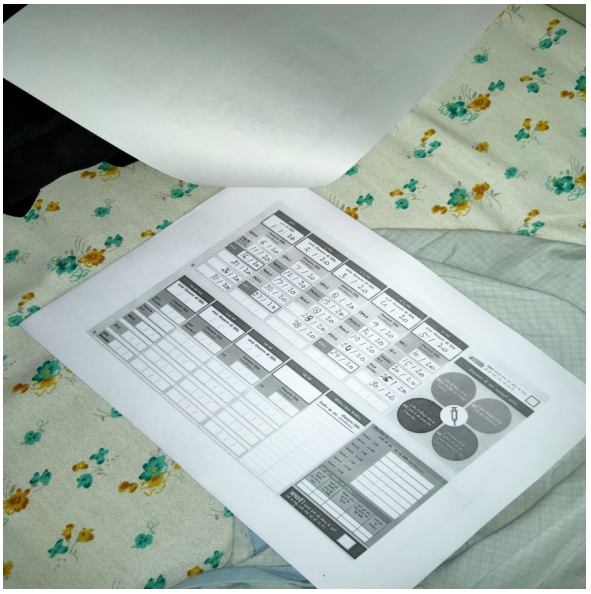
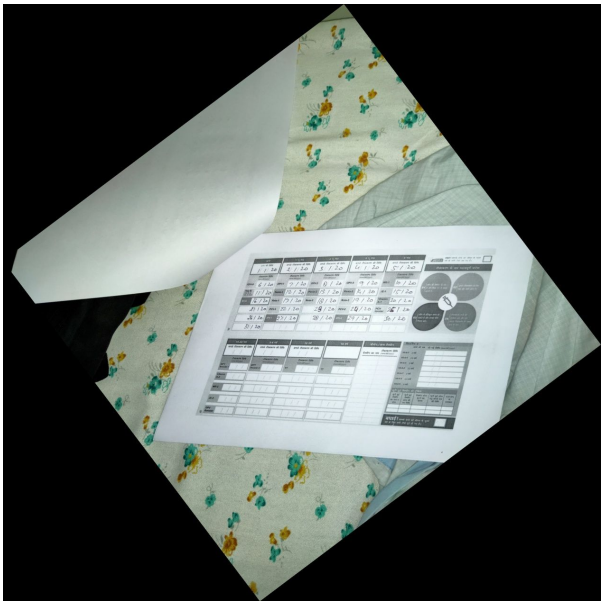
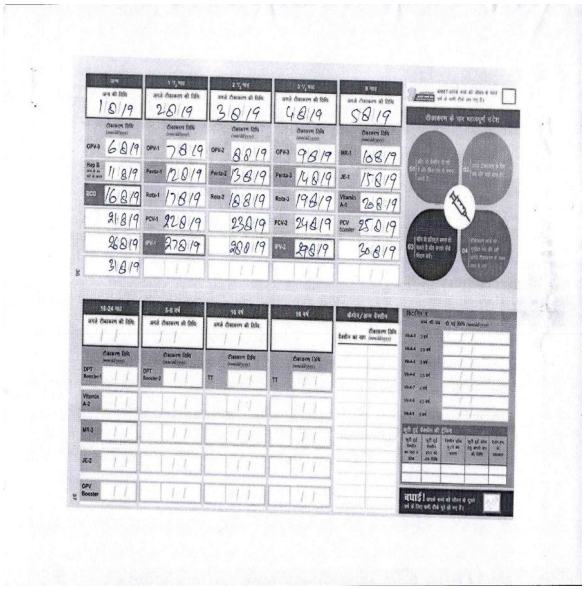
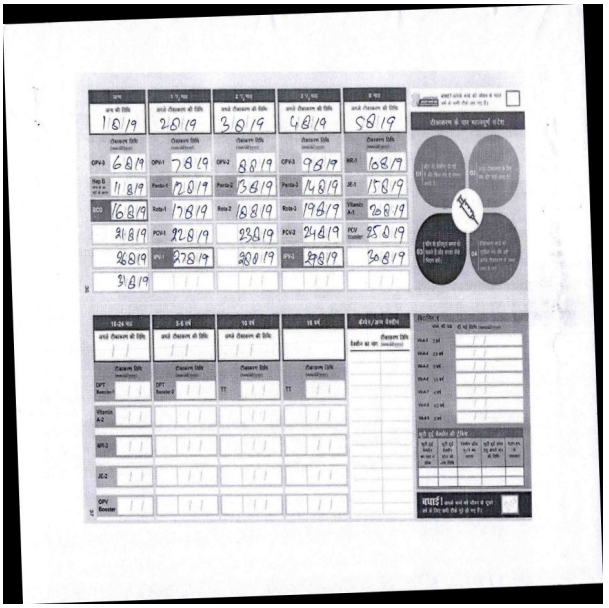
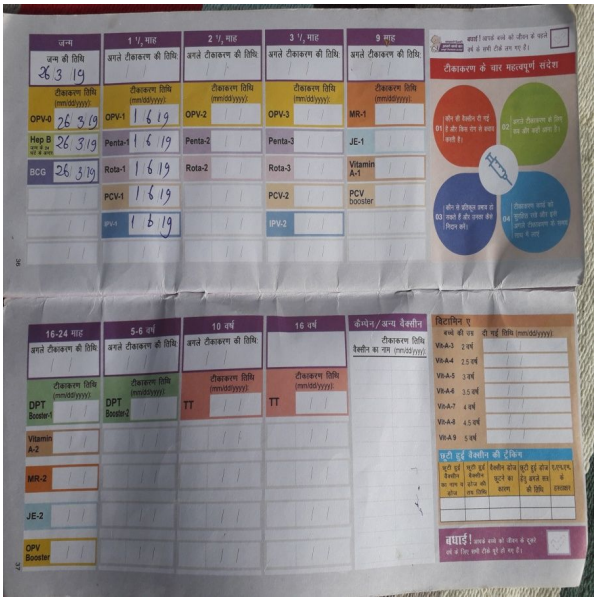
Ansh Prakash : 2016CS10367
Sagar Chapara : 2017EE30524

Image Alignment

We find the lines in the images, as most of the lines are horizontal in the form, the median is most probably give the alignment of the form. So, rotate by that amount.

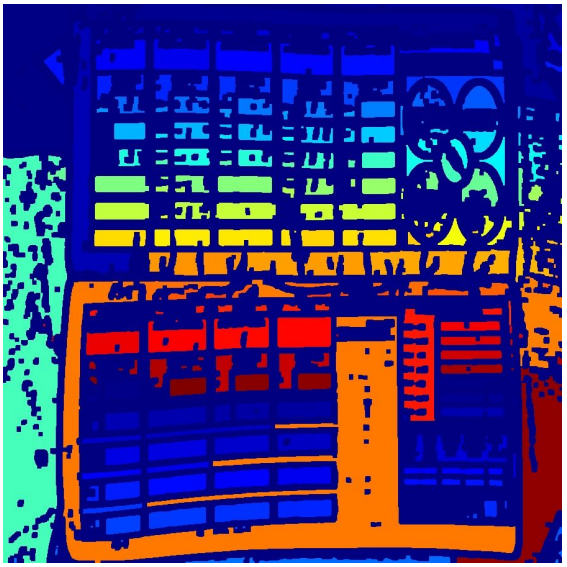







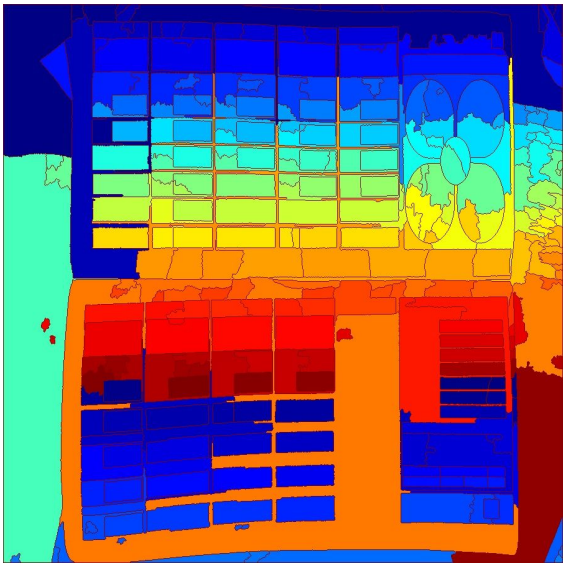
Form Field Segmentation

We created markers by adaptive thresholding followed by morphological operations and then applied watershed segmentation.

Booklet Data

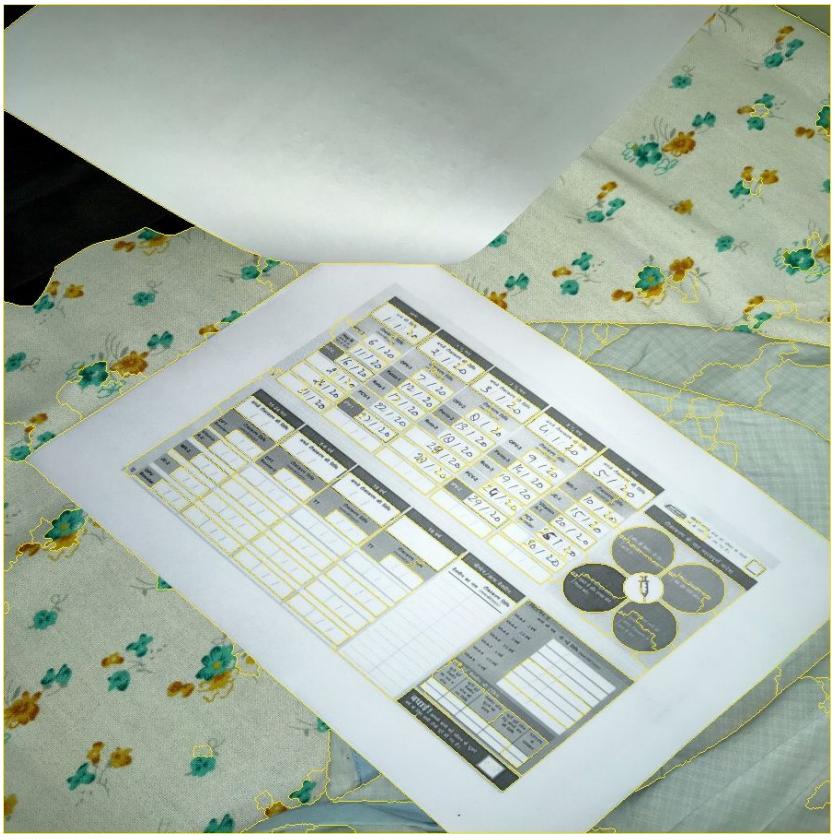


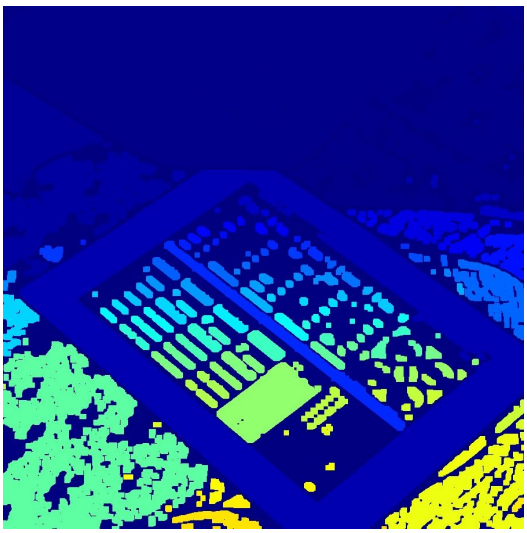
Markers

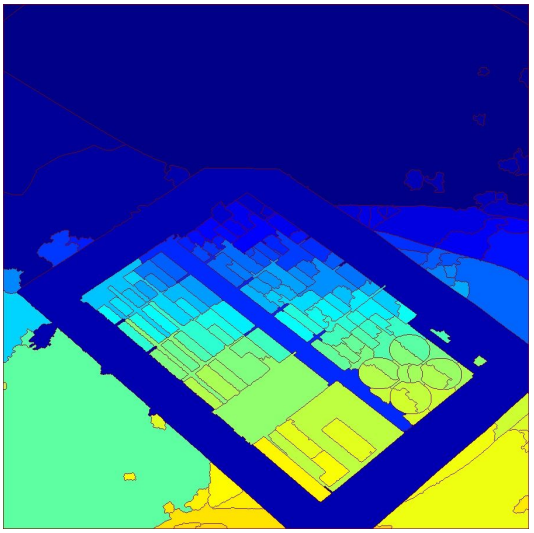


Watershed Segmentation

PrintOut Data

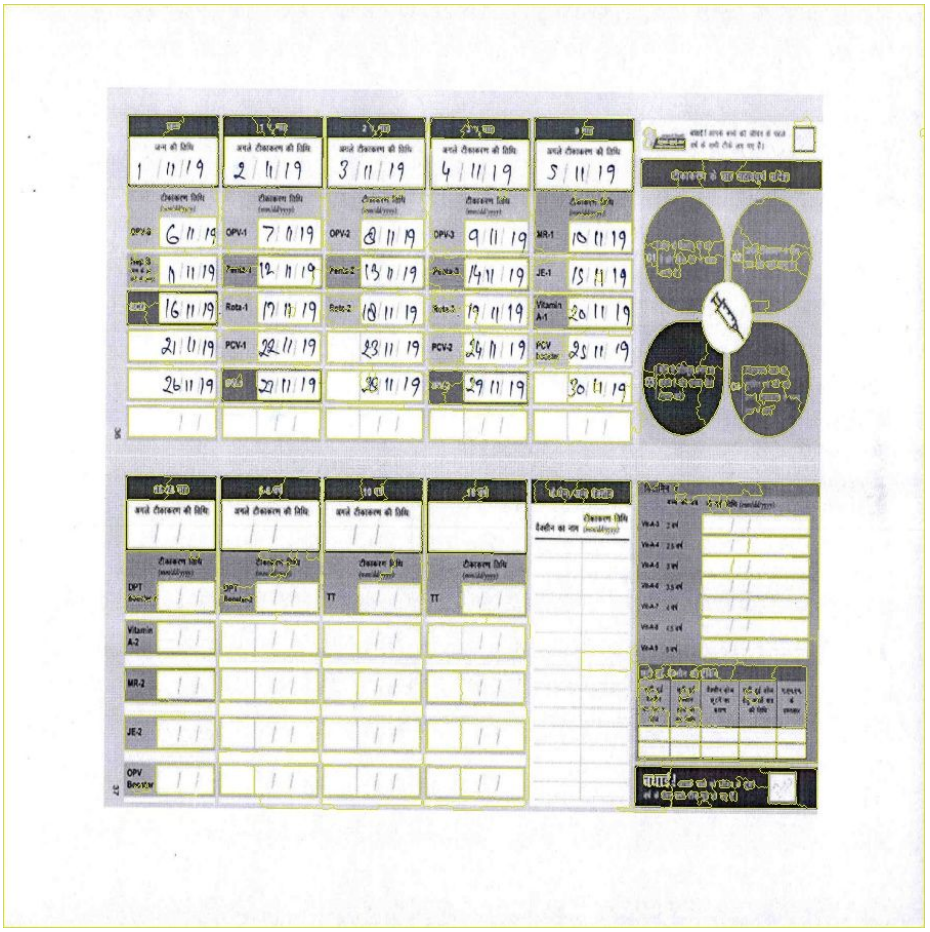


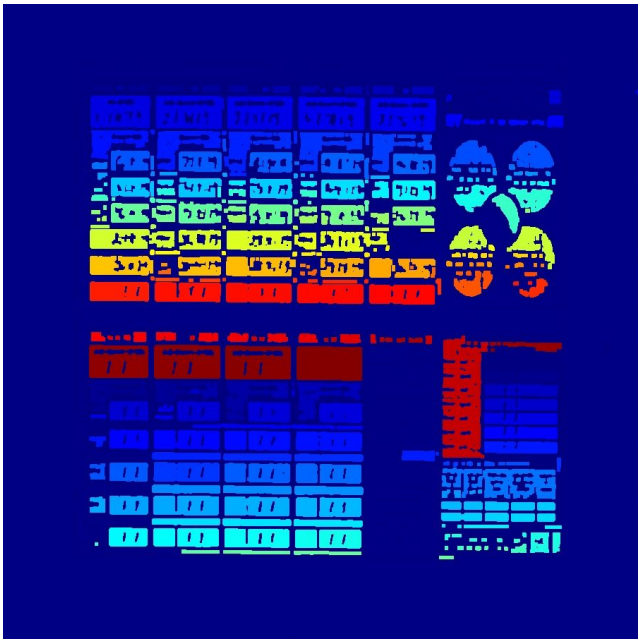




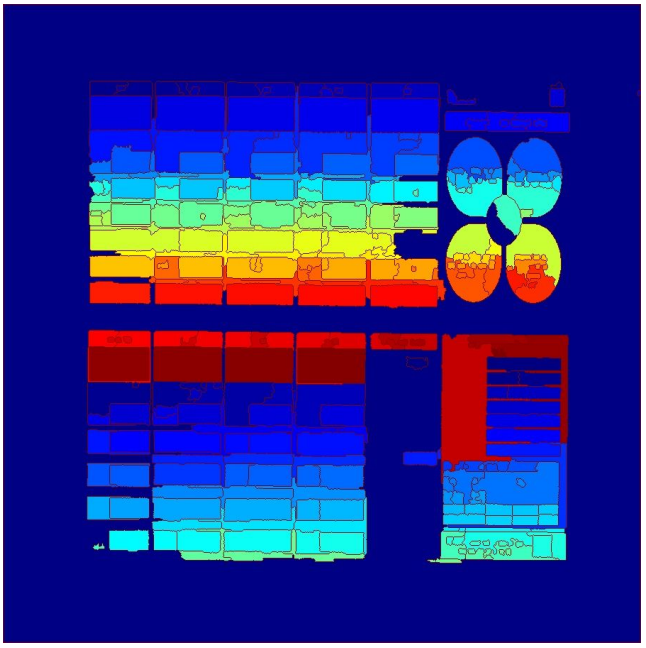
Markers WaterShed Segmentation

Scanned Data





Markers

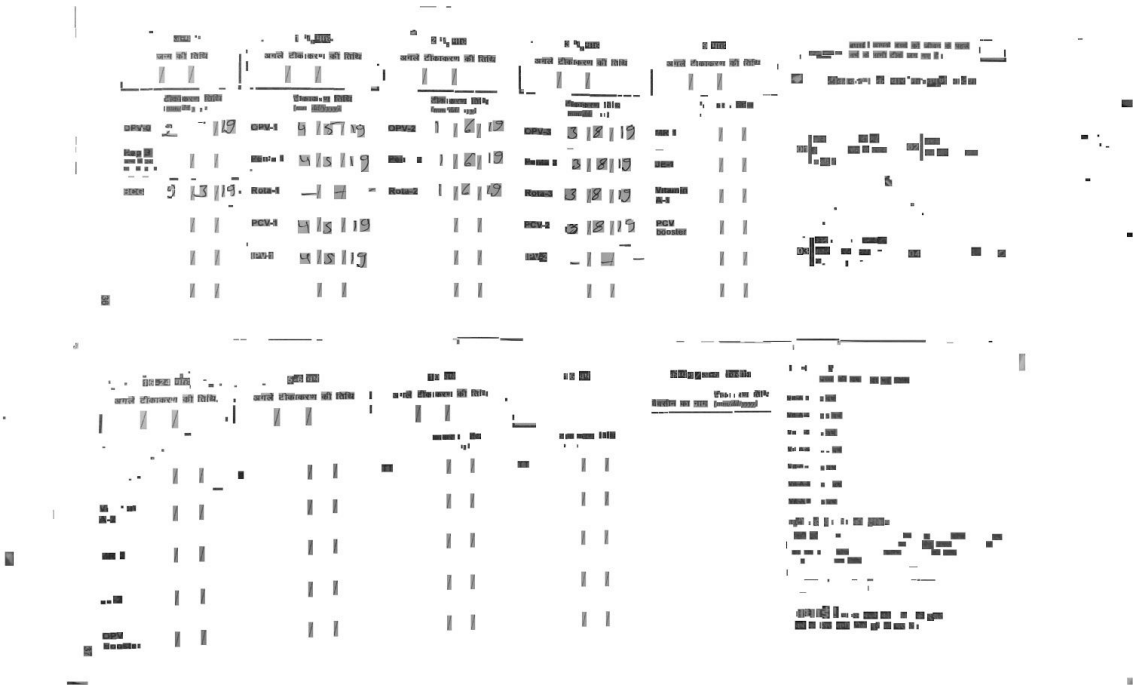


WaterShed Segmentation

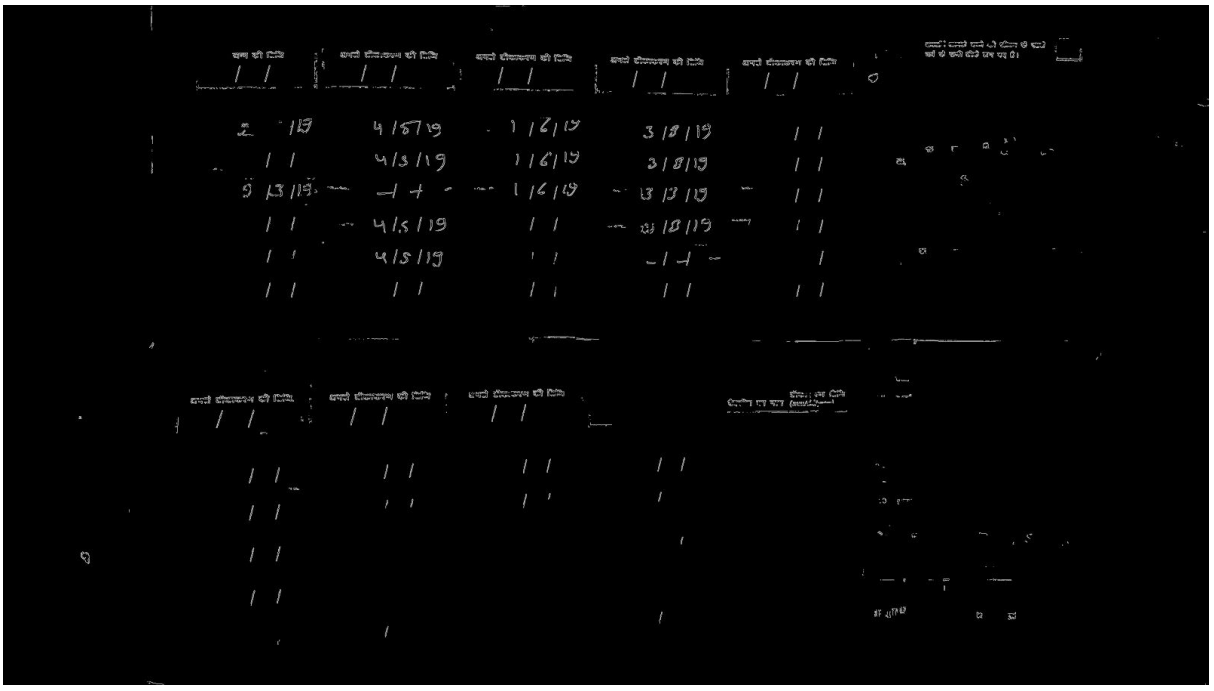
Character Detection

We first used the intersection of MSER detection and Canny Edge Detection for extracting the characters then improved the detection by removing False positives by factors such as aspect ratio, perimeter to area ratio and area of contours.

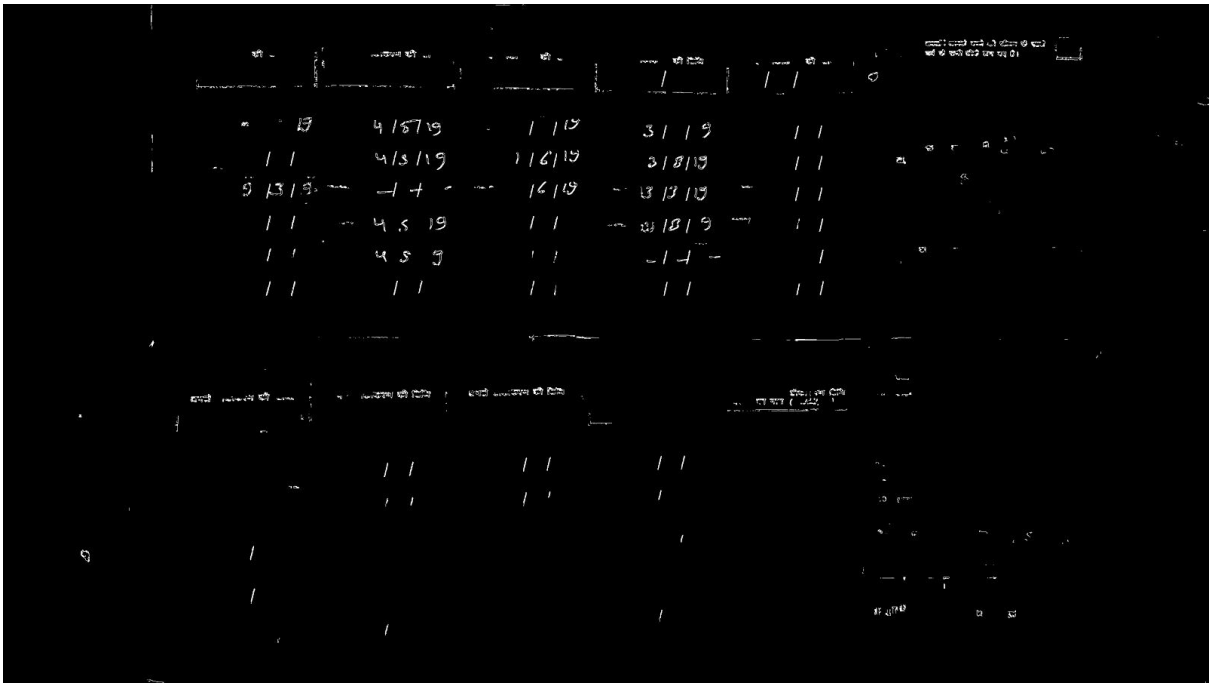
Booklet data



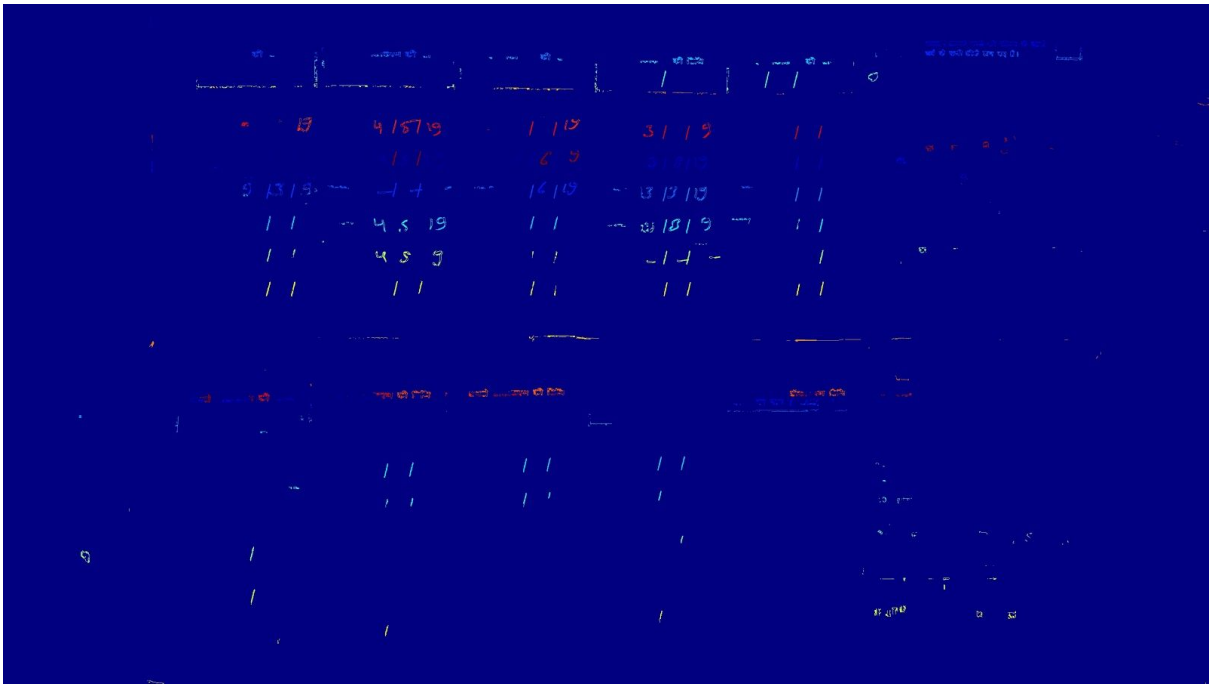
MSER Detected Regions



The intersection of Canny Edge Detection and MSER results.



After post-processing



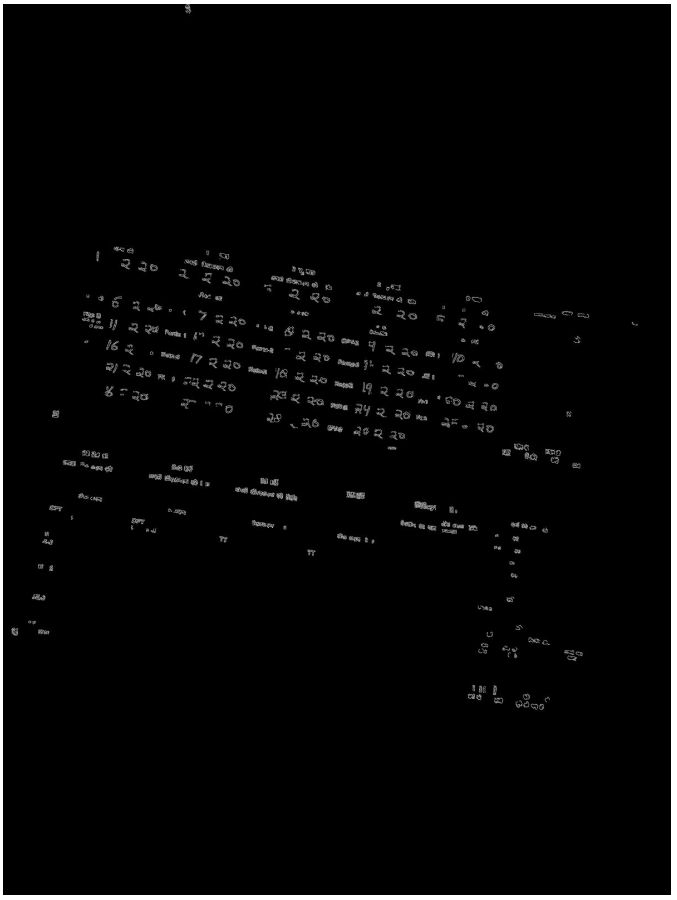
Connected Components

Print Data

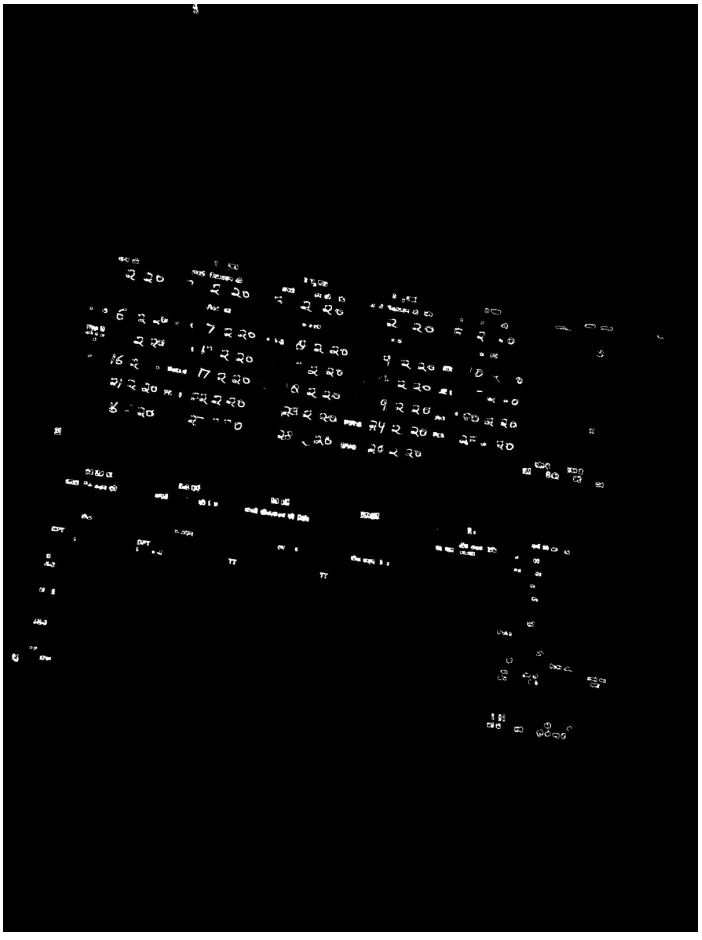
Original


OPV-0
Hep B
BCG
OPV-1
Penta-1
Rota-1
PCV-1
IPV-1
OPV-2
Penta-2
Rota-2
PCV-2
IPV-2
OPV-3
Penta-3
Rota-3
PCV-3
IPV-3
MR-1
JE-1
Vitamin A-1
PCV booster
DPT Booster-1
Vitamin A-2
MR-2
JE-2
DPT Booster-2
TT
OPV Booster

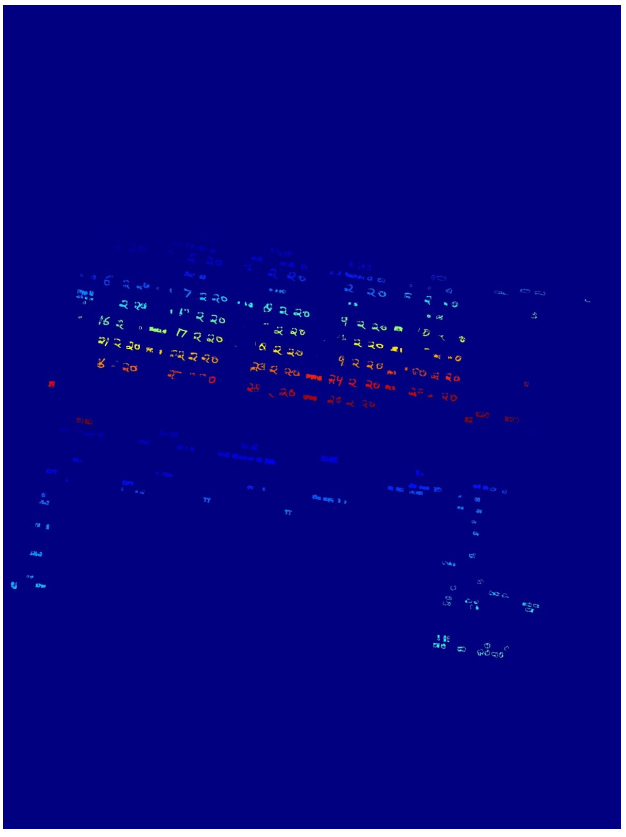
MSER Detection



Canny Edge ∩ MSER Detection

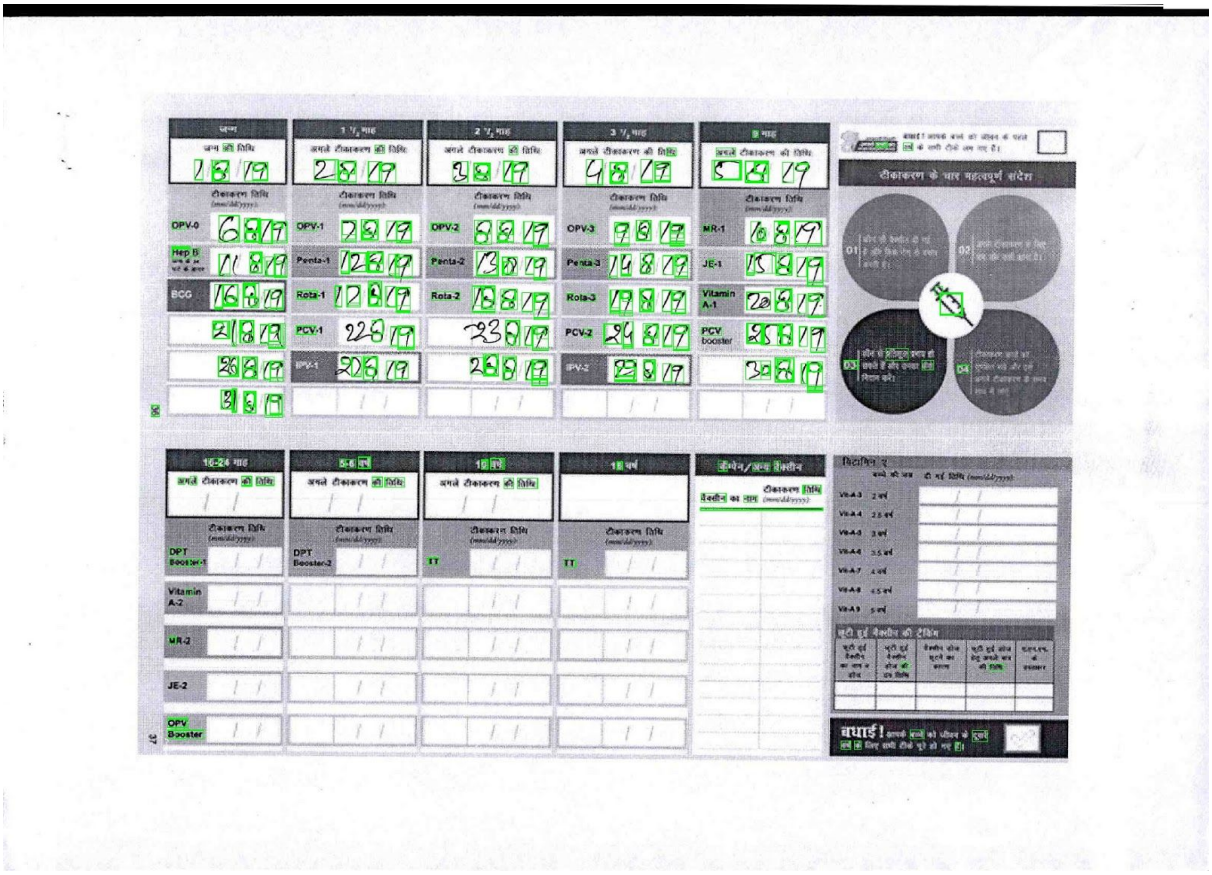


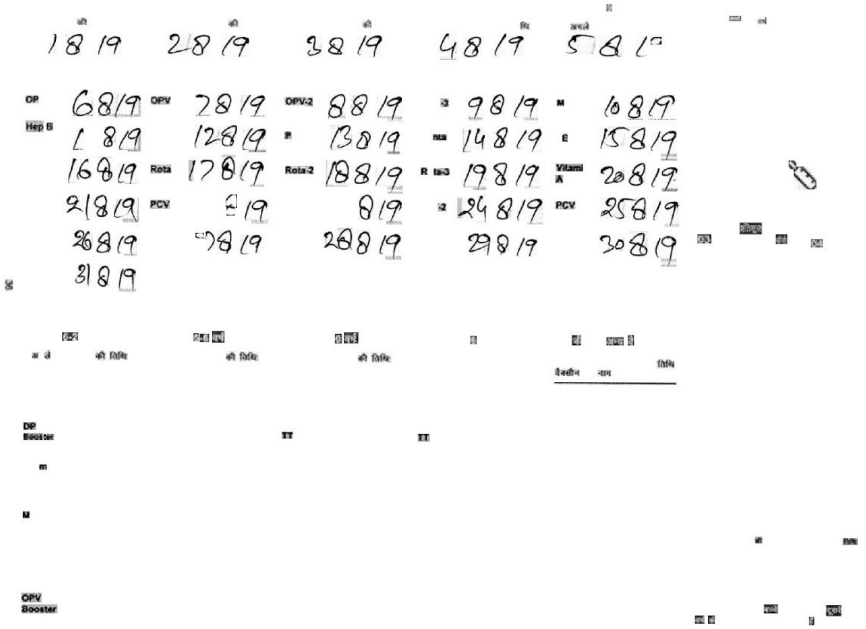
After Post Processing



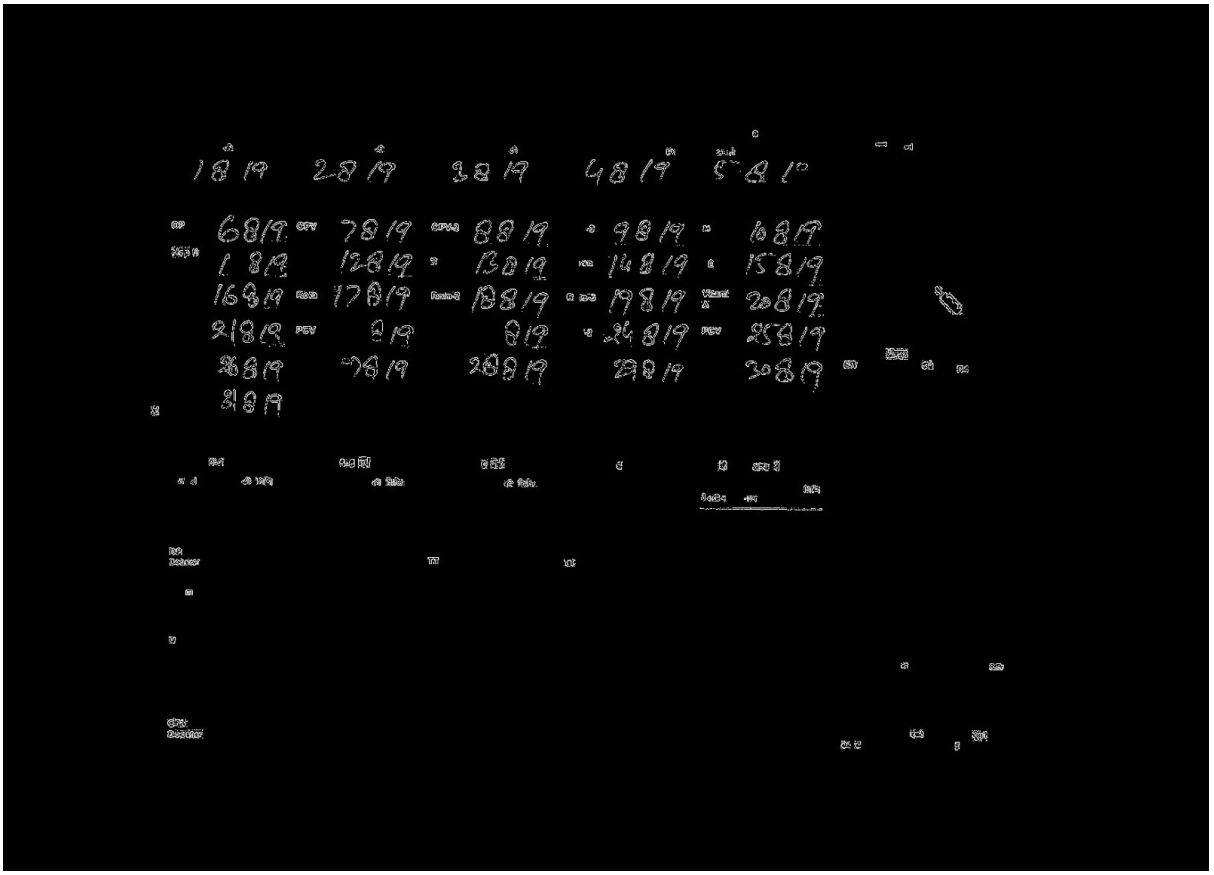
Connected Components

Scanned Images

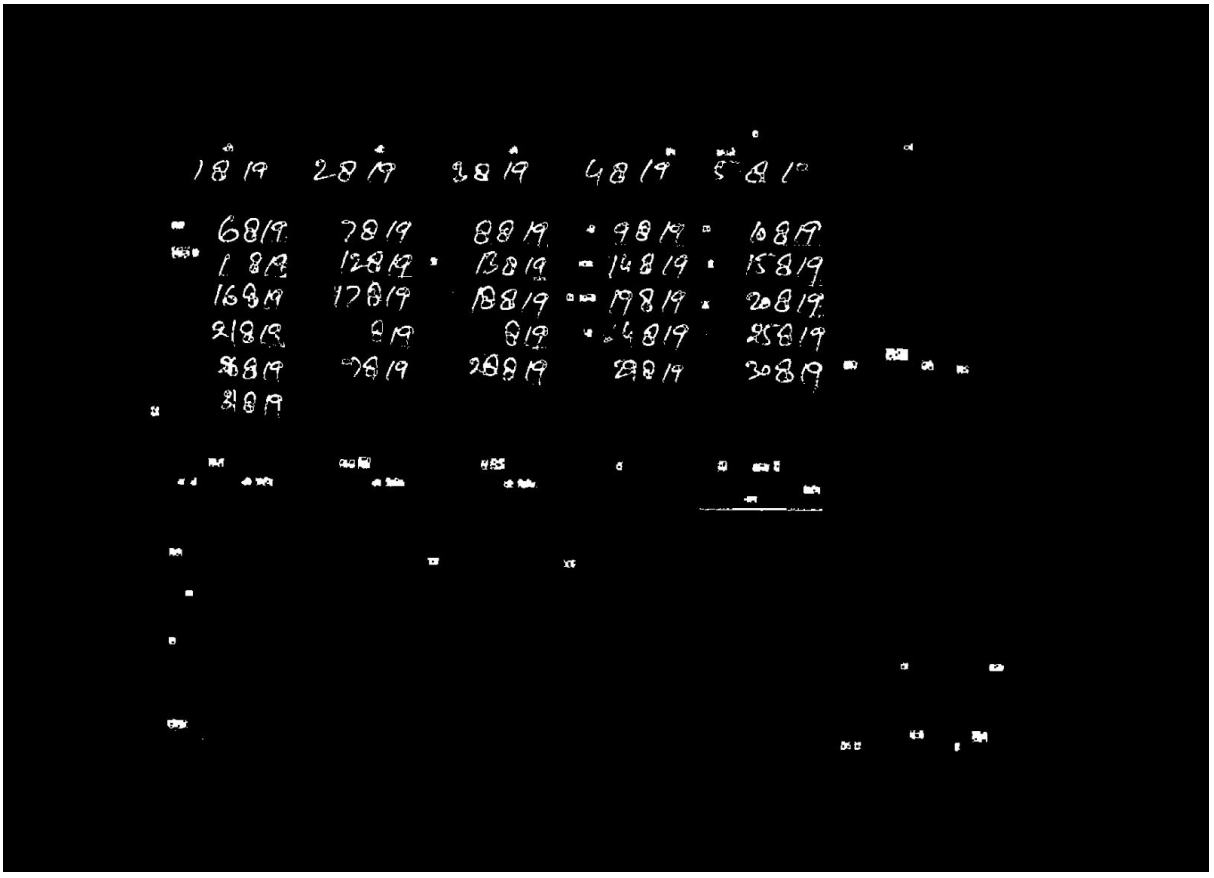




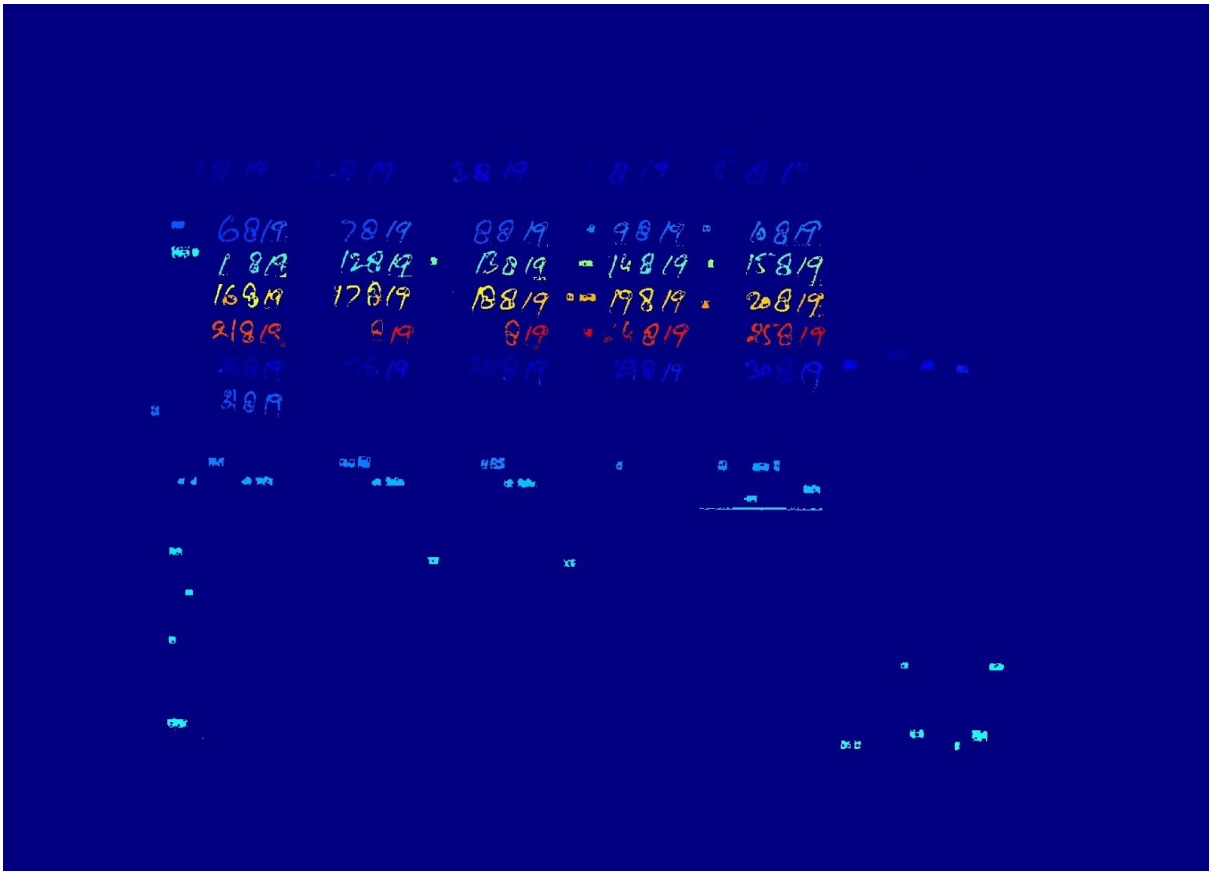
MSER Detected



Canny Edge ∩ MSER Detection



After Post Processing



Connected Components
