Calculating the Difference between Two Consecutive Video Frames

Goal:

Highlight moving objects from a video and save the resulting video to disk.

Idea:

1. Load input video “park.avi” (in the folder “video”)
2. Obtain two consecutive frames
3. Calculate the pixel intensity difference between the two consecutive frames.
4. Perform thresholding on the difference image to get areas of movement in binary format
5. Save teh resulting frame in a new video (eg “result.avi”)
6. Repeat the step2-step5 until the last frame of the input video

Hints:

- VideoCapture: the class for video capturing from video files, image sequences or cameras.
  - Open the input video.
  - Obtain the properties of hte video, such as teh fram size, the number of frames, etc.
  - Obtain the index of the frame (0-based index).
  - Obtain the data of each frame.

- VideoWriter: the video writer class.
  - Create the output video
  - Save processed framse into the output video.

- Thresholding:
  - Much of your code from last lab is reuseable here.
  - The threshold value from last lab is used here.

Helpful Methods:

VideoCapture::VideoCapture (const String & filename)
bool VideoCapture::isOpen()
double VideoCapture::get(int propld)
bool VideoCapture::set(int propld, double value)
operator>>(Mat &image)
VideoWriter::VideoWriter(const String &filename, int fourcc, double fps, Size frameSize, bool isColor - true)
operator<<(const Mat &image)
Void VideoWrite::write(const Mat &image)

Examples:

Screen shots from the output video