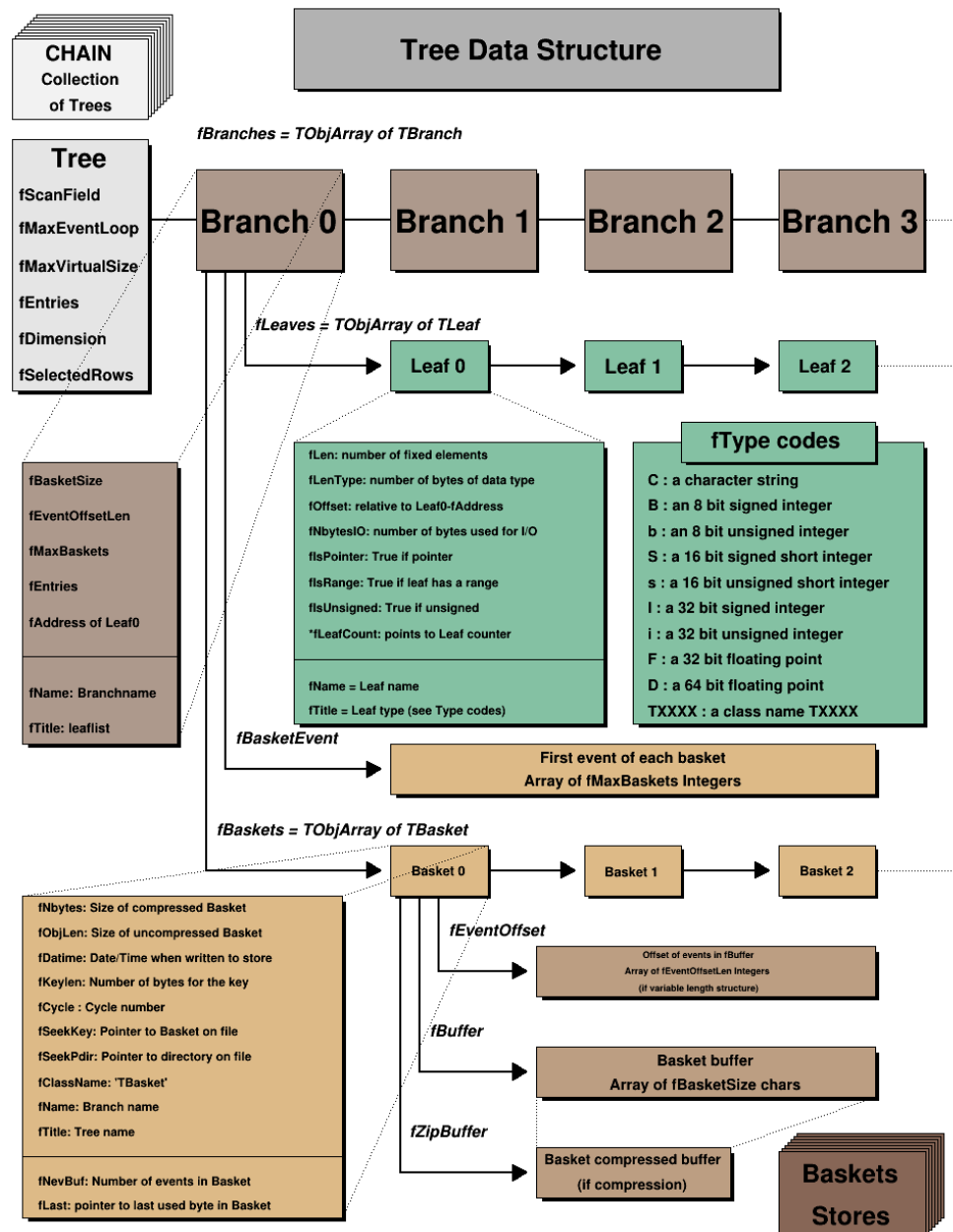


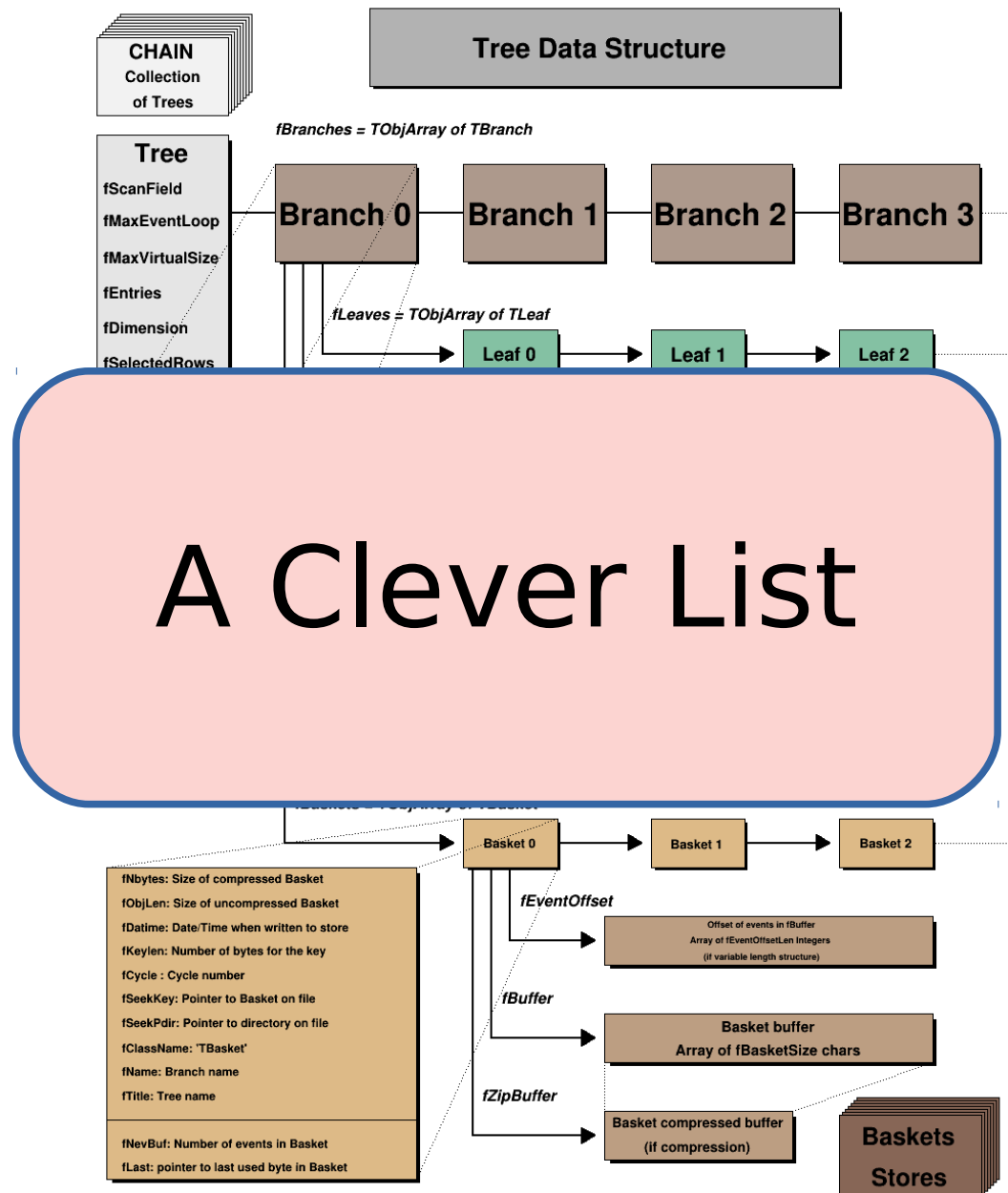
TTrees

March 2021 J. Smallcombe

What is a TTree?



What is a TTree?



TTree Format

Subatomic Physics “Event based”: Hit, Event, Entry

Typical tuple-type data format:

Entry No.	int A	int B	double C
0	1	3	4.0
1	5	8	6.5
2	5	7	3.2
3	89	5	15.2
4	7	1	14.2

TTree Format

- Branches:** List defines tree.
Each object we want in our correlated list is defined as a branch.
- Leaves:** Leaves are member variables of the branches classes
Simple data actually stored on disk
- Entries:** Every entry into the tree consists of one complete set of data for your branches.

Automatic compression

TTree Format

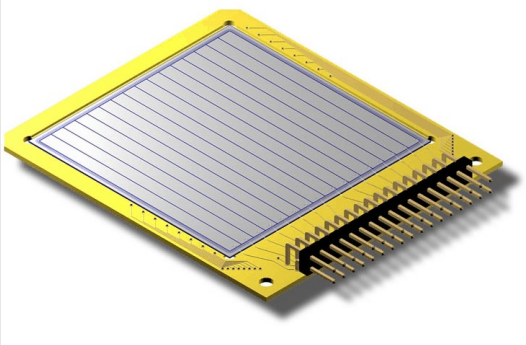
TTree header information (no manual reconstruction)

More complex objects store & read directly

Header	Branch	Name	A	vec1		
		Type	int	TVector3		
	Leaf	Name	A	fX	fY	fZ
		Type	int	double	double	double
			1	1.0	12.1	4.0
			5	12.3	4.2	6.5
			5	16.2	2.0	3.2
			89	12.5	6.3	15.2
			7	5.0	4.4	14.2

TTree Format

Can include vector type. (Can have zero data)

Header	Branch	Name	det1			
		Type	StripDet			
	Leaf	Name	stripX	energyX	stripY	energyY
		Type	vector<int>	vector<int>	vector<int>	vector<int>
			{}	{}	{}	{}
			{1}	{156}	{5}	{152}
			{}	{}	{}	{}
			{0,6}	{15,698}	{3}	{721}
			{4}	{1235}	{1,2}	{934,304}