**Problem Statement**

Imagine you are working as a data scientist at a home electronics company which manufactures state of the art **smart televisions**. You want to develop a cool feature in the smart-TV that can **recognise five different gestures** performed by the user which will help users control the TV without using a remote.

The gestures are continuously monitored by the webcam mounted on the TV. Each gesture corresponds to a specific command:

* Thumbs up:  Increase the volume
* Thumbs down: Decrease the volume
* Left swipe: 'Jump' backwards 10 seconds
* Right swipe: 'Jump' forward 10 seconds
* Stop: Pause the movie

Each video is a sequence of 30 frames (or images).

## **Understanding the Dataset**

The training data consists of a few hundred videos categorized into one of the five classes. Each video (typically 2-3 seconds long) is divided into a **sequence of 30 frames(images)**. These videos have been recorded by various people performing one of the five gestures in front of a webcam - similar to what the smart TV will use.

The data is in a zip file. The zip file contains a 'train' and a 'val' folder with two CSV files for the two folders. These folders are in turn divided into subfolders where each subfolder represents a video of a particular gesture. Each subfolder, i.e. a video, contains 30 frames (or images). Note that all images in a particular video subfolder have the same dimensions but different videos may have different dimensions. Specifically, videos have two types of dimensions - either 360x360 or 120x160 (depending on the webcam used to record the videos). Hence, you will need to do some pre-processing to standardise the videos.

Each row of the CSV file represents one video and contains three main pieces of information - the name of the subfolder containing the 30 images of the video, the name of the gesture and the numeric label (between 0-4) of the video.

Your task is to train a model on the 'train' folder which performs well on the 'val' folder as well (as usually done in ML projects).