

## 1. Defining Functions:

- `write_bounding_boxes_to_csv(file_path, bounding_boxes)` : This function takes a file path and a list of bounding boxes as input and writes the bounding box information to a CSV file.
- `find_max_votes(hsv_image, hough_circles, lower_threshold, upper_threshold)` : This function takes an HSV image, Hough circles, and lower and upper HSV thresholds as input. It iterates through the detected circles and finds the region with the highest number of votes within the given HSV range. It returns the maximum number of votes, the region of interest (ROI), ROI center coordinates, and ROI radius.
- `ball_tracking_traditional(lower_threshold, upper_threshold, src_path, csv_out_path, video_out_path)` : This is the main function that performs the ball tracking using traditional computer vision techniques. It takes lower and upper HSV thresholds, source video path, CSV output path, and video output path as input. It reads the video frames, applies image processing techniques like blurring, thresholding, and contour detection to detect the ball, and tracks the ball using various methods, including Hough circles and HSV range filtering. It also writes the bounding box information to a CSV file and saves the annotated video.

2. `main()` Function: This function is called when the script is run as the main program. It defines the input paths, lower and upper HSV thresholds, and calls the `ball_tracking_traditional()` function with the provided parameters.