



Technical Support Engineer - Take Home Exercise

As a Technical Support Engineer, you will communicate with Plaid's customers primarily via email. Challenges 2-4 are a few examples of support requests you might see. Please create a new file (.doc, .docx, or .pdf would be great) and respond to the challenges below as if you were replying to a real customer on a support ticket. The ideal response will be accurate, clear, empathetic, resourceful and helpfully formatted.

Challenge 1

Following the instructions in [Plaid's Get started with the Quickstart](#) (without Docker), set up a local application to create a new Item using Sandbox credentials. Once you've created an Item, please provide the following information:

- The programming language used to setup the Quickstart -> Backend: Node.js (javascript), Frontend: React
- The access_token that was generated :
access-sandbox-e1acabd2-2ef7-4569-b3ac-1d71991833a2
- Names of all the accounts and their respective balances. Please include a screenshot of the information returned. (screenshots on last page)

	Balance
Plaid Checking: 'Plaid Gold Standard 0% Interest Checking',	\$100
Plaid Savings: 'Plaid Silver Standard 0.1% Interest Saving',	\$200

- The account numbers, routing numbers, and account_ids for the "Plaid Checking" and "Plaid Saving" accounts

	Routing Number	Account Number	Account Id
Plaid Checking	011401533	1111222233330000	ZPbjkW7De4IQj1IIPbj MUrEmZwLj7QFeGQ ZWA
Plaid Savings	011401533	1111222233331111	MylZnDqGo8Sre6VV DLexTK5MEQxWIBC L1nakj

Challenge 2: *A client is reaching out with a question about a particular error.*

Hi Plaid Support,

I have a user that is complaining that they cannot link their account to First National Bank. The error they get back is `INVALID_CREDENTIALS`. They are claiming that they are typing in the correct information. Are there any troubleshooting steps that my user can take?

Thanks,
Ernie Hudson

Hello Ernie,

There are several steps that can be taken to troubleshoot. Please complete the following steps:

1. Prompt your user to retry entering their credentials.
 - a. Note: The Institution may lock a user out of their account after 3-5 repeated attempts, resulting in an `ITEM_LOCKED` error.
2. Confirm that the credentials being entered are correct by asking the user to test logging in to their financial institution website using the same set of credentials.
3. The user should check their financial institution website for special settings to allow access for third-party apps, such as a "third party application password" or "allow third party access" setting.
4. Verify that the user is selecting the correct institution in Link's Institution Select view.

If the credentials are confirmed to be legitimate, and a user still cannot authenticate, please submit an 'Invalid credentials errors' Support ticket with the following identifiers: `access_token`, `institution_id`, and either `link_session_id` or `request_id`.

Challenge 3: *A client is reaching out with a question about implementation.*

Hi Plaid Support!

We were surprised to find out that Plaid allows a user to link the same Item multiple times. We'd like to prevent this from happening. Don't your docs say that you block this kind of thing? How can we prevent users from linking the same account multiple times?

Your Friend,
Bill Murray

Hello Bill,

Duplicate items can happen for a couple of reasons. A duplicate Item can occur if a user accidentally links the same account more than once, because they do not realize they already linked an account, or because their linked account is no longer working.

Duplicate Items can create confusing or unwanted behavior in your application and could result in being potentially billed for multiple Items. We recommend building safeguards in your application to help prevent end users from creating duplicate Items.

There are several ways to build in these safeguards one is using the onSuccess callback. You can find more details and several other ways to safeguard against duplicate items at the following link: <https://plaid.com/docs/link/duplicate-items/>.

Challenge 4: *A client is reaching out with a question about transactions data.*

Hi Plaid,

I'm recently integrated with Plaid and I'm starting to see duplicate transactions pop up in my database. The pattern seems to be that Plaid returns each transaction and then returns that same transaction again roughly two days later but under a new transaction_id. Could you please take a look at let me know what's going wrong here? Here is one example of the duplicates I'm seeing:

```
{
  "account_id": "vokyE5Rn6vHKqDLRXEn5fne7LwbKPLIXGK98d",
  "amount": 2307.21,
  "iso_currency_code": "USD",
  "unofficial_currency_code": null,
  "category": [
    "Shops",
    "Computers and Electronics"
  ],
  "category_id": "19013000",
  "date": "2017-01-29",
  "location": {
    "address": "300 Post St",
    "city": "San Francisco",
    "region": "CA",
    "postal_code": "94108",
    "country": "US",
    "lat": null,
    "lon": null
  },
  "name": "Apple Store",
  "payment_meta": Object,
```

```

"pending": false,
"Pending_transaction_id":
"1PNjeW1nR6CDn5okmGQ6hEpMo4lLNoSrzdJe", "account_owner":
null,
"transaction_id": "4WPD9vV5A1cogJwyQ5kVFB3vPEmpXPS3qvjXQ",
"transaction_type": "place"

},

{
"account_id": "vokyE5Rn6vHKqDLRXEn5fne7LwbKPLIXGK98d",
"amount": 2307.21,
"iso_currency_code": "USD",
"unofficial_currency_code": null,
"category": [
"Shops",
"Computers and Electronics"
],
"category_id": "19013000",
"date": "2017-01-27",
"location": {
"address": "300 Post St",
"city": "San Francisco",
"region": "CA",
"postal_code": "94108",
"country": "US",
"lat": null,
"lon": null
},
"name": "Apple Store",
"payment_meta": Object,
"pending": true,
"pending_transaction_id": null,
"account_owner": null,
"transaction_id": "1PNjeW1nR6CDn5okmGQ6hEpMo4lLNoSrzdJe",
"transaction_type": "place"
}

```

Best,
Janine Melnitz

Hello Janine,

Upon looking into the code sample that you provided the transactions are not actually duplicated. The first transaction is in the pending state as most institutions provide the pending transaction. The following transaction is showing that it has been posted. If you are finding that you are having too many entries in your database you can do the following:

To manage the movement of a transaction from pending to posted state, you will need to handle the `TRANSACTIONS_REMOVED` webhook to identify the removed transactions, then delete them from your records. For detailed instructions, see [Transactions webhooks](#).

Best Regards,

Mariyah Watson



Your accounts

Plaid Quickstart requires access to all these
Capital One accounts.



Plaid Checking • 0000

\$100.00



Plaid Saving • 1111

\$200.00

Continue

Name	Balance	Account #	Routing #
Plaid Checking	100 USD	1111222233330000	011401533
Plaid Saving	200 USD	1111222233331111	011401533