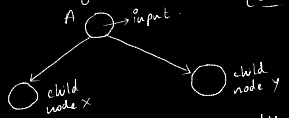
Adaptive ML model with hierarchical trees

So, hello everyone, this is Debasis Sikdar
I came up with an idea to implement a newer type of model [ML] which is more intuitive and can learn and understand data quite well.

I thought of using Heirarchical tree structure [BST]



where child node X and Y are sibling nodes, generating from the same parent A.

Node will consist
- input
- output
- id
- lowest [more like lowest]
- highest [more like highest]

So, how do we do the same for multifeatured classification?

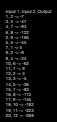
Suppose the dataset was,

X	Y	Z
1	2	7
-1	2	1
-4	6	0

Suppose Z → (output) can be [1, 2, 3, 4, 5]

Suppose equation is,
$f(x, y) \rightarrow 3x + 2y$

Let's see, how we can add these.



Example run [Classification for 1 feature]

Suppose the example

Weather data

Input	Outputs
1 → 10	Best [1]
11 → 20	Good [2]
21 → 30	Average [3]
31 → 40	Bad [4]
41 → 50	Worst [5]

So, initially, tree is empty

1st → (root)

2nd → 1st input goes in root

(23)

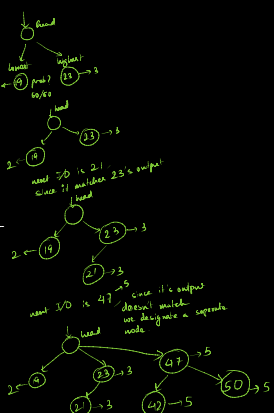
Since nothing is there, leaves are formed every node will have two leaves since it's a BST

3rd → 2nd input goes in 19

we search the tree, no range in 23 we know 19 should be in the lowest of 23

dataset

Suppose (training)
{ 23 (3), 19 (2), 21 (3), 47 (5), 42 (5), 50 (5) and testing set is
{ 24, 43, 50, 12 }



root I/O is 42, same output joins in

root I/O is 50, " " " "

now, test

24 → 1 is closest to 23, i.e. P(24) in P(23)

output → 3

43 → in range 47

output → 5

50 → is a node

output → 5

12 → no node closest is 19 P(12) in P(19) as it's nearer

output → 2