SYSTEM/SOFTWARE REQUIREMENTS

-Create website for software where user can download software setup files for software.
-User should be able to simply open setup file and then be told that software installed successfully. No other interaction involved.
-Software needs to use a webcam (preferably USB for simplicity) to do all motion detection (decide when a trespasser is present), capturing (picture of motion detected), and recording (front start of motion detection to end).
-After install, the system shall provide the customer with a user interface.
-Webcam plugged into PC running Windows Vista needs to have a compatible driver available for Windows Vista and it needs to be installed by user to become functional.
-The system shall be able to access video from a USB connected webcam.
-The system shall be able to run continuously, even when user has locked the PC.
-Program will run from an executable.

EFFECTS OF MOTION DETECTION

-User needs to be able to see a GUI list containing a list of all previous times that software detected motion. Included
-The GUI list needs to provide information including date, time, flag level, length of recording, and URL to uploaded file. Included
-Dropbox will be web hosting service of choice as it is written in Python so it will be compatible, has a very complete API, big development base, fast and reliable service we can count on. Included
-When software uploads footage to Dropbox, system needs to receive a URL link to the video footage to send to the user so they may be able to view it. Included
-User is able to delete an event from system history. This includes uploaded video and entry in log file. Included
-system shall be able to record video for 8 minutes when motion that exceeds user defined limits is detected. Included
-The system shall be able to store the URL of the page hosting the video, date and time event of motion was detected, and alert level. Included
-The system shall define risk level as low, medium, or high, based on size and length of motion captured. Included (But needs clarification)
-The system shall allow the user to check the log of events since the last user reset. Included
-The system shall allow the user to delete individual events or hard reset the log of events. Inclu.
-When motion is detected, system saves each image containing disruption.
-Can convert the list of images into a video.
-Once motion over the threshold is detected, the system shall start to record the events and continue to do so until the triggering event wanes.
-The system shall record while motion continues, and chop and send a video once a user-specified time limit is reached, and then keep recording to the same limit. User shall specify how many times this cycle is to repeat while motion is occurring.

BASE IMAGE

All requirements below has to do with how the software is going to detect motion. We (primarily Taylor) are still running tests on this to see what method is best and how it is going to be done. So not sure if they are really “requirements” yet.

-The system shall automatically take an image at the beginning of each day to be used as a base image.
The system shall automatically update the base image every 10 to 20 minutes to cope with changes in lighting.
-The system shall not update the base image if it has detected motion.
-If the system detects motion, the base image will not be updated until the motion has stopped.
-The system shall allow the user to manually update the base image if the user knows the surroundings have changed.
-When user wants to manually reposition the webcam into a different position, they need to have
a button to click that allows them to do that and not have to worry about the system recording video of them just moving the camera around. So basically, it pauses the system monitoring.
-Stores the initial image as a constant upon start-up.
-Determines if motion is detected by comparing pixel difference between constant and current image.
-The base image of the system shall be updated every 10 minutes to account for daylight shifts.

GUI

-The system shall provide a help menu to the user covering all details the user needs to configure a feature.
-The system will provide a way in which the user to return the main screen.
-Software needs a GUI interface to simplify interaction with software.
-Software needs to have 5 main buttons on the GUI interface to separate the different settings menus for the software to make it organized.
-User needs to have a button on software they can click to receive help for software. A menu will come up showing user the software documentation along with links to the online website.
-The system shall present a live stream of video for position assessment in the GUI.
-The system shall have options for configuring motion capture settings, editing user emails, and checking a log of events.
-Shall provide a way to start recording (start/stop)
-Shall provide a way to update ‘base’ image.

-Threshold meter ranging from 0-10(per 10% of pixels changed) for disruption in picture.
-Threshold meter ranging from 0-10(per 10% of 20 minutes) for maximum time of recording.
-Can stop motion detection at any time.

MOTION SETTINGS

-The system shall allow the user to set the tolerance of the size of the motion (leaf blowing vs a human) from 0 (no tolerance) to 10 (high tolerance). Included.
-The system shall allow the user to set the tolerance of the duration of the motion in seconds (up to 20 minutes). Included
-The system shall allow the user to select “dead areas” where motion is to be ignored.
-User may be able to change the software detection sensitivity at any time from the GUI interface. (accessible from “Video Settings” menu when they click “Video Settings” on GUI)
-The system shall allow the user to set a ‘tolerance level’ for motion capture, a specific percentage level of image change within the video that would trigger an email alert.
-The system shall allow the user to set how long video is to be recorded upon motion detection.
-Threshold meter ranging from 0-10(per 10% of pixels changed) for disruption in picture.
-Threshold meter ranging from 0-10(per 10% of an hour) for maximum time of recording.
-The system will allow the user to select a ‘time limit’ on recordings before customer is alerted.
-The system shall allow for the user to specify how many videos are to be successively recorded with the designated time limit.

EMAIL

-Should allow you to enter an email address, or many
-The system can store multiple email addresses separated by commas.
-Send email to stored emails addresses if motion has been detected.
-Email will contain date, time, alert level, url to recorded video, photo of detection, length of video.
-Alert level is based on amount of time spent recording. (and/or the range of motion. If half screen changed vs. a quarter of screen)
-The system shall allow the user to open email settings (accessible from “Email Settings” menu when they click “Email Settings” on GUI), and will display a list of current emails receiving alerts along with ability to edit, add, delete email addresses.
-The system shall allow users to add emails by typing in additions when prompted.
-Once footage has been uploaded to Dropbox, photo has been captured, and motion details (all described above) needs to be emailed to all users listed in the system.
-The email settings the user is allowed to alter are: primary email, additional emails, to which emails get sent, and what information is sent.
-The help for email configuration shall outline the process of adding an email address.