

#### Project Description:

The goal of this project is to develop a custom GStreamer plugin that adds static shapes, such as rectangles, triangles, squares (optional: circles), to incoming RAW video frames. The plugin will support drawing shapes in three different colors: red, blue, and green. The resulting modified frames will then be passed to the next element in the GStreamer pipeline. The input video format for the plugin will be video/x-raw with the following specifications: format=NV12, resolutions=720p/480p, and framerate=24.

To test the functionality of the plugin, a sample pipeline can be constructed using elements such as videotestsrc (as a source), videoconvert (for format conversion if necessary), your\_plugin (the custom plugin being developed), and filesink to save the modified video frames into a file. The saved raw video file can be verified using a media player such as vooya.

By implementing above plugin, you will gain experience in working with GStreamer, understanding video frame manipulation, developing custom plugins, and integrating them into a pipeline.

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Plugin name: You can provide any suitable name to plugin. e.g. drawshapes

#### Plugin properties

1. shape : circle, rectangle, square, or triangle
2. color : red, green or blue
3. coordinates : x,y coordinates of the screen, where the shape would be drawn. it is a center point/coordinate for the shape, around which, the given shape will be drawn.
4. shape\_size : small, medium or large (in this the size will be hardcoded in the plugin wrt resolution). Developer can be choose this property value in pixels also, but in that case need to ask size on basis of shape, e.g. for rectangle h and w both required, For circle, square and triangle - radius...
5. any other specific properties that developer wants to implement

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#### Expected output:

