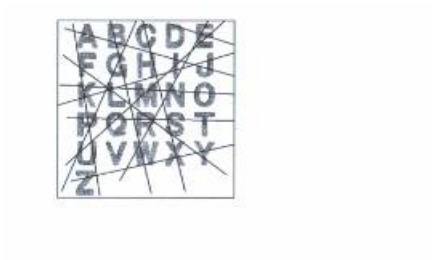
Probleme Partea 3

Problem 1

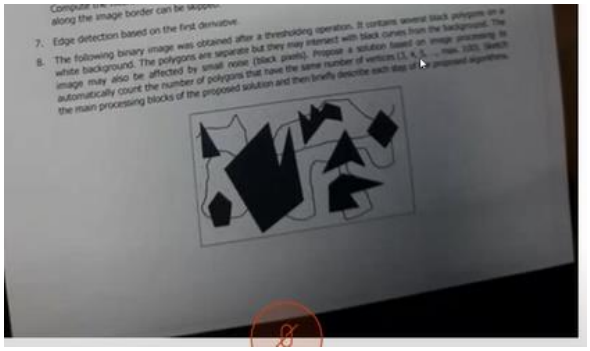
Find no of letters that enclose a blank space



- Opening to get rid of lines
- Label all letters
- Pt fiecare label , fac conturul, region filling si vad daca difera aria la regiunea umpluta fata de aria literei din poza initiala

Problem 2

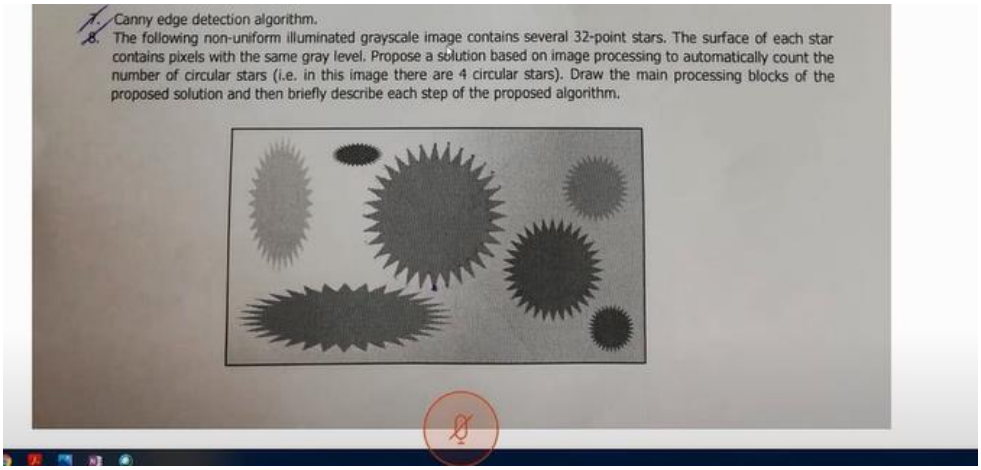
Count polygons in image with same number of vertices



- Opening to get rid of the curved lines that connect the polygons
- Polygonal approximation to count the number of edges
- Number of vertices: number of edges + 1
- Frequency array with the corresponding polygons for each vertex number

Problem 3

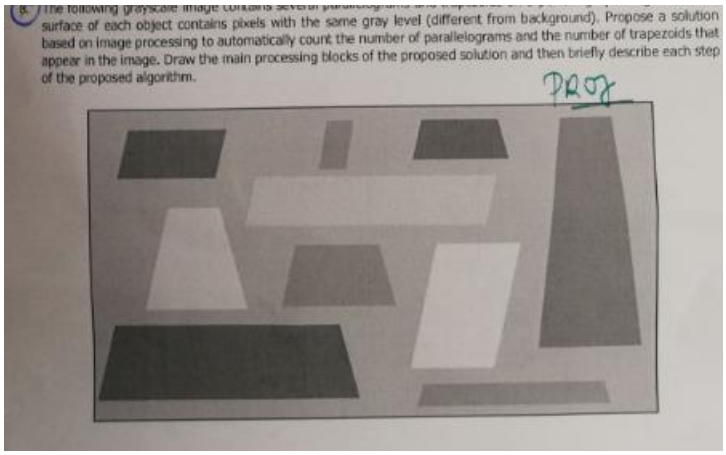
Number of perfectly round stars



- Make background uniformly coloured
- Label all stars
- Do bounding box for each star. If it is a perfect square, the star was a cirular one

Problem 4

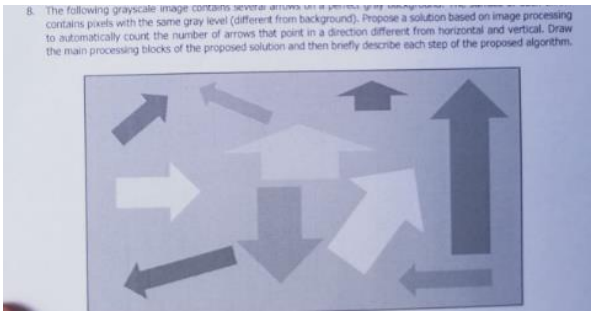
Count Parallelograms and Trapezoids



- Make background white or uniform
- Do horizontal projections. Paralelogramele o sa aiba aceeasi latime pe toata lungimea proiectiei, iar la trapez o sa arate ca un trapez dreptunghic
- La final numaram

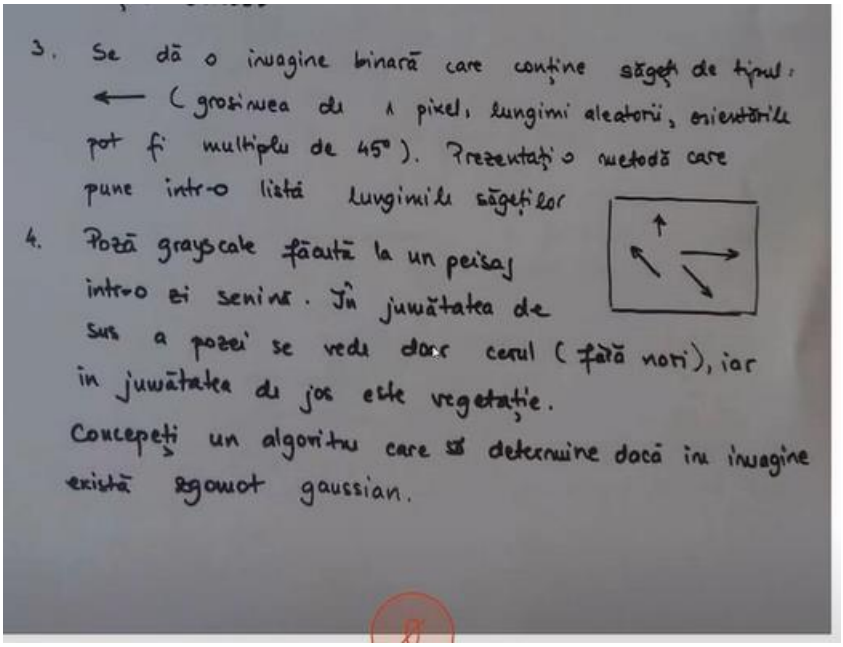
Problem 5

Count arrows which are not vertical or horizontal



- Background uniform
- punem labels
- calculam pt fiecare obiect axa de elongare
- numaram toate unghiurile ce nu sunt multiplu de 90 grade

Problems 6 & 7



6) Bounding box, 3 reguli:

- dr-st daca e orizontala

- jos – sus daca e verticala

- pitagora daca e diagonala

- lista cu lungimile

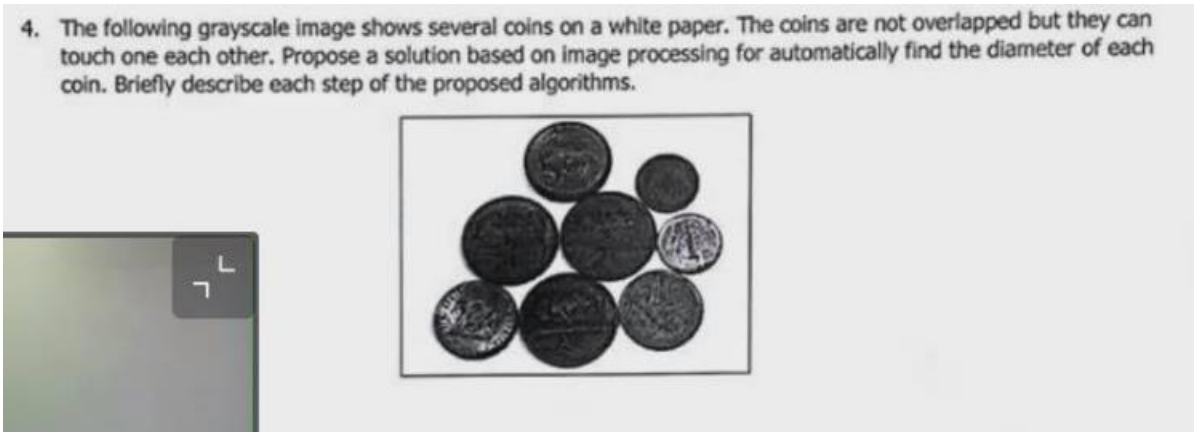
7) Gaussian noise

- Iau coltul din st sus din cer sau ceva din cer

- vad daca e distributie gaussiana pe portiunea respectiva

Problem 8

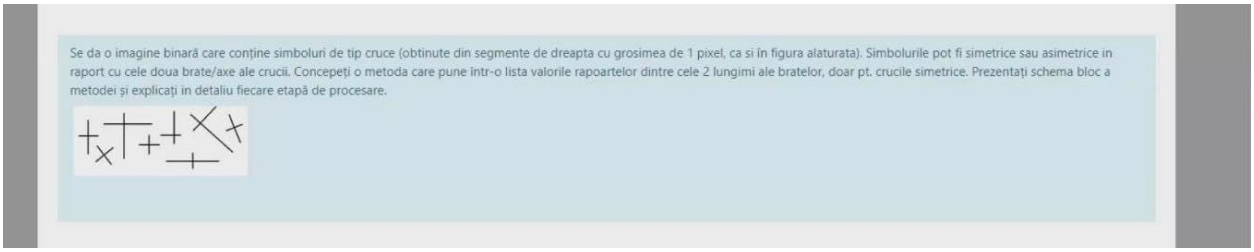
Coin Diameters



- 1 or 2 erosions to separate coins
- binarize
- Label all coins
- Do bounding box
- Compute difference + add 2 or 4 depending on number of erosions (2*erosions)

Problem 9

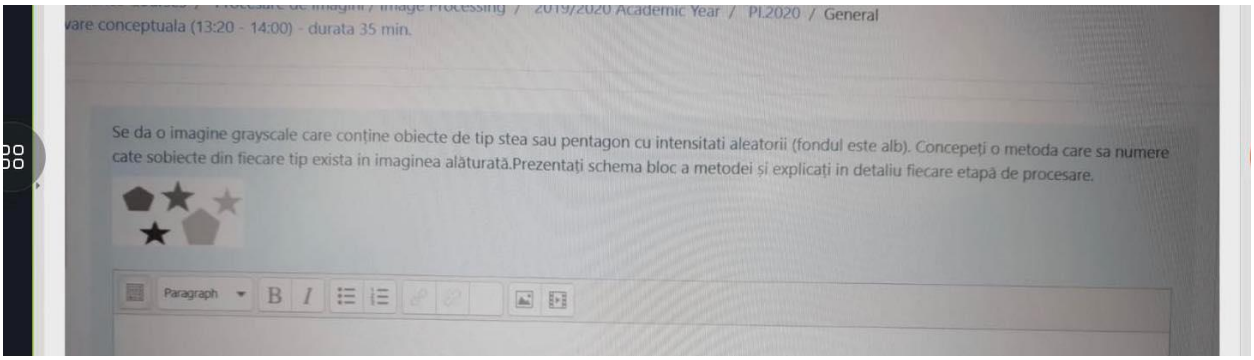
Numarul de cruci simetrice



- Labeling
- Bfs pt fiecare obiect, merg in jos pana la capatul obiectului pt lungime
- Daca am intersectia cu cealalta latura la mijloc, e simetric si fac iar bfs in cealalta directie pt ca sa aflu raportul

Problem 10

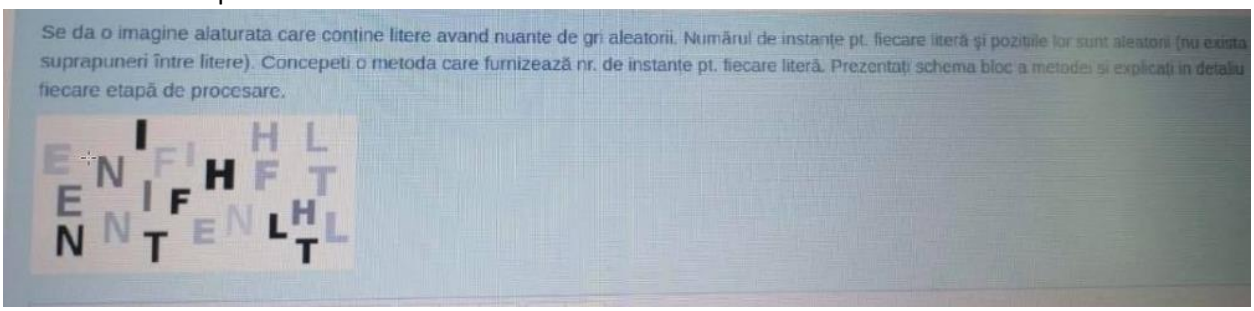
Stele si pentagoane



- Fac perimetru/arie
- -> o sa fie mare la stele, mic la pentagoane
  SAU
- Folosesc factor de iregularitate 1/T

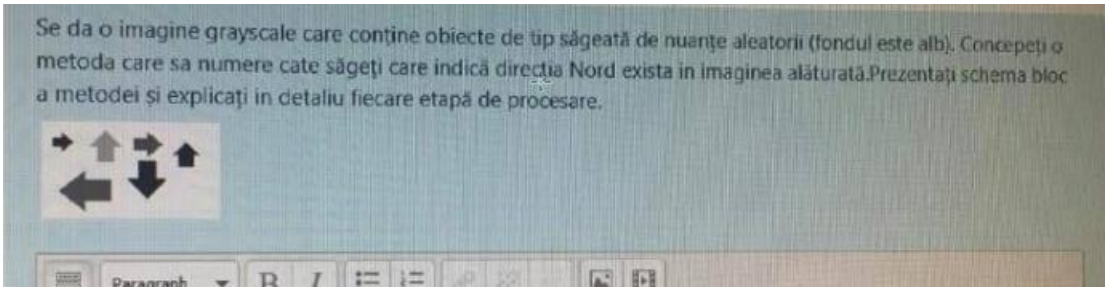
Problem 11

Numar instantele pt fiecare litera



- label all leters
- do chain codes for each labeled object
- remove duplicates from chain codes (pt ca unele litere sunt mai groase decat altele)
- frequency counter

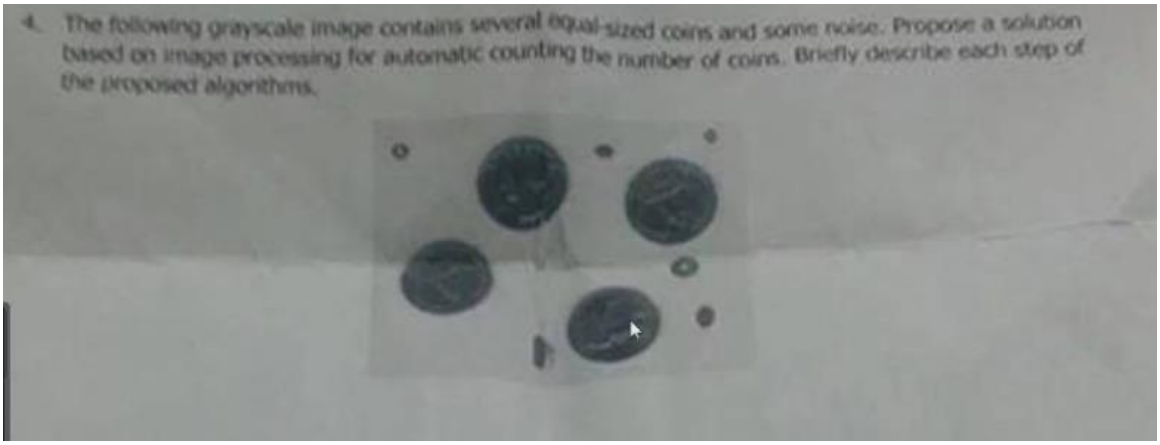
Problem 12



- proiectie orizontala
- daca primul rand are doar 1 pixel -> e varf si arata spre nord

Problem 13

Count number of coins



- eroziune cu un element structural mare ca sa scap de cercurile alea mici si de noise