

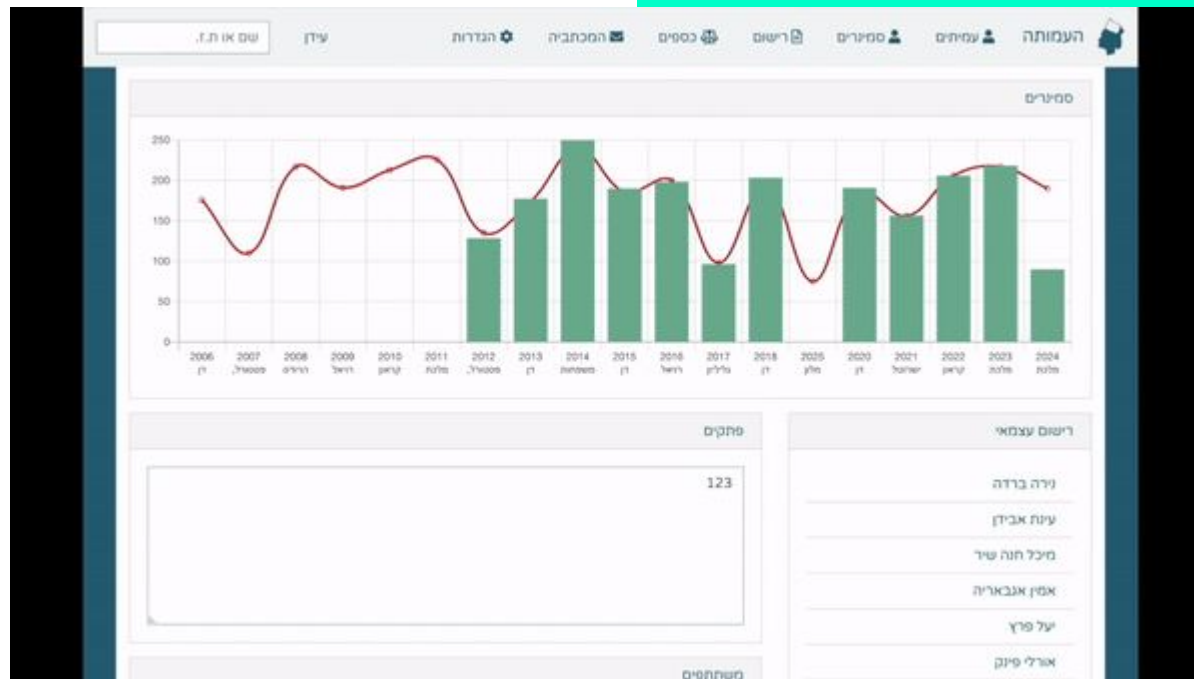
HOW JSON.STRINGIFY() COST ME \$8K

Idan Cohen || FE Lead @ UVeye || @Idan_Co

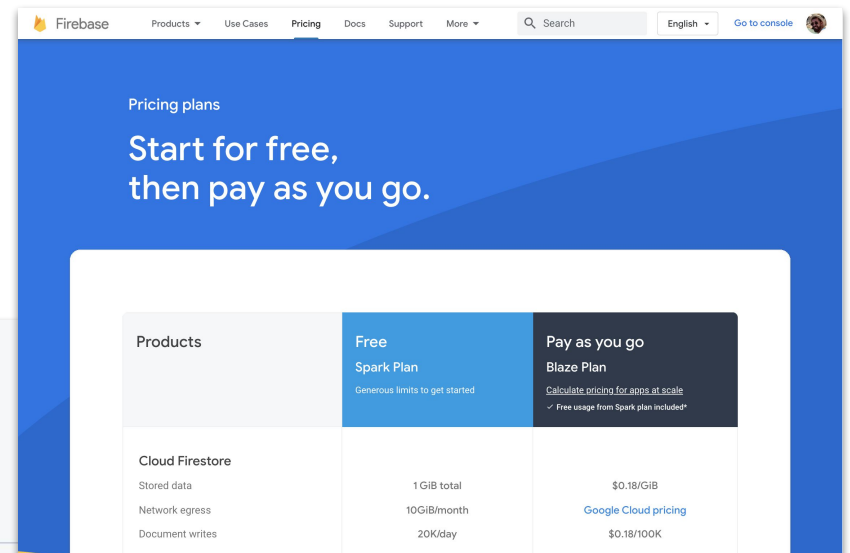
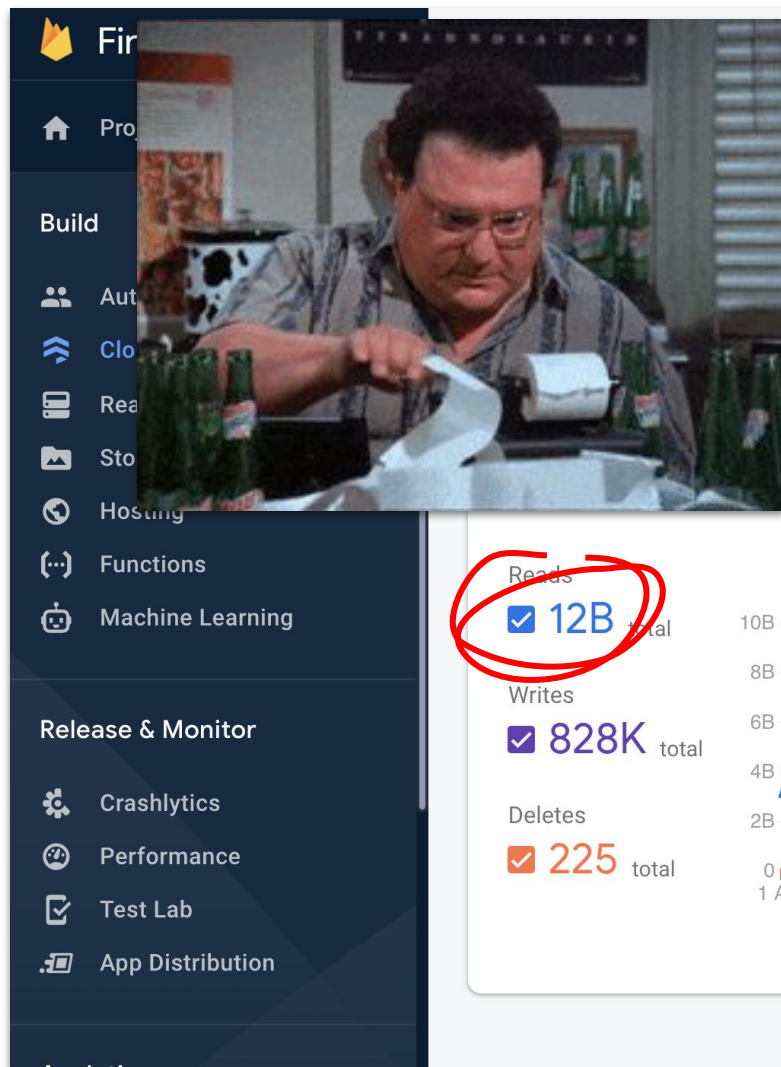
June 2021

MY SIDE PROJECT

- NPO
- >3 Years
- >30k Active Users
- >1k Concurrents
- Firebase & Angular



WHAT DOES B STANDS FOR?



Document reads

\$0.06/100K

Reads

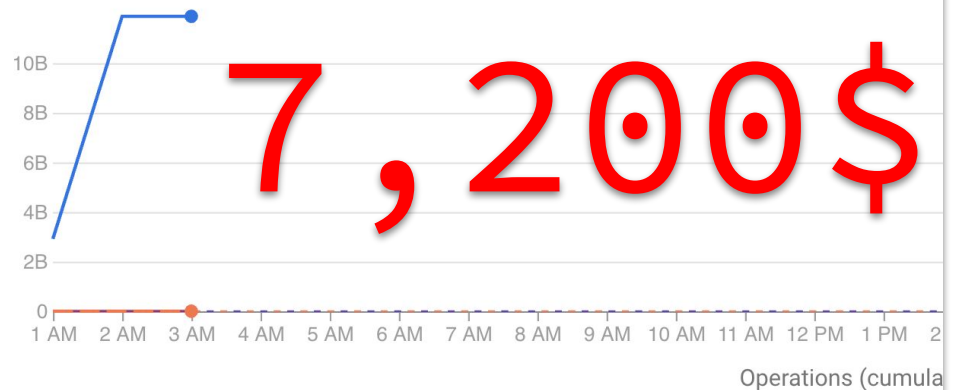
☒ 12B total

Writes

☒ 828K total

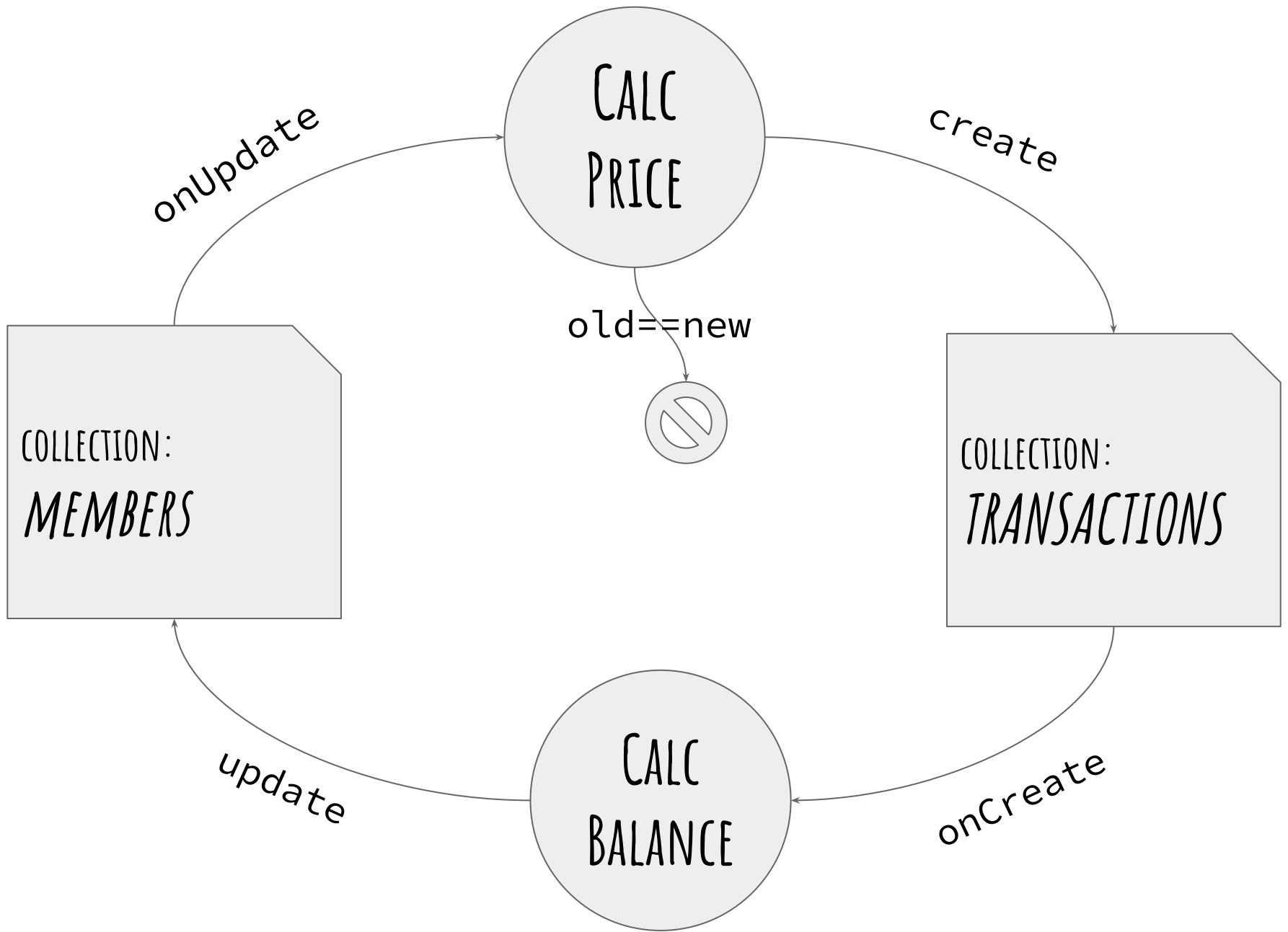
Deletes

☒ 225 total



IMMEDIATE REMEDY

- 1. Cancel my Credit Card**
2. Shutdown Production
3. Notify the Client
4. Backup the Project
5. Find the Cause



```
33      // rates changed?  
34  -    if ( JSON.stringify(oldRate) !== JSON.stringify(newRate) ||
```

🔗 **add participant creation, deletion
and update functions**

+309 -153 ■■■■ ■ ■



IdanCo committed on Nov 18, 2018

n, deletion and update functions

2 years ago

```
8      const oldParticipant =  
9      const newParticipant =  
0      const oldRate = oldPar  
1      const newRate = await  
2  
3      // rates changed?  
34     if ( JSON.stringify(o  
35         oldParticipant.semir
```

About 14,400,000 results (0.43 seconds)

stackoverflow.com

Object comparison

Object comparison in JavaScript [duplicate]

Asked 11 years, 8 months ago Active 8 months ago Viewed 1.1m times

10 Answers

Active

Oldest

Votes

Script?

1) Fast and limited.

Works when you have simple JSON objects.

Does not work for arrays and DOM nodes inside:

```
comparing rates { "includedDiscount": 300, "participantType": "עמית", "transportationType": "הגעה עצמאית", "value": 690 }  
                  { "includedDiscount": 300, "participantType": "עמית", "transportationType": "הגעה עצמאית", "value": 690 }
```

```
JSON.stringify(obj2)
```

The ORDER of the properties IS IMPORTANT, so this method will return false for following objects:

```
x = {a: 1, b: 2};  
y = {b: 2, a: 1};
```

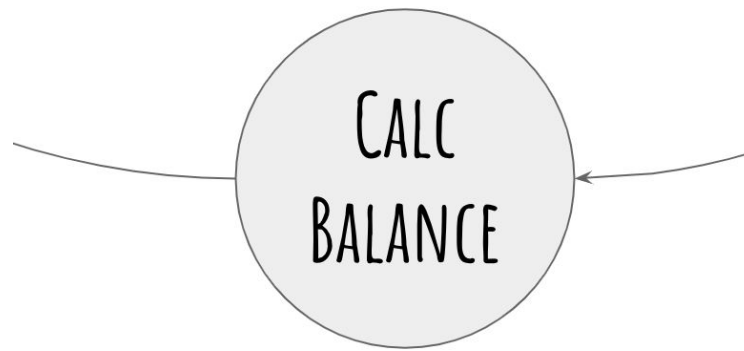
COMPARING JAVASCRIPT OBJECTS

The Right Way...

- Manual comparison
- Shallow equality
- Deep equality

[Further reading](#)

12B READS?



1 projects/functions/src/utils.ts

```
@@ -18,6 +18,7 @@ export async function updateMember(memberId: string) {
```

```
18     const db = admin.firestore();
19     const transactions = await
    db.collection('transactions')
20       .where('member', '==', memberId)
```

```
21       .get();
22     let totalBalance = 0;
23
```

```
18     const db = admin.firestore();
19     const transactions = await
    db.collection('transactions')
20       .where('member', '==', memberId)
21       + .limit(1000)
22       .get();
23     let totalBalance = 0;
24
```

```
const increment = admin.firestore.FieldValue.increment(transaction.credit ?
return db.doc(`members/${memberId}`).update({ totalBalance: increment });
```

AGGREGATING DOCUMENTS

The Right Way...

- Deltas VS Sum
- Firebase increment

[Further Reading...](#)

NEXT STEPS

1. Deploy a Fix
2. Investigate why Alerts didn't work
3. Reach Out to Google

- Billing
- Overview
- Reports
- Cost table
- Cost breakdown
- Commitments
- Budgets & alerts
- Billing export
- Pricing
- Documents

Budgets & alerts
 Firebase Payment
 + CREATE BUDGET
 DELETE

Budgets track expenses within a Google Cloud Platform project or billing account. Your budget can be a specified amount or based on previous spend. You can set alerts to notify billing admins and users when a budget goes over a specified amount.

Setting a budget does not cap resource or API consumption. [Learn more.](#)

<input type="checkbox"/>	Budget name ↑	Budget type	Applies to	Trigger alerts at	Spend and budget amount
<input type="checkbox"/>	Firebase Project	Specified amount	Project "angular-firebase-demo"	50%, 90%, and 100%	<div></div> ₪0.00 / ₪10.00 No credits used
<input type="checkbox"/>	Firebase Project	Specified amount	Project "Find the Afikoman"	50%, 90%, and 100%	<div></div> ₪0.00 / ₪50.00 No credits used
<input type="checkbox"/>	Firebase Project	Specified amount	Project "slinky"	50%, 90%, and 100%	<div></div> ₪0.00 / ₪25.00 No credits used
<input type="checkbox"/>	Firebase Project	Specified amount			<div></div> ₪0.00 / ₪100.00 No credits used
<input type="checkbox"/>					<div></div> ₪2.71 / ₪200.00 Excludes -₪0.87 credit

100% of budget reached

Google Cloud

Billing Budget Alert

100% of budget reached

Billing account: Firebase Payment
03:51 17/01/20

Budget Amount	Budget Period
₪200.00	2021-01-01 – 2021-01-31

No credits used

₪0.00 / ₪100.00

No credits used

₪2.71 / ₪200.00

Excludes -₪0.87 credit

03:51 17/01/20



SETTING UP LIMITS & ALERTS

The Right Way...

- Execution Time
- Reads & Writes
- Memory Usage
- Capping API
- Use Pager Duty
- Automation

[Further reading...](#)

LONG TERM

1. Write Tests
2. Logging
3. Limit Queries
4. Setup Budgets & Alerts
5. Become a Better Developer
6. Speak About It

HAPPY ENDING...



Google Cloud Support

to me ▾

Thu, Feb 11, 3:33 PM



Hello Idan,

Thank you for your patience.

I have excellent news, the adjustment to your billing account was approved today for ₪18,003.42 ILS and the adjustment back to your payment method was for ₪400.00 ILS. Also, the updated balance on the account is ₪5,706.95 ILS. So now your banking institution will have to release the amount back to your method of payment and that usually takes from 5 to 10 business days on behalf of Google. Remember that you can see your balance, the details and the adjustments on the transaction history [1] and that you can make a manual payment to clear the remaining balance with help of the next link [2].

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