r r t w
e e n x
t a o x

↳ polyalphabetic cipher.

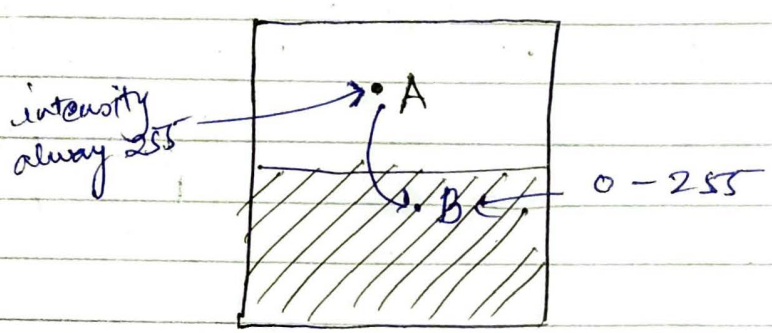
↳ one time pad.

—X—

Image Processing (Anay Sir) 17/10/19

Furrier Transform. (Spatial Domain & Frequency Domain)

The digital version of any scene is considered as spatial domain region.



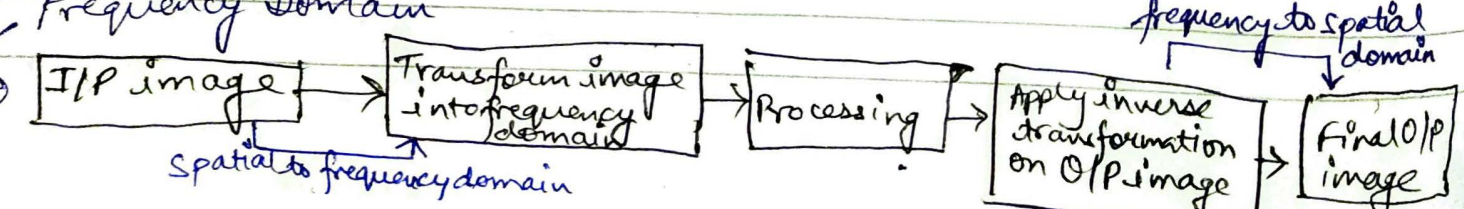
If intensity value gets changed in the picture it also changes in the original scene

Frequency Domain :-

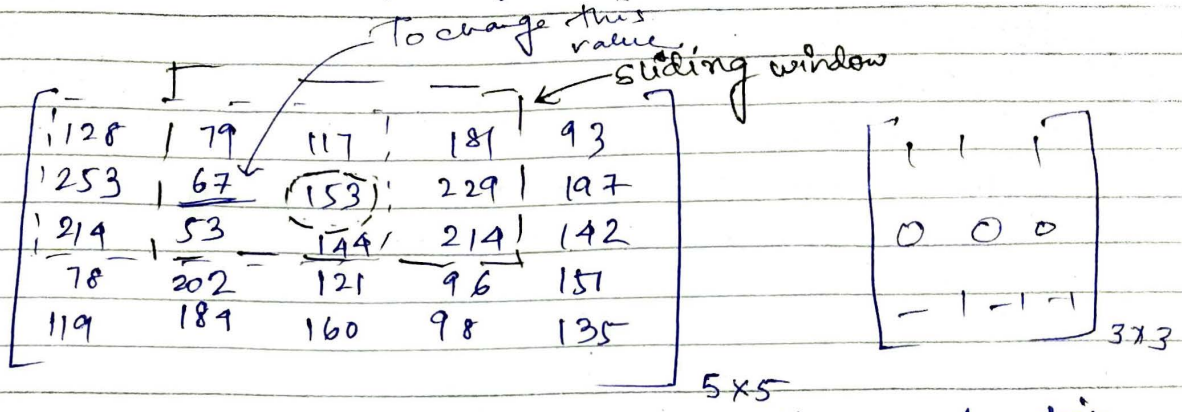
The particular weight at which intensity value change or rate of change of intensity value.

Special Domain

Frequency Domain



What is convolution of image.



$128 \times 1 + 79 \times 1 + 117 \times 1$

—x—

To read a noisless image and displaya blur image.

we will apply motion blur.
length of the blurness needs to be specified.

0 →
l → length of blurness.

Step 1: read image.
Step 2: read length of blurness $l = 21$.;
Step 3: read angle of blurness (θ) → $t = 11$;
Step 4: call function to blur the image.

```
>> p = fspecial('motion', l, t);
```

Code:-

```
>> pkg load image;
>> im = imread('I1.pgm');
   l = 21;
   t = 11;
>> p = fspecial('motion', l, t);
>> b = imfilter(im, p);
>> imshow(b);
```

filter the image ~~using~~ with isotropic gaussian soothing

```
>> im = imread('...');
>> p = fspecial('gaussian', l, t);
>> b = imfilter(I, p);
>> imshow(b);
>> title('Gaussian Filter');
```

v) function prototypes included in header file

language processing phase - compilation phase

To check if a word is valid or not in automata - regular expression is used.

⟨a⟩ → ⟨id, 1⟩

⟨=⟩ → ⟨=⟩ ← when this token occurs it has the same function hence it is not renamed like identifiers are.

—X—

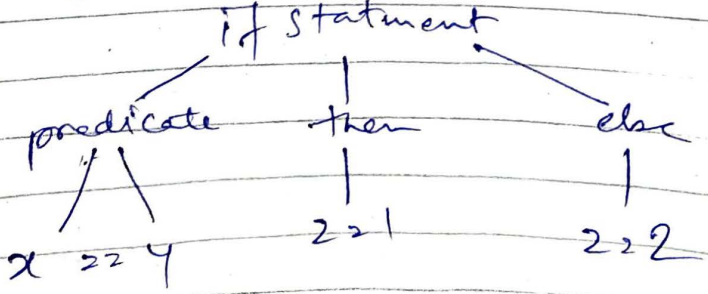
Next Step: To analysis the words detected

Syntax Analysis - Although lexemes detected are individually correct the sentence might not be for detection of valid sentence syntax analyser used.

Syntax Checking also known as parsing.

Parse Tree:

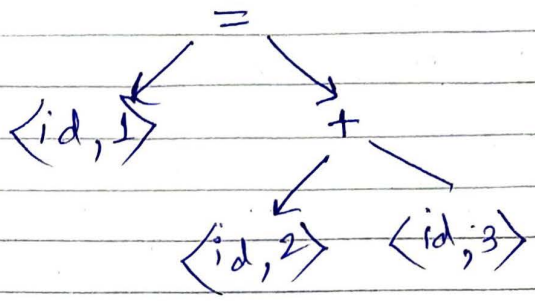
if x == y then z = 1 else z = 2



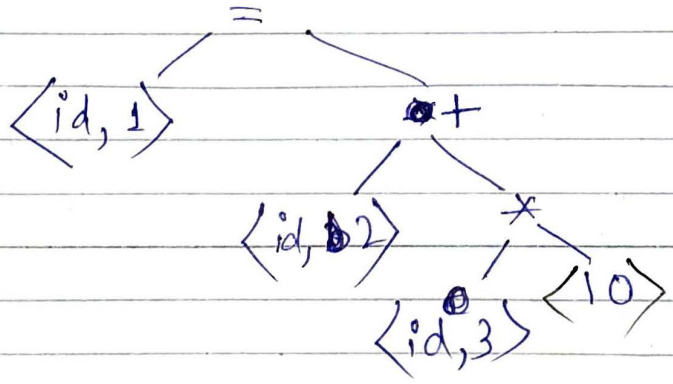
Syntax Tree

$a = b + c$ (Input Character stream)

Token Stream .. $\langle id,1 \rangle \langle = \rangle \langle id,2 \rangle \langle + \rangle \langle id,3 \rangle$



$a = b + c * 10$.



Semantic Analysis - To derive meaning from the sentence ↳ collection of all ambiguous cases of syntax and pass it through semantic analyzer and make it unambiguous.

```
int a = 5;
main()
{
int a;
a = 2;
printf("%d", a);
}
```

Semantic Analysis decides which a to print

```
float b, c;
int a;
a = 2;
b = 10.0;
c = a * b;
```

at hardware level computer can't do it although it is syntactically correct so semantic analyzer solves these problems.

Error.

Front End Compile - Why? H/W independent

Lexical Analyzer

↓

Syntax Analyzer

↓

Semantic Analyzer

Intermediate Code Generator

Backend compilation

Convert Syntax tree to almost assembly level format but not entirely.

after that comes the code optimazation phase

certain sub expressions get repeated in intermediate code again and again so this phase stores it in register.

then comes code generation phase.

Machine dependent become depending on machine architecture how many memory spaces required etc is determined.

17/10/19

Image Processing (Anay Sir)

Compute the Fourier Transform in a 2-D image.

Low pass filters are used to smoothen the image in turn removing the noise.

High pass filter used to sharpen the image.

Types of Lowpass filter.
Ideal
~~Butterworth~~ Butterworth
Gaussian

low pass filter

threshold value > frequency — put 1 else put 0

opposite for high pass filter.

Contrast Stretching (Numerical)
or
Contrast Intensification