Practical - Virtual lab

-Shivam Tawari (A-58)

Aim: To understand the challenges in extracting objects / regions of interest from a given images.

Theory:

Image segmentation is a common task which arises in many situations such as extracting a face or a character in a text from an image before performing automatic recognition. Generally, it is used to separate the foreground pixels belonging to the object of interest, from the background pixels.

Single Threshold:

The single threshold approach is suitable when the image have a bi-model histogram which means histogram has two distinct peaks. However, in many situations an object of interest has some variation in brightness value in which case a double threshold might be necessary.

Double Threshold:

This operator applies a double threshold filter to multibeam variables for the purpose of removing data within a specified range.

Automatic Threshold: (OTSU Threshold)

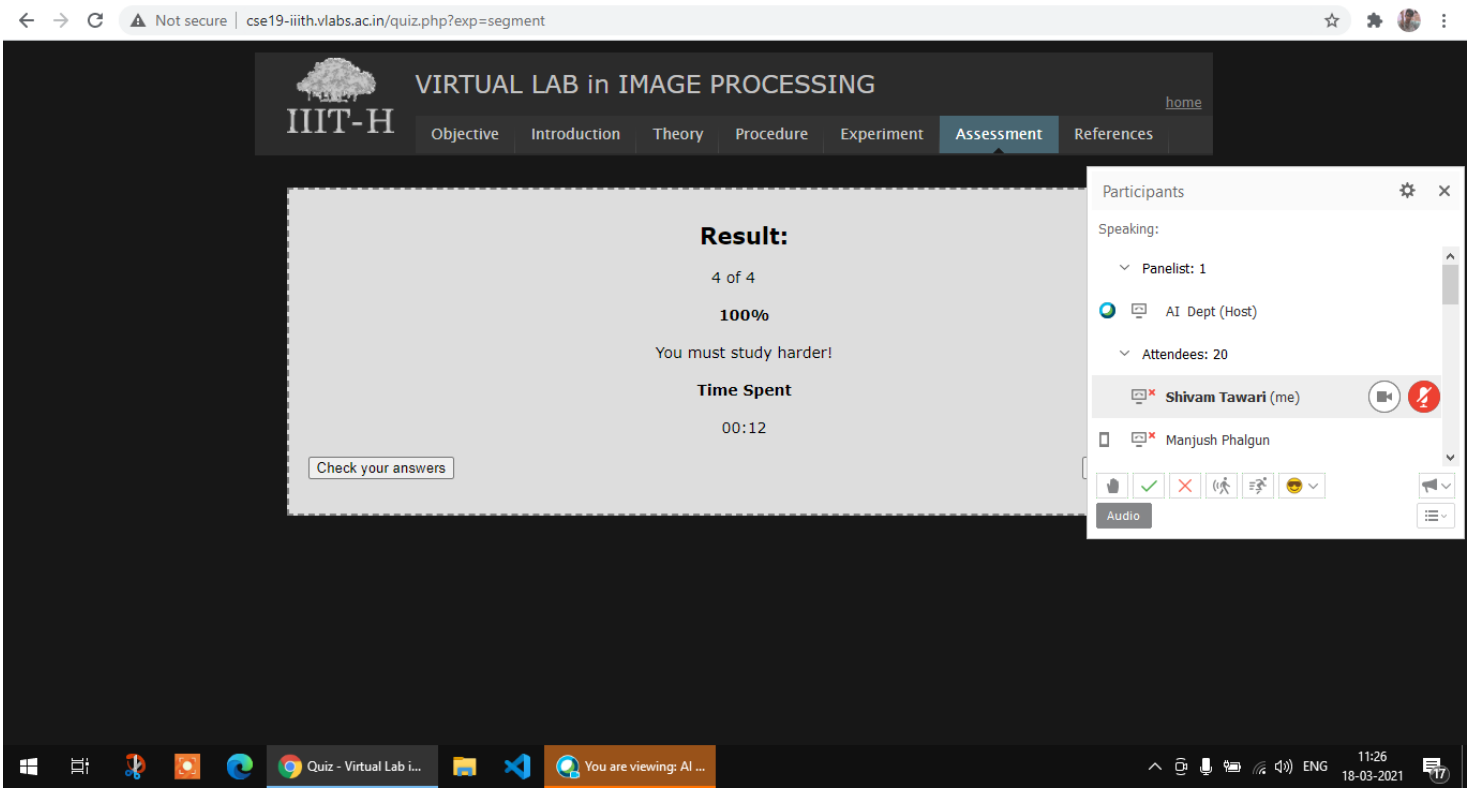
The OTSU threshold is the most standard threshold technique used in image processing application. It assumes that the image having bi-model histogram.

Region Growing:

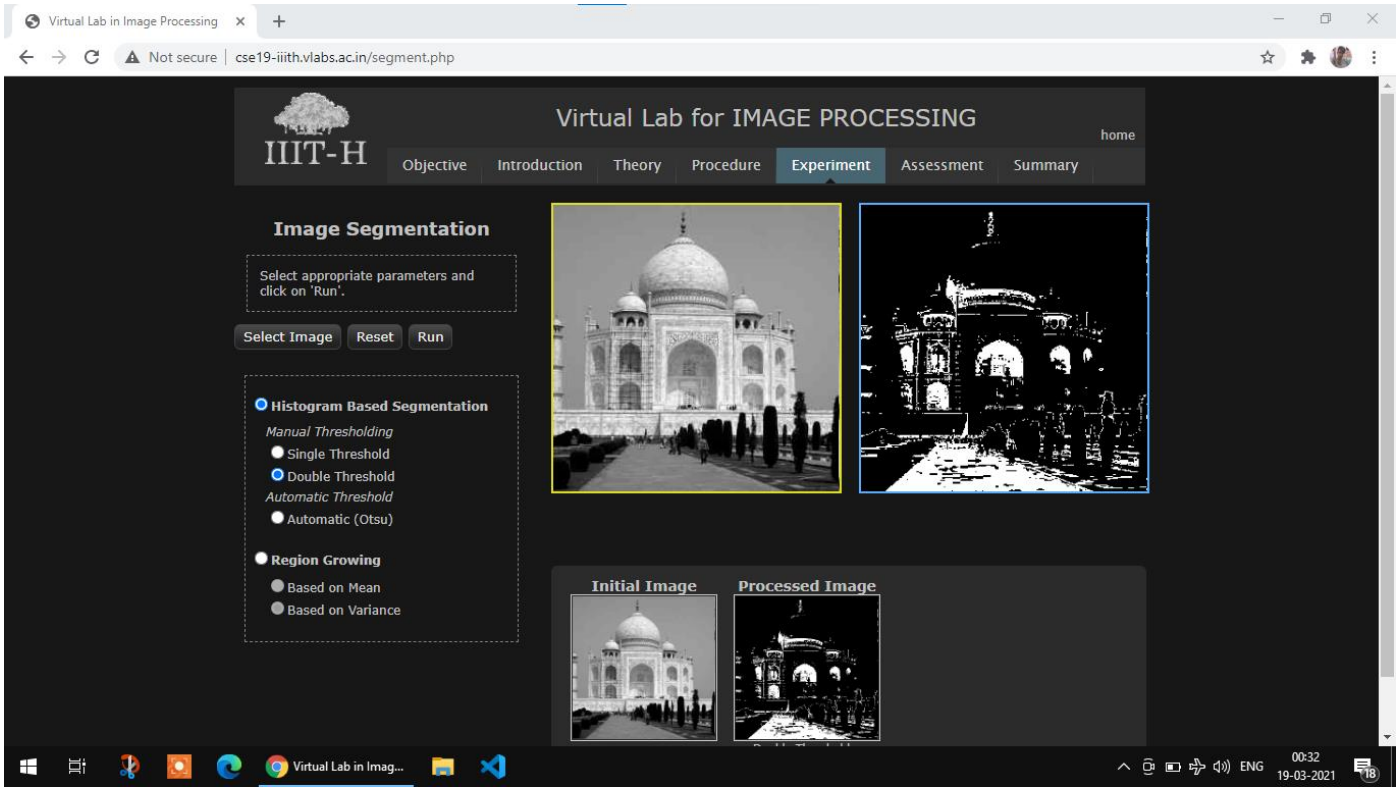
Region growing is a segmentation technique used to exploit this homogeneity. In this method is a seed pixel is the starting point and based on a test for homogeneity pixels are accumulated to extract the object of interest.

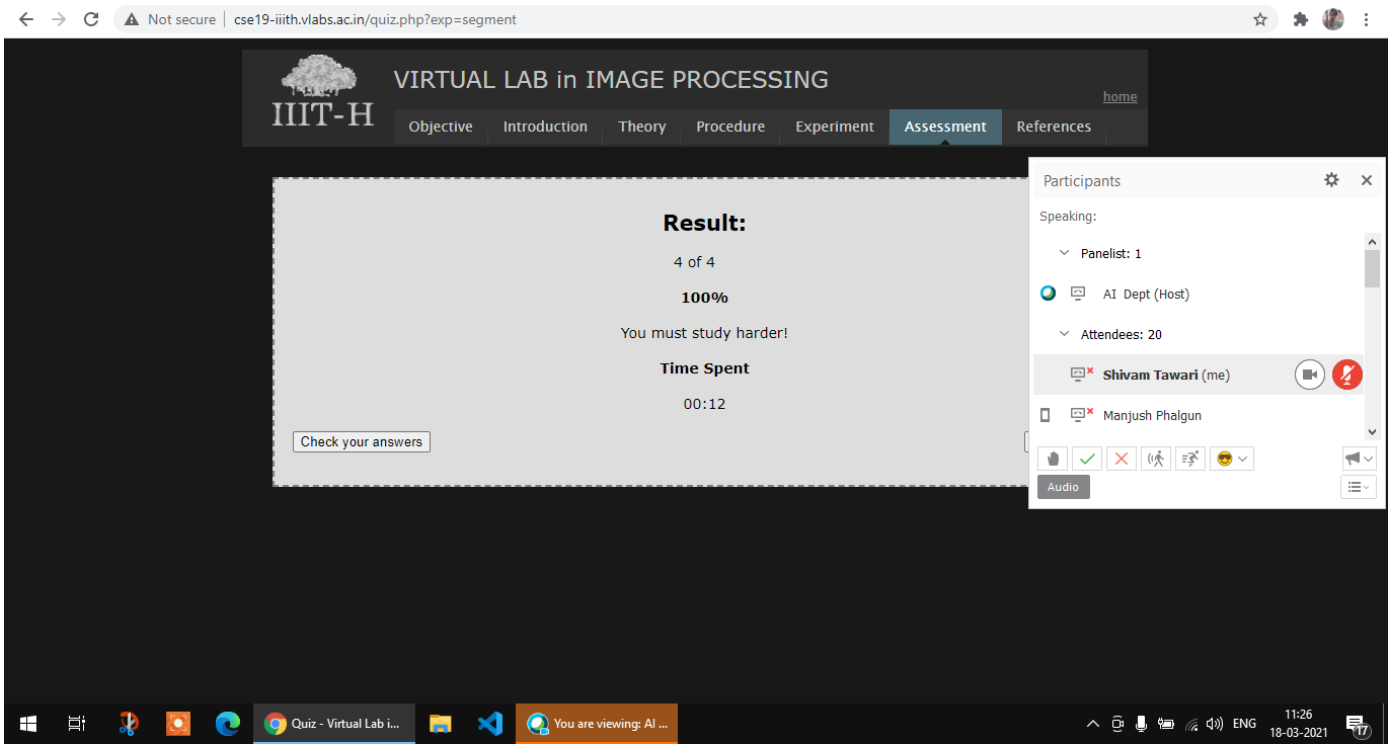
Conclusion: Hence, we have successfully implemented the challenge to extract objects / regions of interest from a given images.

Assessment:


Not secure | cse19-iiith.vlabs.ac.in/quiz.php?exp=segment
IIIT-H
VIRTUAL LAB in IMAGE PROCESSING
home
Objective
Introduction
Theory
Procedure
Experiment
Assessment
References
Result:
4 of 4
100%
You must study harder!
Time Spent
00:12
Check your answers
Participants
Speaking:
Panelist: 1
AI Dept (Host)
Attendees: 20
Shivam Tawari (me)
Manjush Phalgun
Audio
Quiz - Virtual Lab i...
You are viewing: AI ...
ENG
11:26
18-03-2021

Output:


Virtual Lab in Image Processing
Not secure | cse19-iiith.vlabs.ac.in/segment.php
IIIT-H
Virtual Lab for IMAGE PROCESSING
home
Objective
Introduction
Theory
Procedure
Experiment
Assessment
Summary
Image Segmentation
Select appropriate parameters and click on 'Run'.
Select Image
Reset
Run
Histogram Based Segmentation
Manual Thresholding
Single Threshold
Double Threshold
Automatic Threshold
Automatic (Otsu)
Region Growing
Based on Mean
Based on Variance
Initial Image
Processed Image
Virtual Lab in Imag...
ENG
00:32
19-03-2021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