Face Tracking using SURF Matching

To run the program open the file in MATLAB (preferred version 2013b and above)

The function takes real time webcam video input and detects face in the image by using conventional Viola Jones algorithm and tracking the face even under occluded and tilted conditions which the Viola Jones algorithm can't provide.

To provide a proper track of sequence the face detection is done after every 17 counts of the program loop and is printed on the terminal so that the user can test out viola jones under the occluded and tilted conditions.

The function works by taking snapshots or a image sequence and passing in to a face detector so as to detect a face in the image(works with 1 face/ can be programmed to track multiple faces by running through an array of the detected face co-ordinates). Then the returned locations or BBoxes are fed to the SURF detection part. The extracted SURF features are then matched with the scene data or the real time input to lock on to the face.

The output is provided in a window with the current updated face and the scene where the face is being tracked. The matched SURF features are then plotted to show resemblence.