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How to Use Firestore Increment

Firestore Increment

Increase a Counter

Decrease a Counter

Update a Floating Point Total

Counting Values in Separate Documents

Keep a Count of Documents in a Collection

Firestore Increment - Counters that Scale

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SLACK

Use the special Firestore Increment field value to increase or decrease numeric values atomically in the database. 463 words.

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Health Check

firebase@**5.9.3**

One of the common challenges faced when working with Firestore is maintaining an accurate count of a value on a document (or multiple documents). One cannot simply update a counter and expect it to be accurate because many clients might be competing to update the same value simultaneously. The solution to this problem has traditionally been to deploy a Cloud Function that runs the update in a transaction to guarantee an atomic update. This works great, but adds a significant amount of complexity for a relatively simple requirement.

Fortunately, Firebase recently introduced `FieldValue.increment` to make this process much, much easier. Let's take a look at how it works...

Firestore Increment

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Increment is a special value that will atomically update a counter based on the interval you specify. You do not need to read the document to obtain the current total - Firebase does all the calculation serverside. In most cases, you will be keeping a count by adding an integer of `1` to the current total.

Increase a Counter

```js
// app.js
const db = firebase.firestore();
const increment = firebase.firestore.FieldValue.increment(1);

// Document reference
const storyRef = db.collection('stories').doc('hello-world');

// Update read count
storyRef.update({ reads: increment });
```

Decrease a Counter

We can decrement a counter by simply changing the interval

JS app.js

```js
const decrement = firebase.firestore.FieldValue.increment(-1);


// Update read count
storyRef.update({ reads: decrement });
```

Update a Floating Point Total

It also works with decimal values, which can be useful when updating something like a user's order history total.

```js
const userRef = db.collection('users').doc('some-user');
const increaseBy = firebase.firestore.FieldValue.increment(23.99);


userRef.update({ totalSpent: increaseBy });
```

Counting Values in Separate Documents

In certain cases, your counter value may depend on the creation of a new document or just be located in a different document. You can use batched writes to ensure all data is updated safely. For example, we might want to create a *like* document, then update the total multiple places.

```js
const batch = db.batch();
batch.set(likesRef, ...likeData);
batch.update(storyRef, { likes: increment });
batch.update(userRef, { totalLikes: increment });
batch.commit();
```

Keep a Count of Documents in a Collection

Keeping a count of documents in a collection is perhaps the single most common form of data aggregation in Firestore. Prior to increment, we had the option to (a) read ALL documents clientside or (b) use a Cloud Function to keep a count of documents in a collection.

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Now, we have a third option. Create a document called `--sta...` maintaining aggregation or metadata about this collection. In your frontend code, use a batch to increment the stats when creating a new document.

```javascript
const storyRef = db.collection('stories').doc('hello-world');
const statsRef = db.collection('stories').doc('--stats--');

const increment = firebase.firestore.FieldValue.increment(1);

const batch = db.batch();
const storyRef = db.collection('stories').doc(`${Math.random()}`);
batch.set(storyRef, { title: 'New Story!' });
batch.set(statsRef, { storyCount: increment }, { merge: true });
batch.commit();
```

Q&A Chat

Have Questions? Let's chat about this post

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👇

Copy the link below and paste it into the **#questions** channel in Slack

@Question https://fireship.io/snippets/firestore-increment-tips/ your question...?

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imonje

your question...? anyone now if this funcionality can be use in firebase-functions?

Hide

ANSWER

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william

your question...?

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```
const batch = db.batch();
const storyRef = db.collection('stories').doc(${Math.random()});
batch.set(storyRef, { title: 'New Story!' });
batch.set(statsRef, { storyCount: increment }, { merge: true });
batch.commit();
```

In the above code, if for some odd reason the Math.random() ended up being the same as another document ID, would the increment at that point be 1 more than the actual total for the document collection? I am wondering since as I understand it, if set() finds a document at the referenced location, it overwrites it

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ANSWER

A Anne Jael

your question...? How to implement increment,decrement in flutter?

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ANSWER

Mystery Person

How would a security rule for incrementing / decrementing by one look like? Something like this? `allow update: if request.resource.data.counter == resource.data.counter + 1 || request.resource.data.counter == resource.data.counter -1;`

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ANSWER

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