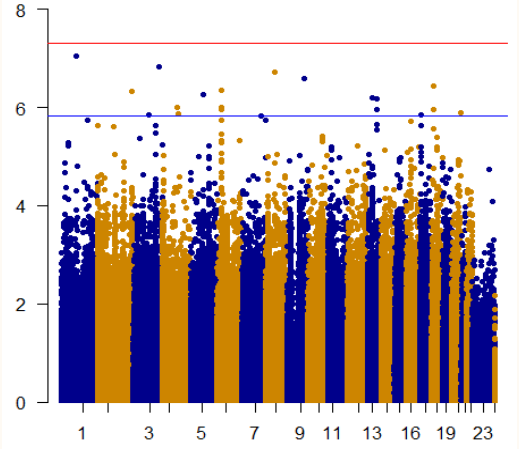
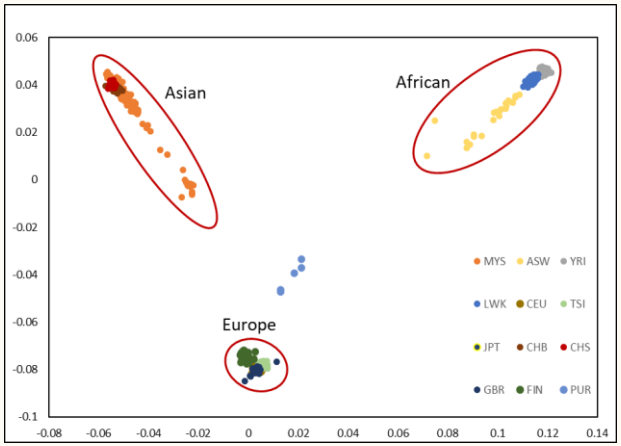
Muhammad Bin Bani Yamin

UM Biological Science Student

What I have been doing before 42KL



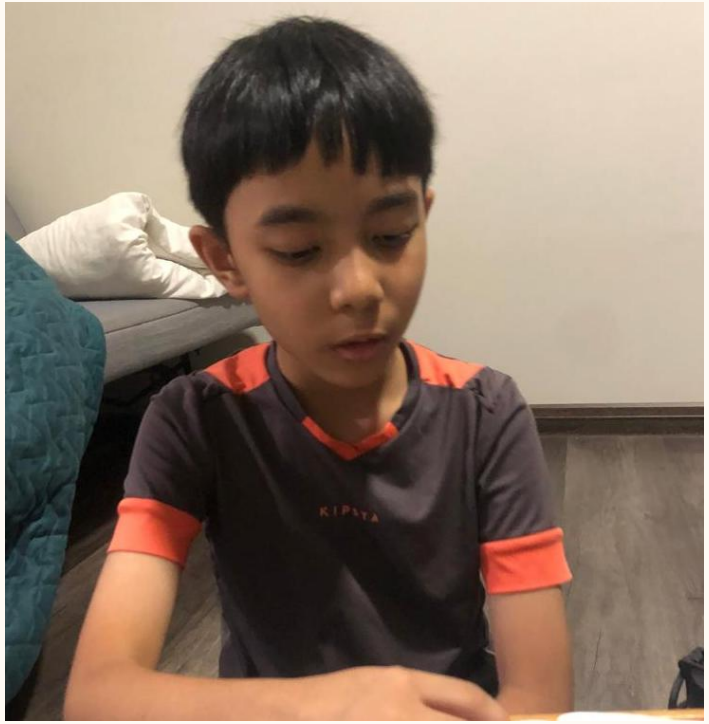


How I know 42KL

UNIVERSITI MALAYA

Dissertations

Identifying the Genomic Copy Number Variants That Are Associated with Obesity and its Related Phenotypes Among Malaysian Youths in Klang Valley.



Challenges I faced

```
//y++, dx < 0, dy < 0, m > 1
//5th mybook 4th article
void    fifth_case(t_data *d, t_bresen *b, t_colour *col)
{
    b->dp = (2 * b->dx) - b->dy;
    while (b->y0 <= b->y1)
    {
        colour_change(b, col);
        my_pixel_put(d, b->x0, b->y0, col->colour);
        b->y0++;
        if (b->dp >= 0)
        {
            b->x0--;
            b->dp = b->dp + (2 * b->dx) - (2 * b->dy);
        }
        else if (b->dp < 0)
            b->dp = b->dp + (2 * b->dx);
    }
}
—— FUNCTION LINES : 14 ——
```

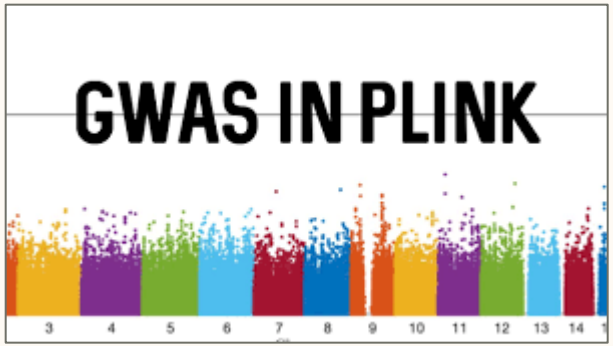
Strengthening Logical Thinking

mbani-ya's group-4	100%
This team was locked **2 months ago** and closed **2 months ago**	
mbani-ya's group-3	0%
mbani-ya's group-2	50%
mbani-ya's group-1	0%
mbani-ya's group	0%

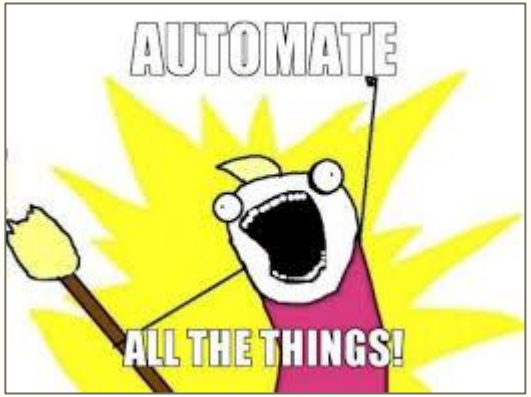
Learning better from Failures

Interactions are important to learn better

What I learned from 42KL



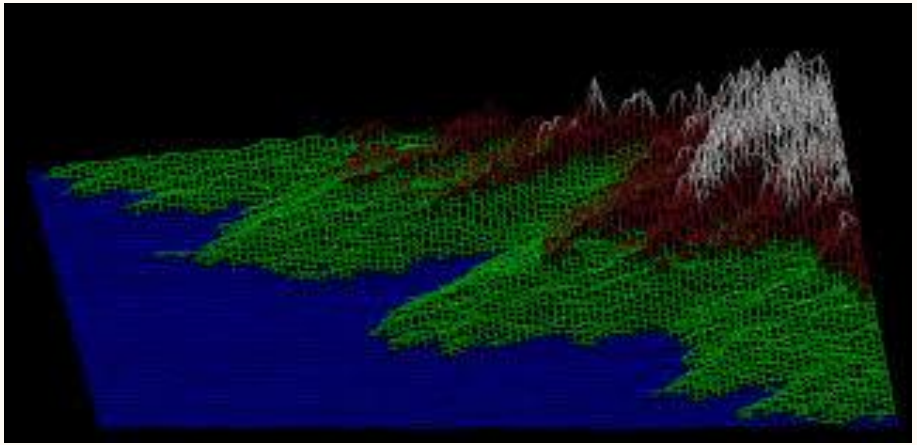
More familiar with
structure of
Bioinformatics software



Use Makefile/Scripts
For the whole DNA
processing.
3 line become 1 line

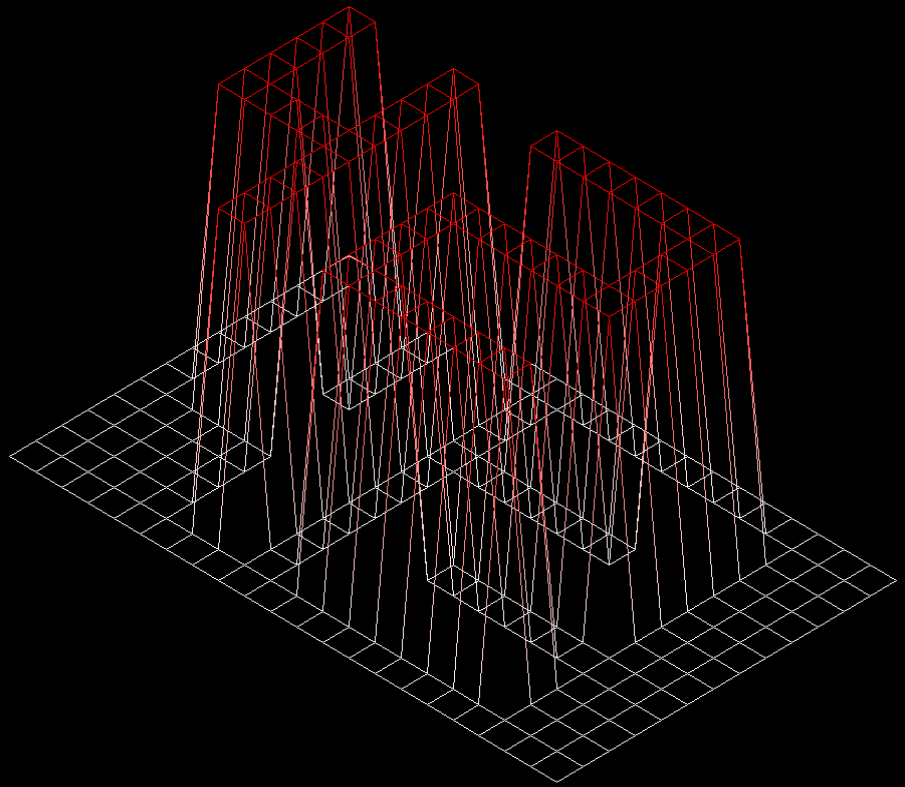
No need to wait & write
again and again.
3x faster & more convenient
For loops

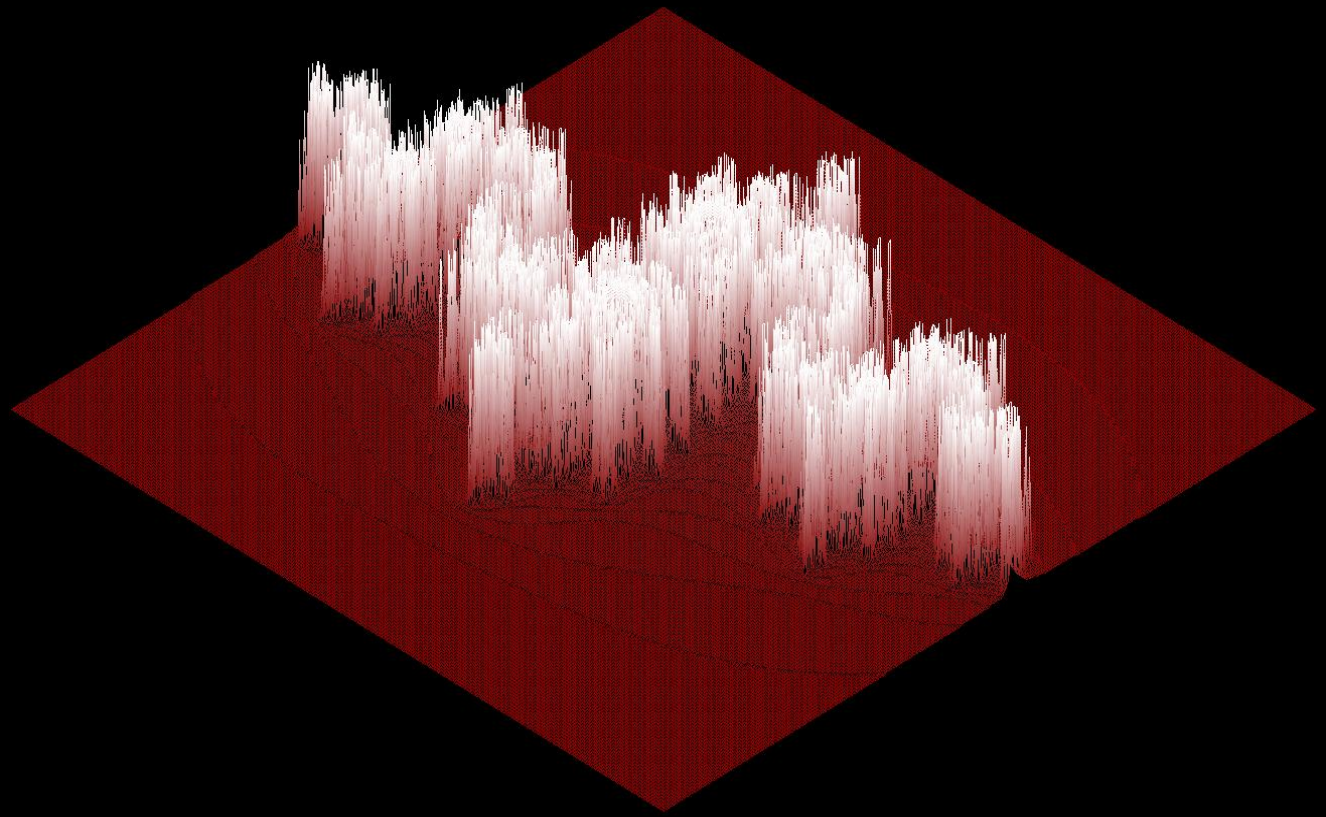
42KL



FDF

Fil de Fer (42KL Project)





The Goal of FDF

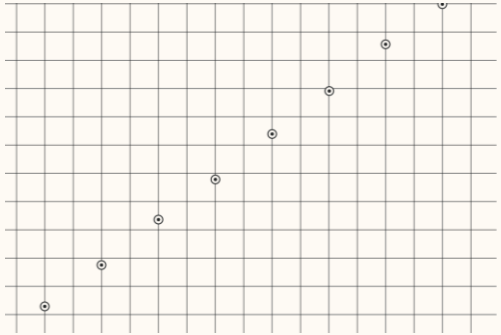
- Engineering 2D datasets into 3D Visualization
- Utilizing raw numbers given, calculating coordinates required to create an isometric projection
- Utilizing Bresenham or DDA Algorithm to draw lines between two points.

Flowchart of FDF

```
-6 -67 -61 -38 9 -16 -16 32 56 16
27 -63 23 -56 63 10 33 -9 -55 69
-44 -23 -58 12 -55 0 21 -25 27 48
1 41 -38 57 38 -17 -50 -2 -63 7
32 -46 -11 30 10 13 -48 -37 66 -53
-54 34 51 -40 -33 52 -62 -37 -54 -9
-58 40 -30 -9 59 7 -66 -12 -18 41
-50 67 36 13 12 -2 -28 10 -60 -58
3 -27 -52 56 26 -52 59 -31 -48 -6
-59 -30 50 36 5 -11 0 60 -24 -34
```

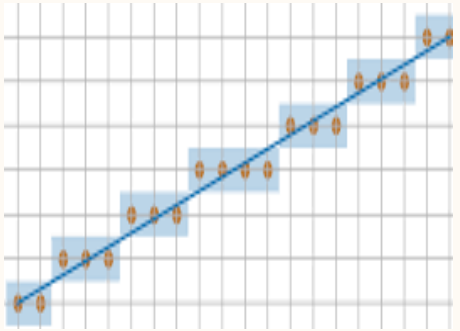
Parsing 2D Dataset

Process coordinates given (heights of each point)



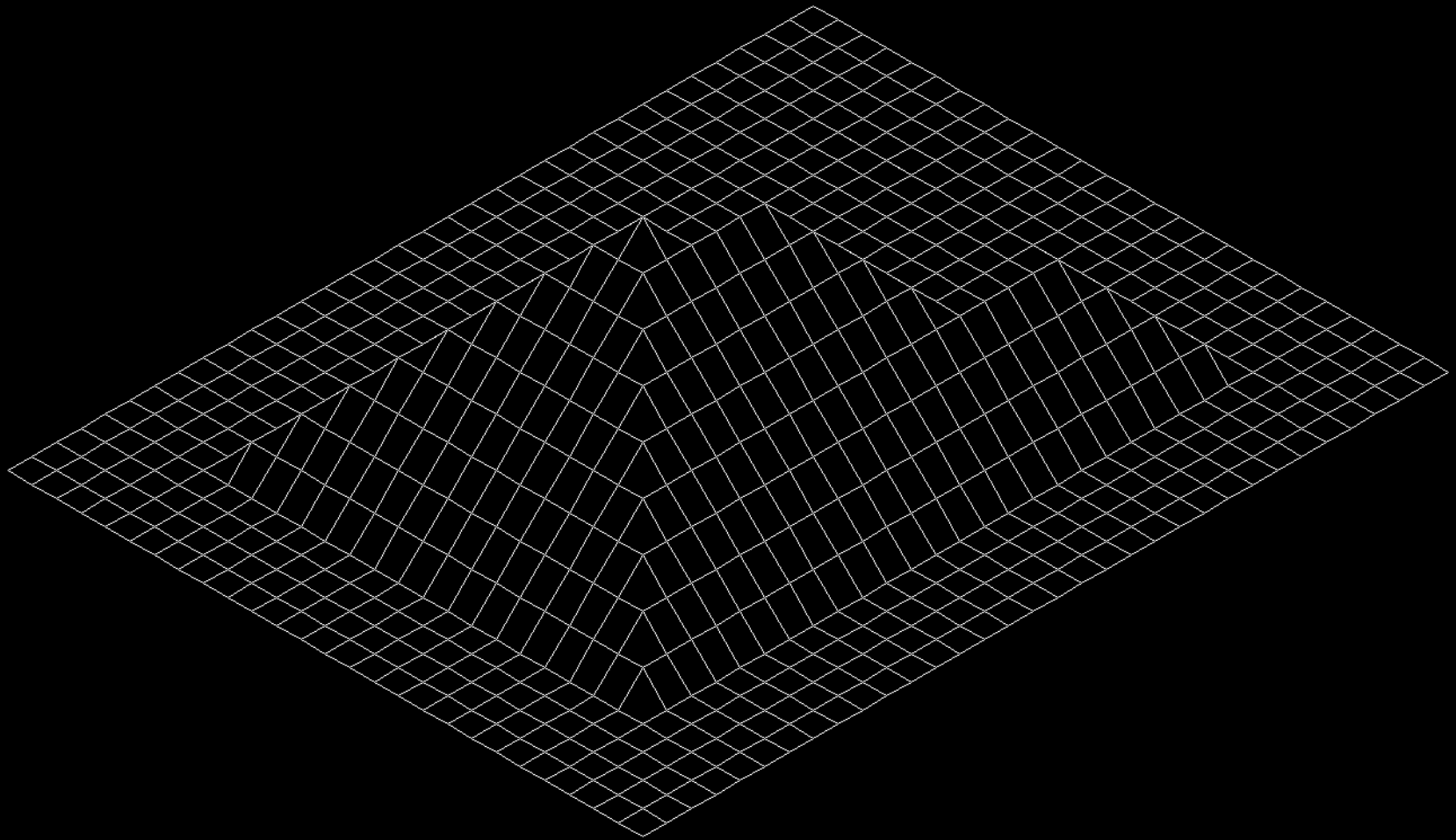
Recalculate for Pixel

Plot each given coordinate on pixel. Draw line in between the coordinate

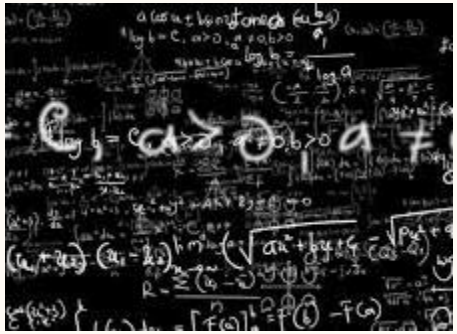


Draw the Lines

Draw The Lines Using Bresenham Algorithm



What I learned

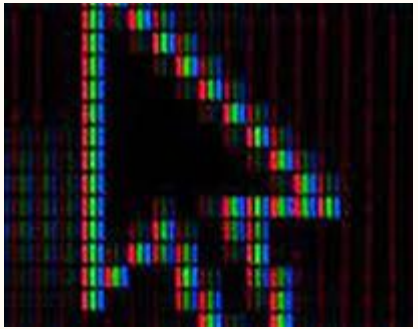


Trigonometry

Trigonometry concept illustrated 3D models

Colour

Colour gradient plays a role on how high a model appear



Pixel

The pixel is not actually straight but it appears slanted due to very small changes