# INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY

## HYDERABAD

# Phase 3 : B+ Tree Project

Course Code: Data Systems (CS4.401)

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**Assumption**: If we have the fanout value = 'k', then a leaf node will consist of a maximum of 'k' Keys and 'k' corresponding Record pointers. Similarly, internal nodes will contain 'k-1' keys and 'k' tree/block pointers when at maximum capacity.

- Here the fanout is 3. The internal nodes have upto 2 keys and 3 Tree pointers each, and the leaf nodes have 3 keys mapped to 3 record pointers.
- There are some getters in InternalNode.cpp and LeafNode.cpp to fetch the above attributes using runtime polymorphism
- The delete_key and insert_key function has an additional parent argument to fetch the sibling.
- We have added an additional test_script `smol` in data\ to cover some rigorous test cases upto 3 levels and performs all 4 strategies in delete_key in the respective preference order as mentioned.

For **insertion** of 100 numbers in random order in our B-plus tree, we get the following range analysis: (shown for different values of fanouts).