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Contents

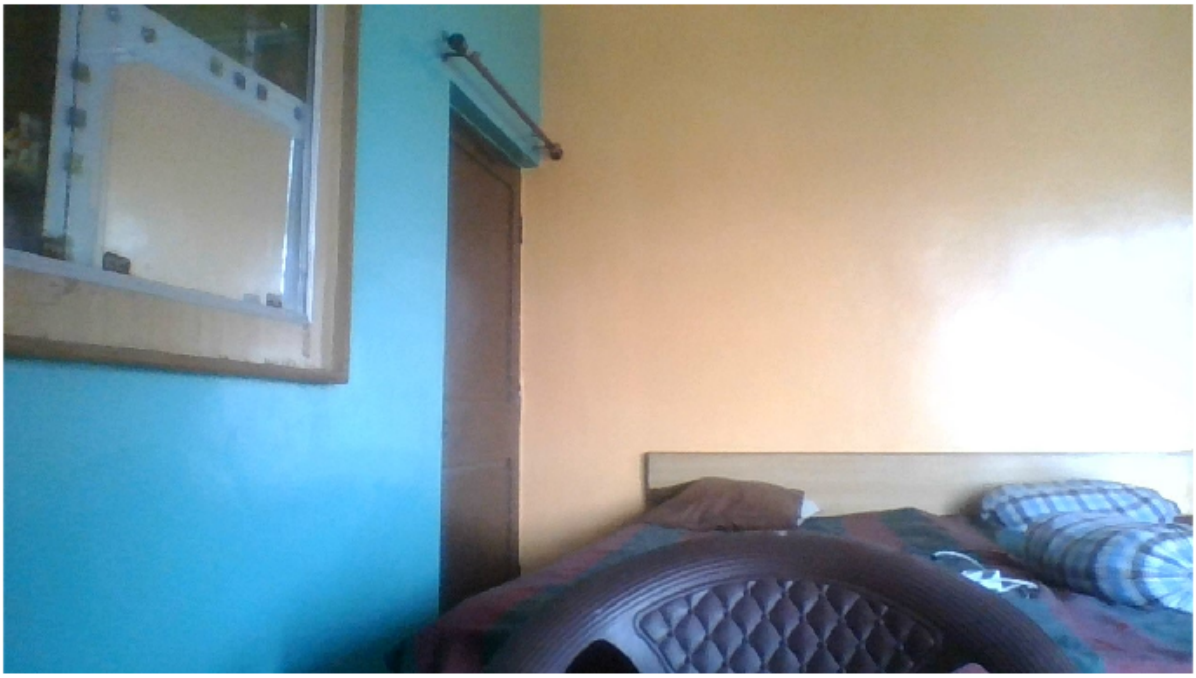
Read in Images

```
img1 = imread('TestImage1.jpg');
img2 = imread('TestImage2.jpg');
```

Display Color Images

```
figure
imshow(img1)
figure
imshow(img2)
```

```
Warning: Image is too big to fit on screen; displaying at 67%
Warning: Image is too big to fit on screen; displaying at 67%
```

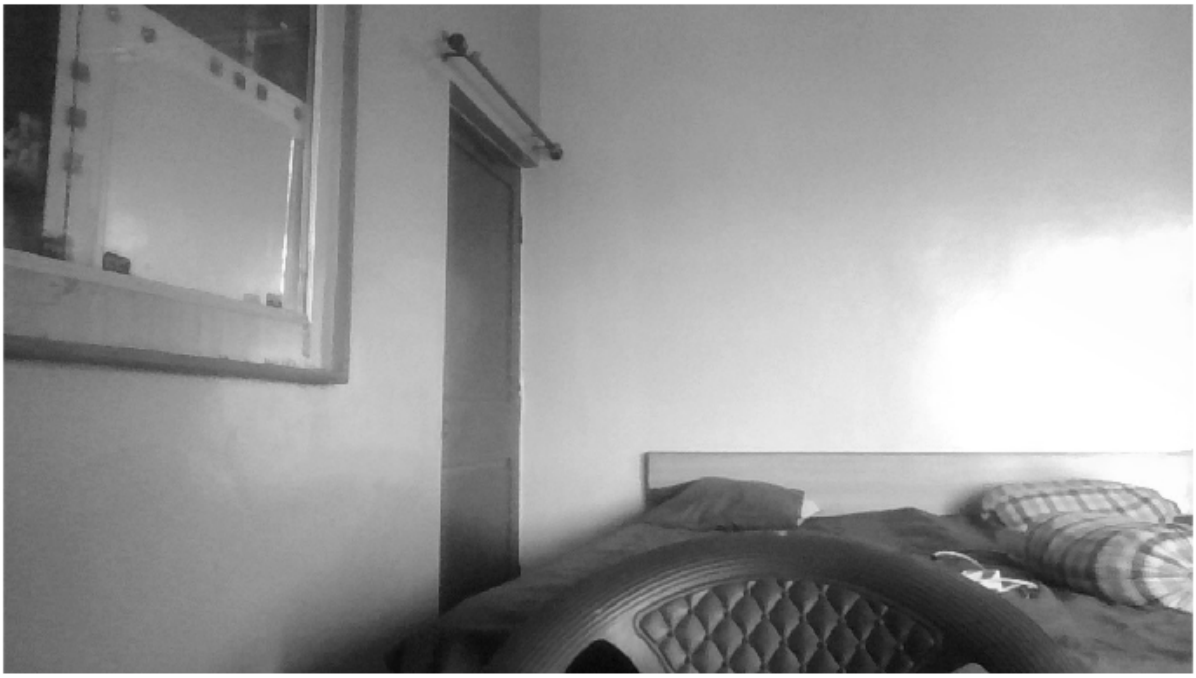
Convert Images to Black and White

```
img1BW = rgb2gray(img1);
img2BW = rgb2gray(img2);
```

Display Black and White Images

```
figure
imshow(img1BW)
figure
imshow(img2BW)
```

```
Warning: Image is too big to fit on screen; displaying at 67%
Warning: Image is too big to fit on screen; displaying at 67%
```

Subtract Images

```
imgDiff = abs(img1BW - img2BW);
% imDiff = imsubtract(img1BW - img2BW);
figure
imshow(imgDiff)
```

```
Warning: Image is too big to fit on screen; displaying at 67%
```

Find Maximium Location of Difference

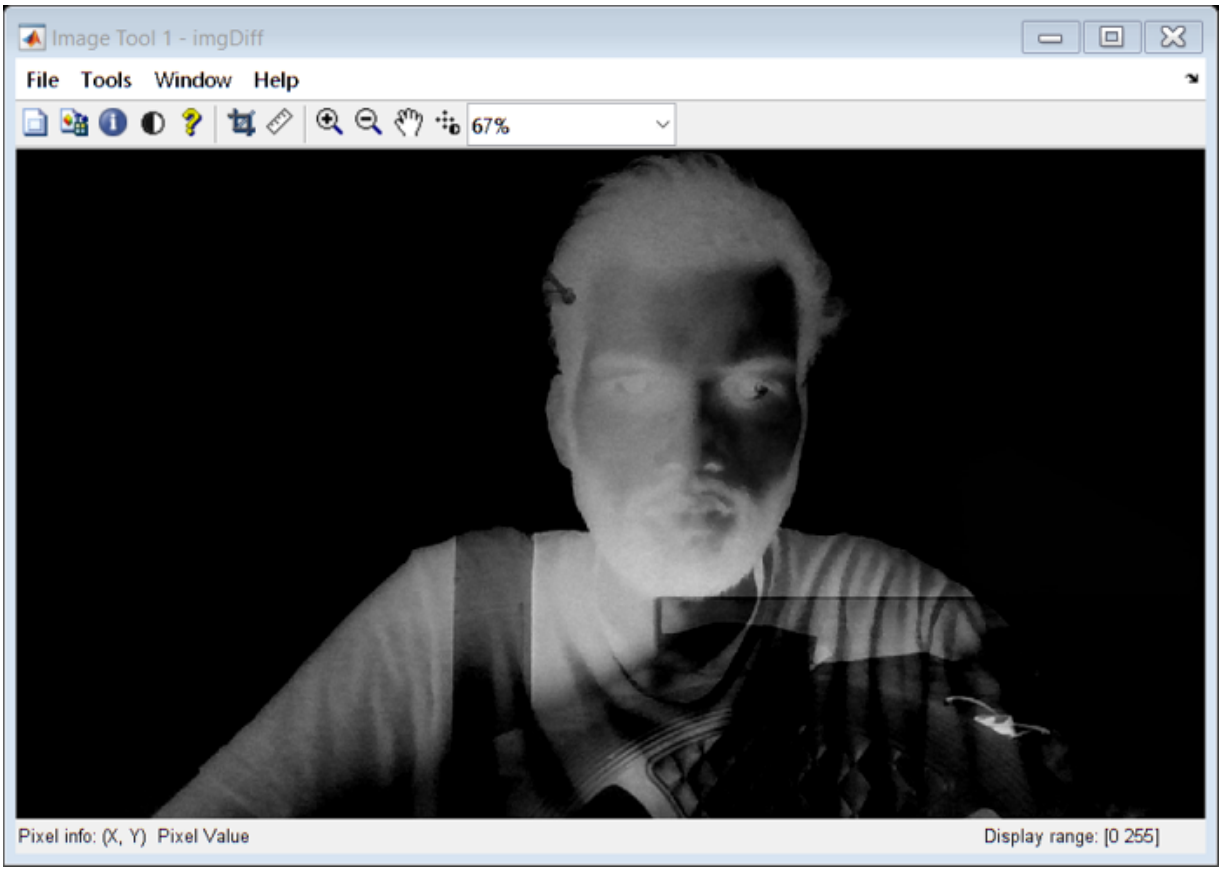
```
maxDiff = max(max(imgDiff));
[iRow,iCol] = find(imgDiff == maxDiff);
[m,n] = size(imgDiff);

imshow(imgDiff)
hold on
plot(iCol,iRow,'r*')
```

```
Warning: Image is too big to fit on screen; displaying at 67%
```


Use imtool to Determine Threshold and Length

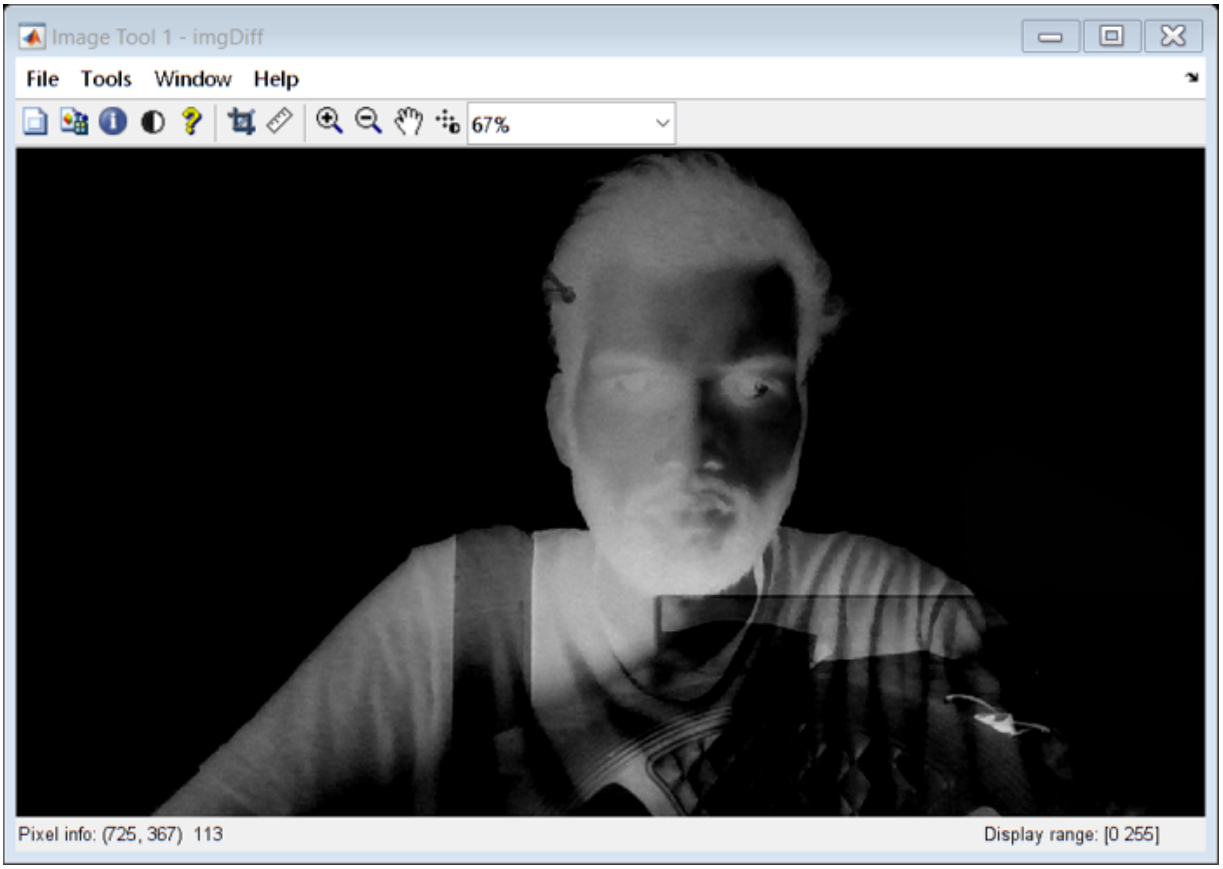
```
imtool(imgDiff)
```

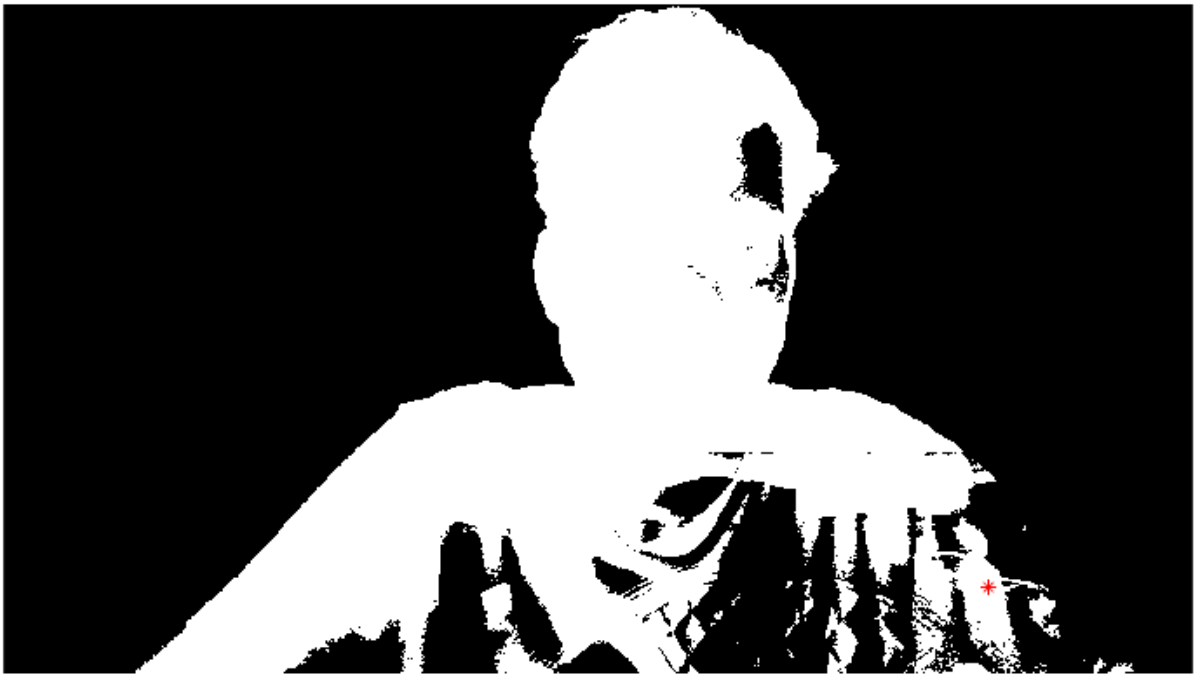


Threshhold Image

```
imgThresh = imgDiff > 8;
figure
imshow(imgThresh)
hold on
plot(iCol,iRow,'r*')
hold off
```

```
Warning: Image is too big to fit on screen; displaying at 67%
```

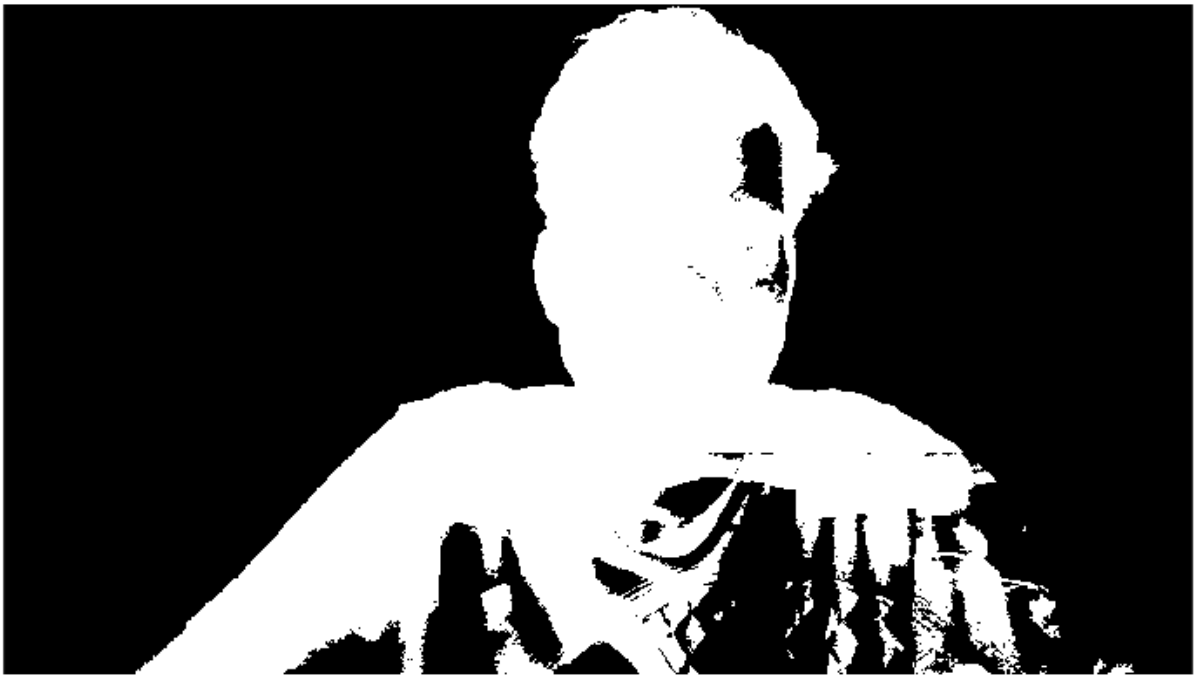





Fill in Regions

```
imgFilled = bwareaopen(imgThresh, 15);
figure
imshow(imgFilled)
```

```
Warning: Image is too big to fit on screen; displaying at 67%
```



Overlay Onto Original Image

Utility from File Exchange

```
imgBoth = imoverlay(img2,imgFilled,[1 0 0]);
figure
imshow(imgBoth)
```

```
Warning: Image is too big to fit on screen; displaying at 67%
```


Only Care About Things Large Than 80

```
imageStats = regionprops(imgFilled, 'MajorAxisLength');

imgLengths = [imageStats.MajorAxisLength];
idx = imgLengths > 80;
imageStatsFinal = imageStats(idx);
disp(imageStatsFinal)
```

```
    MajorAxisLength: 865.8973
```

Determine if Change is Significant

```
if isempty(imageStatsFinal)
    disp('Nothing Different Here')
else
    disp('Something is Here!')
end
```

```
Something is Here!
```

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