9. **Object Tracking in Video Using Color and Grayscale Histograms**
    - ➢ **Display the first frame of the video and allow the user to mark the object he wants to track with a rectangular frame.**
    - ➢ **Calculate the color histogram of the object as explained here: https://en.wikipedia.org/wiki/Color_histogram. You can choose the number of colors (histogram bins). The color histogram of the marked object is called the template histogram.**
    - ➢ **Now in the next frame define a search area around the center of the object and in this area look for a rectangular region that has the most similar color histogram. Mark the closest matching region you find. Update the template histogram to be the one of the closest match.**
    - ➢ **Repeat the previous step in the next video frames.**
    - ➢ **Now do the same process using a histogram of grayscale values. Implement it yourself. Do not use an already implemented MATLAB tracker.**
    - ➢ **Run both algorithms on at least 4 different videos and show a visual comparison of results.**
    - ➢ **Draw your conclusions: when is the color histogram based method superior and when does the grayscale histogram based method work better? Also when do both methods provide low performance?**