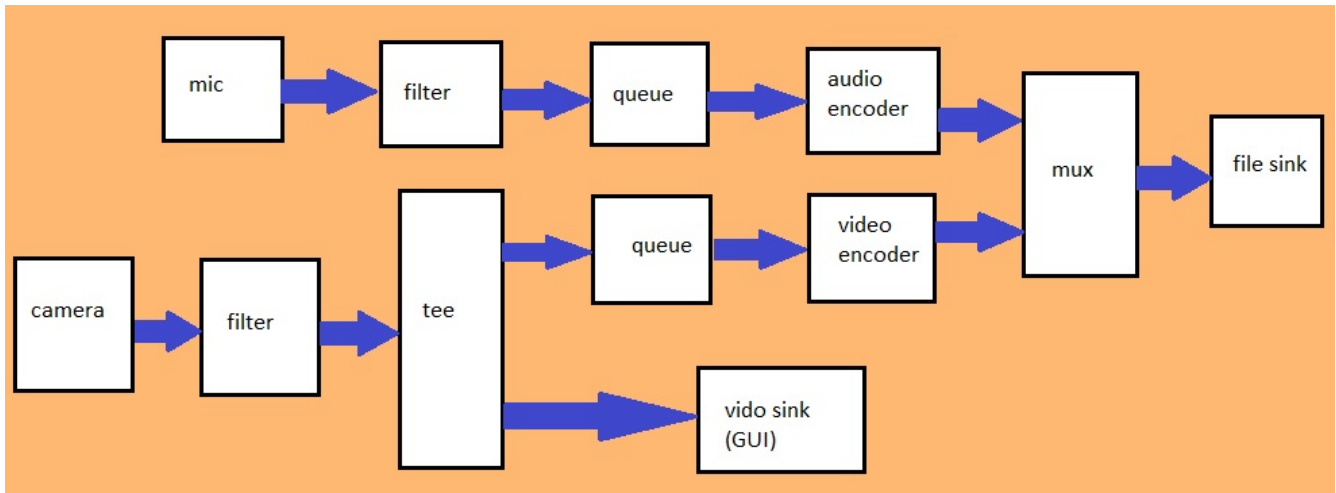


- Hit “Forward” to fast-forward (5s faster) and “Rewind” to rewind the video.
- Hit “Pause”/“stop” to pause/stop the video.

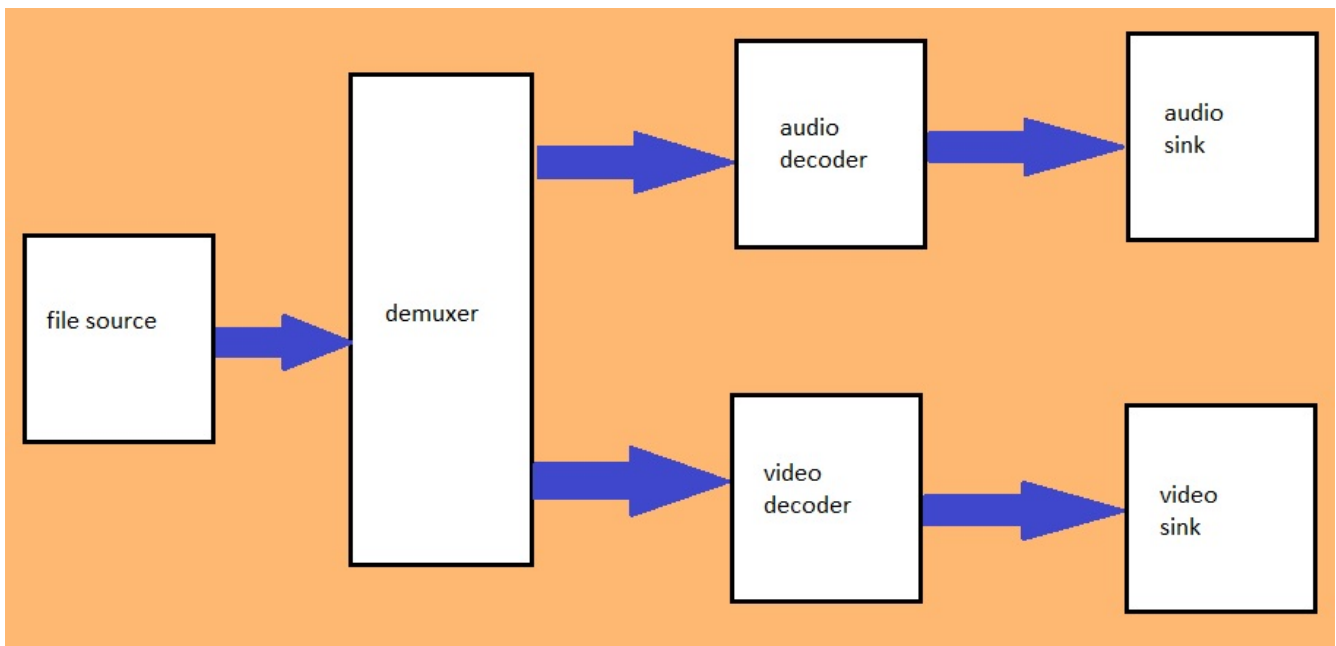


Development Manual

Recorder Flow



Player Flow



Monitor

For the system monitor part two appsink elements are used. One is used as the monitor before encoding, and the other one is used as the monitor after encoding. `Gst_app_sink_set_max_buffers()` is used to set the max buffer of appsink and set the drop property such that the buffer of appsink will not be too large. `Gst_app_sink_pull_sample()` is called every 5 seconds to pull the newest `GstSample`, and `gst_sample_get_info()` is called to analyze the stream sample before encoding and after encoding, including time stamp, compression ratio and compressed frame size. The appsink element has its own internal queue so it is not necessary to add queue elements before each appsink element.

GUI

The GUI is implemented with GTK+, using callback functions to handle each button. Buttons are organized into 4 bars. The first bar shows the record timer and playback buttons which manipulate the pipeline state. The next 3 bars contains buttons to select video, audio, and mux format. Those callback functions set global flags which the main function will use to choose which elements to include in the pipeline.