Project: Function Generator with laser waveform projection
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This project will be comprised of two major parts. The first part, the function generator, will be able to generate square waves, triangle waves, and sine waves. Using two 18-bit DACs, we will implement dual channel outputs with independent waveforms and variable phase and duty cycle shifting.

The second part, the waveform projection, will consist of several sensors and two galvanometers. The galvanometers will create a projection of the current waveform on a surface using a low power red laser. The two sensors, a three-axis gyroscope and a three-axis accelerometer, will be used to determine rotation and movement. The sensor input will be used to correct for changes in projection angle to maintain the image in a single spot on the viewing surface. For example, if the rig is tilted upwards and towards the right, the projection will compensate by drawing a lower and more elongated image, maintaining the image's original appearance on the surface.