

COMP9315 Asst3

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Team Out of memory

We create a relation with `./create R 4000 4 1000`. Then insert 1200 data in the R with command `./gendata 1200 R | insert R .`

GLOBAL INFO:

DYNAMIC:

items: tuples: 3099 tsigs: 3099 psigs: 32 bsigs: 32

pages: tuples: 32 tsigs: 7 psigs: 7 bsigs: 10

STATIC:

tups attrs: 4 size: 42 bytes max/page: 97

sigs bits/attr: 9

tsigs size: 64 bits (8 bytes) max/page: 512

psigs size: 5584 bits (698 bytes) max/page: 5

bsigs size: 56 bits (7 bytes) max/page: 585

Following is our test case.

One solution

case	normal	tsig	psig	bsig
1	21	5	6	11
2	21	7	6	10
3	21	7	6	11
sum	63	19	18	32

As we can see, the lowest cost is using page signature. Because we need 10 pages to store bit slide signature. For small amount data, the bit slide is not suitable.

Many solution

case	normal	tsig	psig	bsig
1	21	13	14	26

2	21	12	13	24
3	21	12	13	25
sum	63	37	40	75

The best result is using tuple signature, however the cost of page signature is quite close to the best result. The Bit slide cost even more than x normal cost, that's unexpected.

Multiple value				
case	normal	tsig	psig	bsig
1	21	5	6	11
2	21	5	6	11
3	21	5	6	10
sum	63	15	18	32

The lowest cost is still using Tuple signature. The result is quite similar to the One solution result.

Conclusion

For small dataset, the tuple signature have a best performance in general. For large dataset, the bit slide have lowest cost.