

mergetree family

1. Выбрали **VersionedCollapsingMergeTree** так как идет объединение по **Sign** и **Version**

```
CREATE TABLE tbl1
(
    UserID UInt64,
    PageViews UInt8,
    Duration UInt8,
    Sign Int8,
    Version UInt8
)
ENGINE = VersionedCollapsingMergeTree(Sign, Version)
ORDER BY UserID;
```

```
CREATE TABLE tbl1
(
    `UserID` UInt64,
    `PageViews` UInt8,
    `Duration` UInt8,
    `Sign` Int8,
    `Version` UInt8
)
ENGINE = VersionedCollapsingMergeTree(Sign, Version)
ORDER BY UserID
```

Query id: bb4ef64a-46db-433e-9474-4f56cd521232

Ok.

0 rows in set. Elapsed: 0.041 sec.

clickhouse-node.ru-central1.internal :) INSERT INTO tbl1 VALUES (4324182021466249494, 5, 146, -1, 1);

INSERT INTO tbl1 FORMAT Values

Query id: 6c0589fb-7686-4497-81e3-1adc63874858

Ok.

1 row in set. Elapsed: 0.006 sec.

clickhouse-node.ru-central1.internal :) INSERT INTO tbl1 VALUES (4324182021466249494, 5, 146, 1, 1),(4324182021466249494, 6, 185, 1, 2);

INSERT INTO tbl1 FORMAT Values

Query id: 8bede4d1-5756-47f2-b200-b82d53a35472

Ok.

2 rows in set. Elapsed: 0.006 sec.

clickhouse-node.ru-central1.internal :) **SELECT * FROM tbl1;**

SELECT *
FROM tbl1

Query id: e91cb918-c794-4669-9f50-5bf19f5e56ff

	UserID	PageViews	Duration	Sign	Version
1.	4324182021466249494	5	146	1	1
2.	4324182021466249494	6	185	1	2
3.	4324182021466249494	5	146	-1	1

3 rows in set. Elapsed: 0.003 sec.

clickhouse-node.ru-central1.internal :) **SELECT * FROM tbl1 final;**

SELECT *
FROM tbl1
FINAL

Query id: c6afd0a7-0c8d-4a13-b871-19c87944c09e

	UserID	PageViews	Duration	Sign	Version
1.	4324182021466249494	6	185	1	2

1 row in set. Elapsed: 0.005 sec.

clickhouse-node.ru-central1.internal :)

2. Выбрали SummingMergeTree, чтобы в результате merge в поле value получалась сумма.

```
CREATE TABLE tbl2
(
    key UInt32,
    value UInt32
)
ENGINE = SummingMergeTree(value)
ORDER BY key;

INSERT INTO tbl2 Values(1,1), (1,2), (2,1);

select * from tbl2;
```

```
CREATE TABLE tbl2
(
    key UInt32,
    value UInt32
)
ENGINE = SummingMergeTree(value)
ORDER BY key;
```

```
CREATE TABLE tbl2
(
    `key` UInt32,
    `value` UInt32
)
ENGINE = SummingMergeTree(value)
ORDER BY key
```

Query id: 32343a91-b033-4623-b087-9d49ef7eb8fe

Ok.

0 rows in set. Elapsed: 0.020 sec.

clickhouse-node.ru-central1.internal :) **INSERT INTO** tbl2 **Values**(1,1),(1,2),(2,1);

INSERT INTO tbl2 **FORMAT** Values

Query id: e8a618d8-9528-42d6-9fe4-4cd41226b92d

Ok.

3 rows in set. Elapsed: 0.004 sec.

clickhouse-node.ru-central1.internal :) **select** * **from** tbl2;

```
SELECT *
FROM tbl2
```

Query id: f0fc2895-5213-4492-8eb7-16eced14127d

1.

key	value
1	3
2	1

2 rows in set. Elapsed: 0.002 sec.

clickhouse-node.ru-central1.internal :)

3. Выбрали Replacing MergeTree так как нужно судя по выводу, чтобы оставался только последний вариант строки

```
CREATE TABLE tbl3
(
    `id` Int32,
    `status` String,
    `price` String,
    `comment` String
)
ENGINE = ReplacingMergeTree()
PRIMARY KEY (id)
ORDER BY (id, status);
```

```
CREATE TABLE tbl3
(
    `id` Int32,
    `status` String,
    `price` String,
    `comment` String
)
ENGINE = ReplacingMergeTree()
PRIMARY KEY (id)
ORDER BY (id, status);
```

```
CREATE TABLE tbl3
(
    `id` Int32,
    `status` String,
    `price` String,
    `comment` String
)
ENGINE = ReplacingMergeTree
PRIMARY KEY id
ORDER BY (id, status)
```

Query id: 330101df-dfce-4f0c-9761-9f9b38036ccf

Ok.

0 rows in set. Elapsed: 0.026 sec.

clickhouse-node.ru-central1.internal :) INSERT INTO tbl3 VALUES (23, 'success', '1000', 'Confirmed');

INSERT INTO tbl3 FORMAT Values

Query id: 8685d1de-6ac7-41b0-b1dc-984b00c03b3a

Ok.

1 row in set. Elapsed: 0.005 sec.

clickhouse-node.ru-central1.internal :) INSERT INTO tbl3 VALUES (23, 'success', '2000', 'Cancelled');

INSERT INTO tbl3 FORMAT Values

Query id: b4267187-dbf1-4cfb-8362-ad8531045528

Ok.

1 row in set. Elapsed: 0.004 sec.

clickhouse-node.ru-central1.internal :) SELECT * from tbl3 WHERE id=23;

```
SELECT *
FROM tbl3
WHERE id = 23
```

Query id: ff6af71a-ee31-4007-adf7-5d5ddad353fa

	id	status	price	comment
1.	23	success	1000	Confirmed
2.	23	success	2000	Cancelled

2 rows in set. Elapsed: 0.004 sec.

clickhouse-node.ru-central1.internal :) SELECT * from tbl3 FINAL WHERE id=23;

SELECT *

```
FROM tbl3
FINAL
WHERE id = 23
```

Query id: 3f2be078-b98f-4678-a822-8be55cbdaafe

```
1.  | id | status | price | comment |
    |---|-----|-----|-----|
    | 23 | success | 2000 | Cancelled |
```

1 row in set. Elapsed: 0.003 sec.

clickhouse-node.ru-central1.internal :)

4-5. Первая таблица является источником для второй и особых требований к ней не видно поэтому там будит тип MergeTree, а вторая содержит AggregateFunction , поэтому тут нужно применить AggregatingMergeTree

```
CREATE TABLE tbl4
(
    CounterID UInt8,
    StartDate Date,
    UserID UInt64
) ENGINE = MergeTree
PARTITION BY toYYYYMM(StartDate)
ORDER BY (CounterID, StartDate);
```

```
CREATE TABLE tbl5
(
    CounterID UInt8,
    StartDate Date,
    UserID AggregateFunction(uniq, UInt64)
) ENGINE = AggregatingMergeTree
PARTITION BY toYYYYMM(StartDate)
ORDER BY (CounterID, StartDate);
```

```
CREATE TABLE tbl4
(
    CounterID UInt8,
    StartDate Date,
    UserID UInt64
) ENGINE = MergeTree
PARTITION BY toYYYYMM(StartDate)
ORDER BY (CounterID, StartDate);
```

```
CREATE TABLE tbl4
(
    `CounterID` UInt8,
    `StartDate` Date,
    `UserID` UInt64
)
ENGINE = MergeTree
PARTITION BY toYYYYMM(StartDate)
ORDER BY (CounterID, StartDate)
```

Query id: 4bb9cc28-cfd3-456c-9784-6e8b5c1d9d46

Ok.

0 rows in set. Elapsed: 0.079 sec.

```
clickhouse-node.ru-central1.internal :) INSERT INTO tbl4 VALUES(0, '2019-11-11', 1);
```

```
INSERT INTO tbl4 FORMAT Values
```

Query id: 4958066f-4bdc-40af-8a5c-5a8a3f8f55ba

Ok.

1 row in set. Elapsed: 0.005 sec.

```
clickhouse-node.ru-central1.internal :) INSERT INTO tbl4 VALUES(1, '2019-11-12', 1);
```

```
INSERT INTO tbl4 FORMAT Values
```

Query id: 25e5cb94-fb7c-41a8-b7ef-c43375ece1a9

Ok.

1 row in set. Elapsed: 0.004 sec.

```
clickhouse-node.ru-central1.internal :) CREATE TABLE tbl5
(
    CounterID UInt8,
    StartDate Date,
    UserID AggregateFunction(uniq, UInt64)
) ENGINE = AggregatingMergeTree
PARTITION BY toYYYYMM(StartDate)
ORDER BY (CounterID, StartDate);
```

```
CREATE TABLE tbl5
(
    `CounterID` UInt8,
    `StartDate` Date,
    `UserID` AggregateFunction(uniq, UInt64)
)
ENGINE = AggregatingMergeTree
PARTITION BY toYYYYMM(StartDate)
ORDER BY (CounterID, StartDate)
```

Query id: 92a064ff-29f6-4fdc-8d87-e431b9f007f9

Ok.

0 rows in set. Elapsed: 0.060 sec.

```
clickhouse-node.ru-central1.internal :) INSERT INTO tbl5
select CounterID, StartDate, uniqState(UserID)
from tbl4
group by CounterID, StartDate;
```

```
INSERT INTO tbl5 SELECT
    CounterID,
    StartDate,
    uniqState(UserID)
FROM tbl4
GROUP BY
    CounterID,
    StartDate
```

Query id: 01e9e056-c13c-4d89-96fc-f3af4615a9a0

Ok.

0 rows in set. Elapsed: 0.005 sec.

```
clickhouse-node.ru-central1.internal :) INSERT INTO tbl5 VALUES (1,'2019-11-12',1);
```

```
INSERT INTO tbl5 FORMAT Values
```

```
Query id: 1f3c01c5-6611-4a8d-801e-2f7077d5552e
```

Ok.

Error on processing query: Code: 53. DB::Exception: Cannot convert UInt64 to AggregateFunction(uniq, UInt64): While executing ValuesBlockInputFormat: data for INSERT was parsed from query. (TYPE_MISMATCH) (version 25.3.5.42 (official build))

```
clickhouse-node.ru-central1.internal :) SELECT uniqMerge(UserID) AS state
FROM tbl5
GROUP BY CounterID, StartDate;
```

```
SELECT uniqMerge(UserID) AS state
FROM tbl5
GROUP BY
    CounterID,
    StartDate
```

```
Query id: 6a55aa8a-5508-4811-a0e2-9777f909ed5b
```

	state
1.	1
2.	1

2 rows in set. Elapsed: 0.005 sec.

```
clickhouse-node.ru-central1.internal :)
```

6. Выбрали CollapsingMergeTree(sign)

```
CREATE TABLE tbl6
(
    `id` Int32,
    `status` String,
    `price` String,
    `comment` String,
    `sign` Int8
)
ENGINE = CollapsingMergeTree(sign)
PRIMARY KEY (id)
ORDER BY (id, status);
```

```
CREATE TABLE tbl6
(
    `id` Int32,
    `status` String,
    `price` String,
    `comment` String,
    `sign` Int8
)
ENGINE = CollapsingMergeTree(sign)
PRIMARY KEY id
ORDER BY (id, status)
```

```
Query id: 4916f982-ae8e-436c-915c-51e33388729a
```

Ok.

0 rows in set. Elapsed: 0.037 sec.

```
clickhouse-node.ru-central1.internal :) INSERT INTO tbl6 VALUES (23, 'success', '1000',
'Confirmed', 1);
```

INSERT INTO tbl6 FORMAT Values

Query id: fdb5b900-d5e0-45c4-ba45-ec7ab4c852c1

Ok.

1 row in set. Elapsed: 0.005 sec.

clickhouse-node.ru-central1.internal :) **INSERT INTO tbl6 VALUES** (23, 'success', '1000', 'Confirmed', -1), (23, 'success', '2000', 'Cancelled', 1);

INSERT INTO tbl6 FORMAT Values

Query id: ca9af943-e7e7-4b80-92f0-5b988d1a8f95

Ok.

2 rows in set. Elapsed: 0.005 sec.

clickhouse-node.ru-central1.internal :) **SELECT * FROM tbl6;**

SELECT *
FROM tbl6

Query id: d426a962-06fc-46f0-ad3e-596549960c4d

	id	status	price	comment	sign
1.	23	success	1000	Confirmed	1
2.	23	success	1000	Confirmed	-1
3.	23	success	2000	Cancelled	1

3 rows in set. Elapsed: 0.003 sec.

clickhouse-node.ru-central1.internal :) **SELECT * FROM tbl6 FINAL;**

SELECT *
FROM tbl6
FINAL

Query id: d66c9d4b-b959-4ebd-944a-e32cb88bd34d

	id	status	price	comment	sign
1.	23	success	2000	Cancelled	1

1 row in set. Elapsed: 0.003 sec.

