




Becoming an apps master: Connecting apps to QuickBooks Online – the right way.

Liz Scott





**Take a minute
to connect with
your neighbor**

#QBConnect | WiFi: QBConnect

CPE Process

In order to receive CPE credit

- Be sure to sign in or scan your badge for this session
- You must stay in the session for the duration of the training
- This session is eligible for **1 hour of CPE**
- CPE certificates are emailed directly to you within 4 weeks of the conference date to the same email address you used to register

Related sessions



Apps & Automation for Your Firm – Michelle Long on Wed 10:30

Discover benefits of standardizing and automating workflows for your clients data and your firm too. We will discuss several possible apps for many workflows to APPify the Processes™ for your clients and your firm.



Tech Stack Implementation – Erin Vukelich, on Wed 10:30 and 1:00

Learn to review, test, and onboard your clients onto your chosen tech stack applications. Focusing on client impact, we will review techniques to begin the implementation process and duplicate it in the future.



Becoming an Apps Master: Connecting Apps to QBO Database, for Your Clients – Liz Scott on Wed 2:30 and Thurs 9:00

Gain insight into the design and configuration of the QuickBooks Online database. Learn safeguards and limitations of the database as well as basic tables structure knowledge useful for connecting 3rd party apps.

Today's speaker



Liz Scott

Accounting Technology Wiz

Twitter @LizScottQBO

About today's speaker



Twitter @LizScottQBO

Liz Scott

Accounting Technology Wiz

Co-Host QB 'Appy Hour

Managing Member of Accounting Lifeline

Member Intuit Trainer/Writer Network

Advanced Certified QuickBooks Advisor

Insightful Accountant's Contributing Author and Co-Host of QBTalks

International Speaker and Trainer

Agenda

QuickBooks Online (QBO) understanding the platform

The safeguards and limitations of the QuickBooks Online database

Examine the QuickBooks Online tables when connecting to 3rd party apps

Considerations when connecting apps

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QuickBooks Online Understanding the Platform

How does it all fit together?

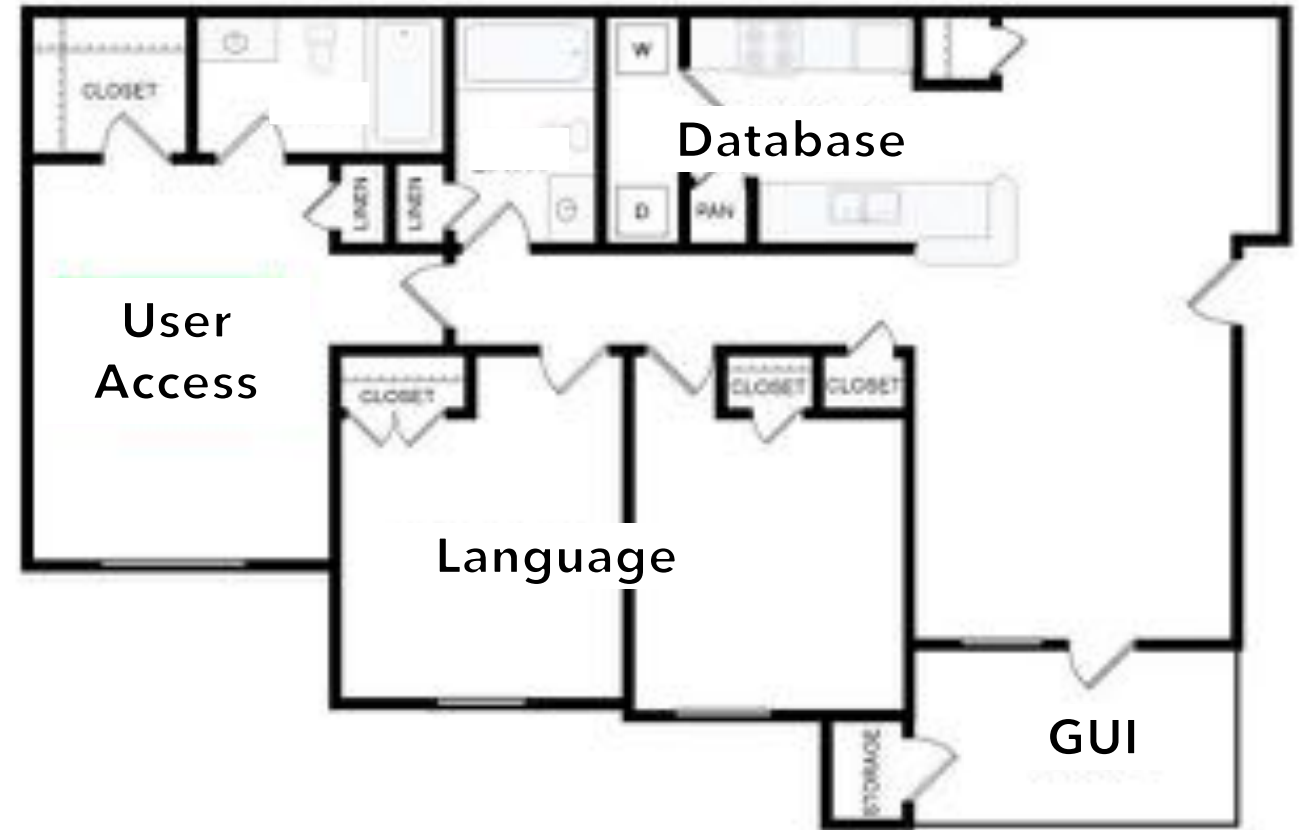
Just like the framework on a house
QuickBooks has framework it is
structured within.

QuickBooks uses the AWS platform
as the framework to hold together the
systems required to run and access
the database.



QuickBooks platform

The QuickBooks proprietary platform requires each element to run within the constraints making use of its facilities.

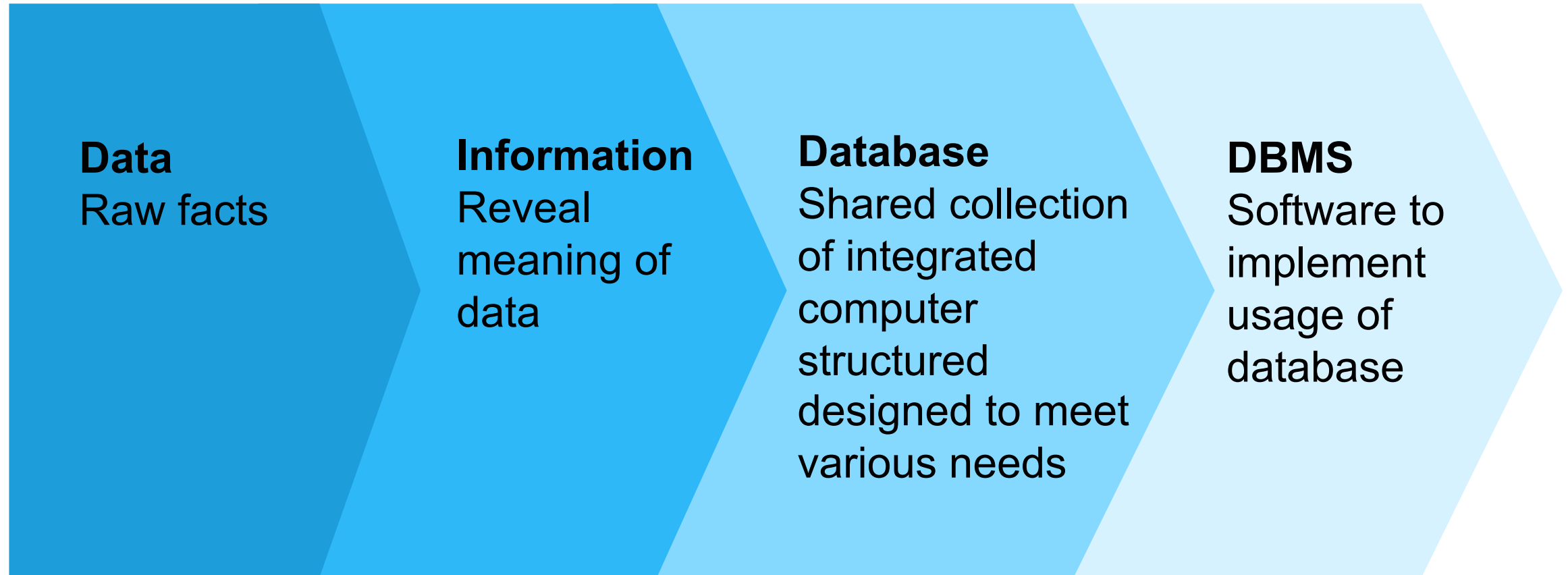


What is a database?

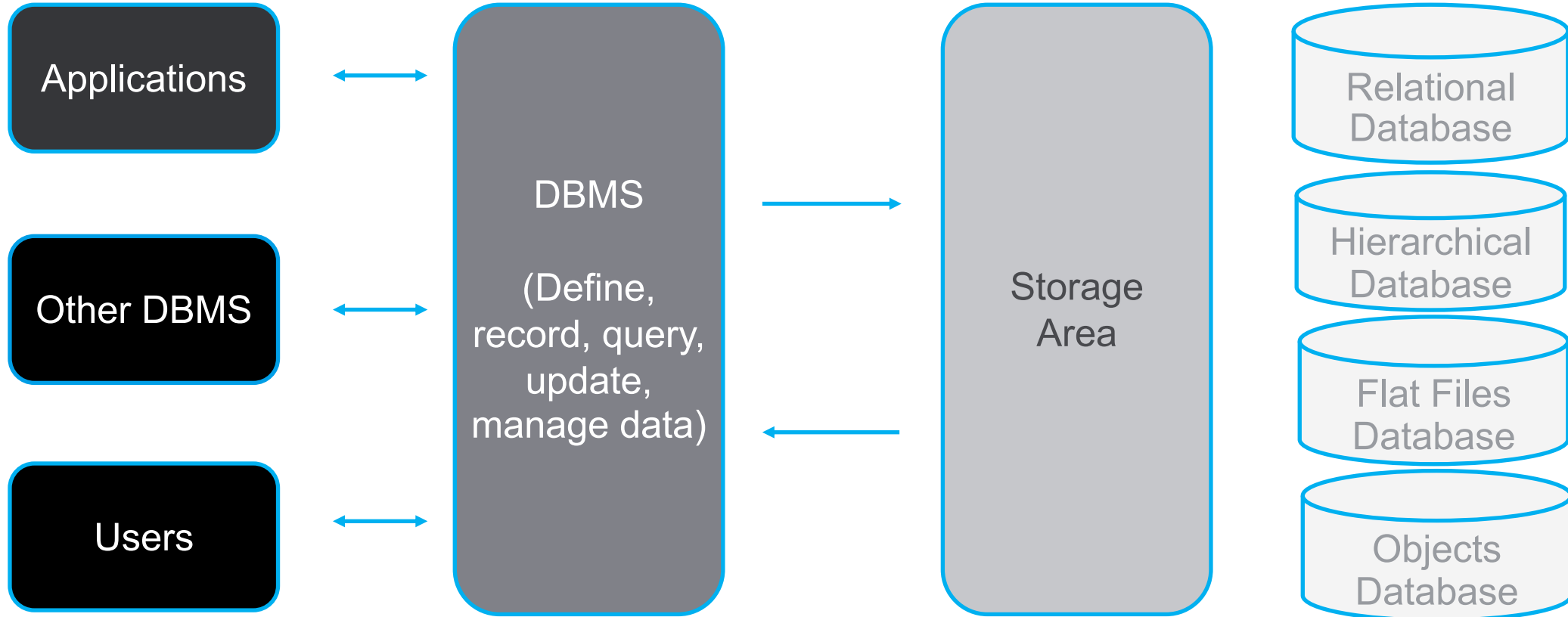
A structured set of data held, which is accessible in various ways



Database elements



Database structure



Database examples





Intuit Developer

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QuickBooks API Resources

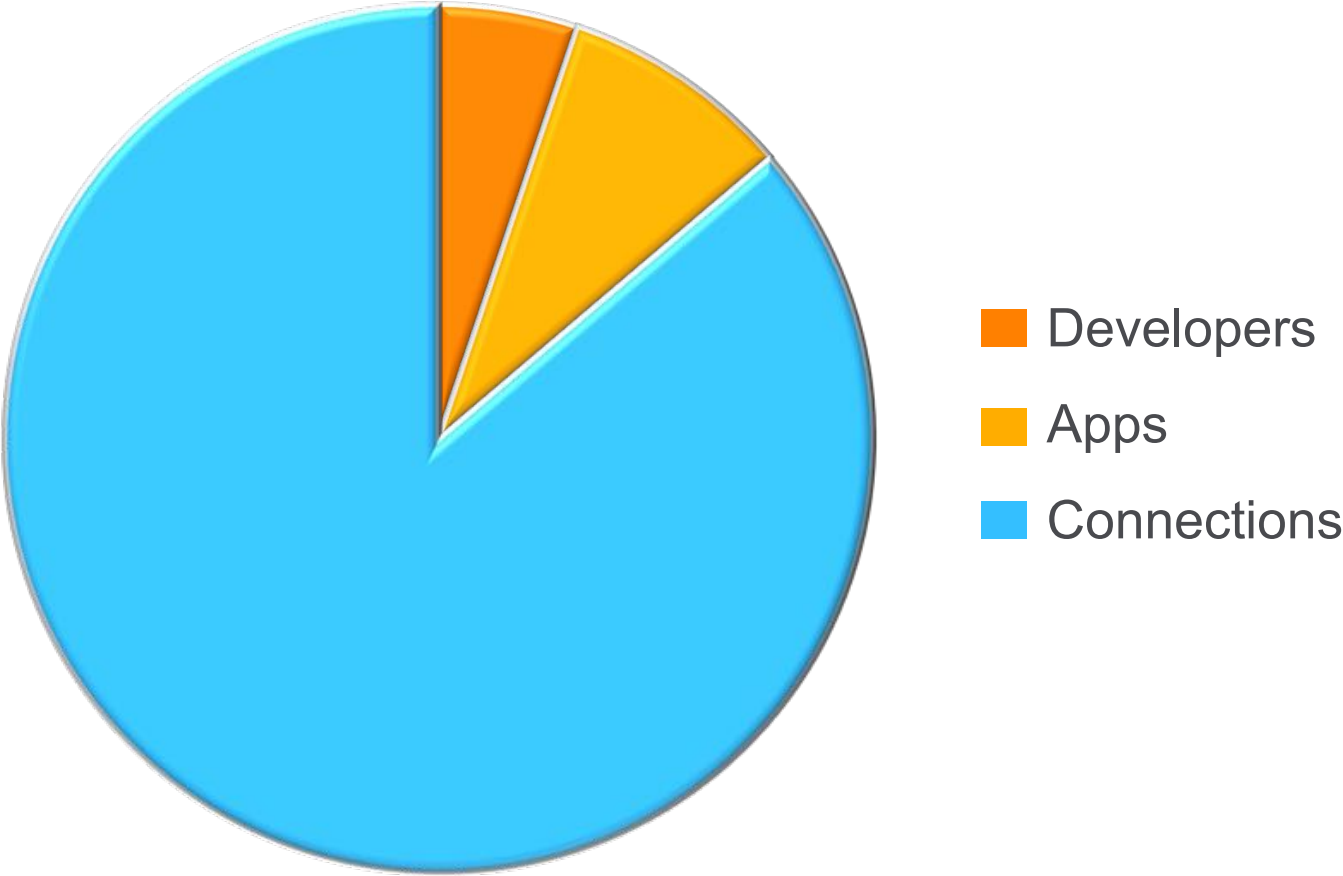
QuickBooks API Operations

Developer Tools



Designed for Delight

intuit Developer

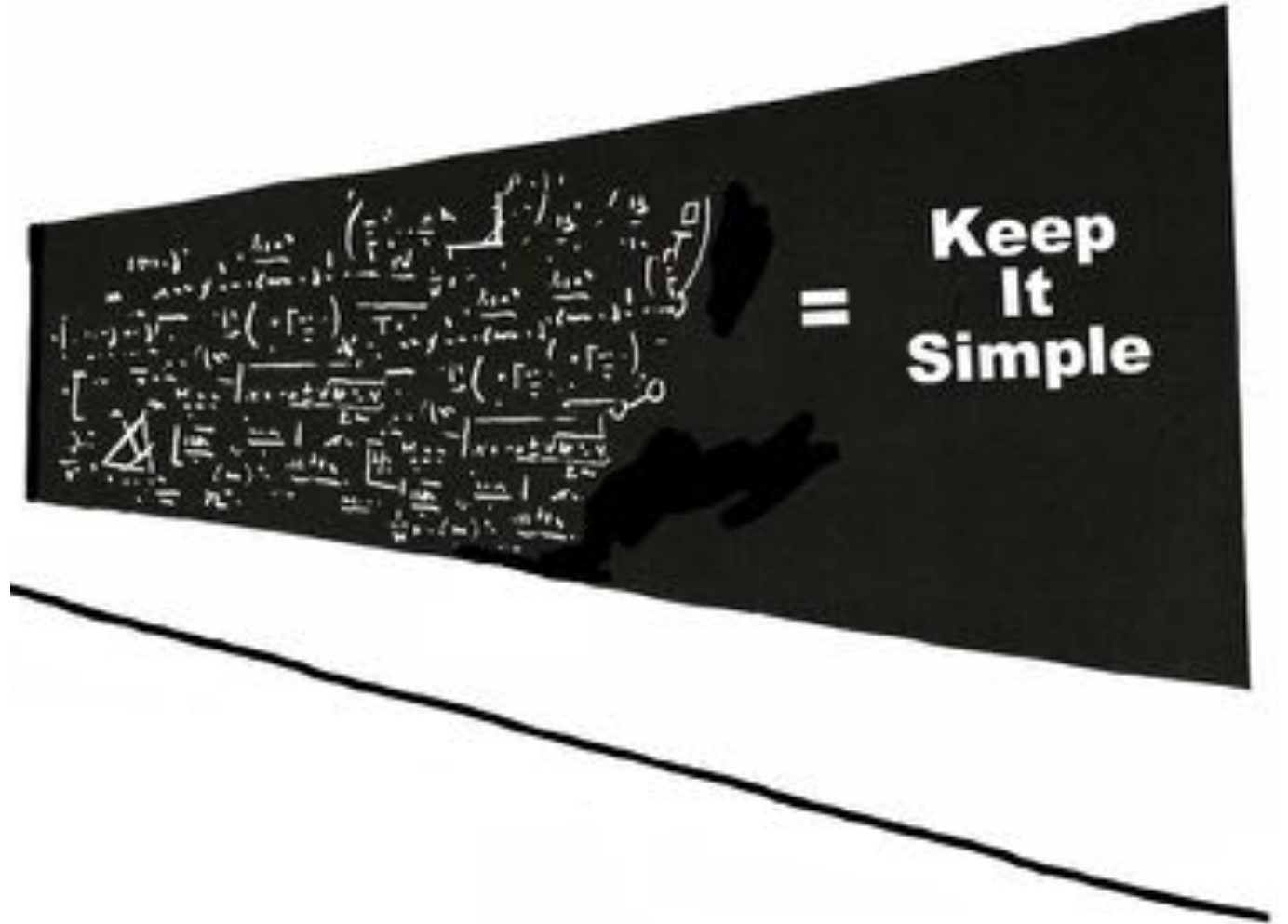


QuickBooks Online API Vision



QuickBooks Online platform functionality

QBO database structure design, layout, and format is created to be easy to use and connect to

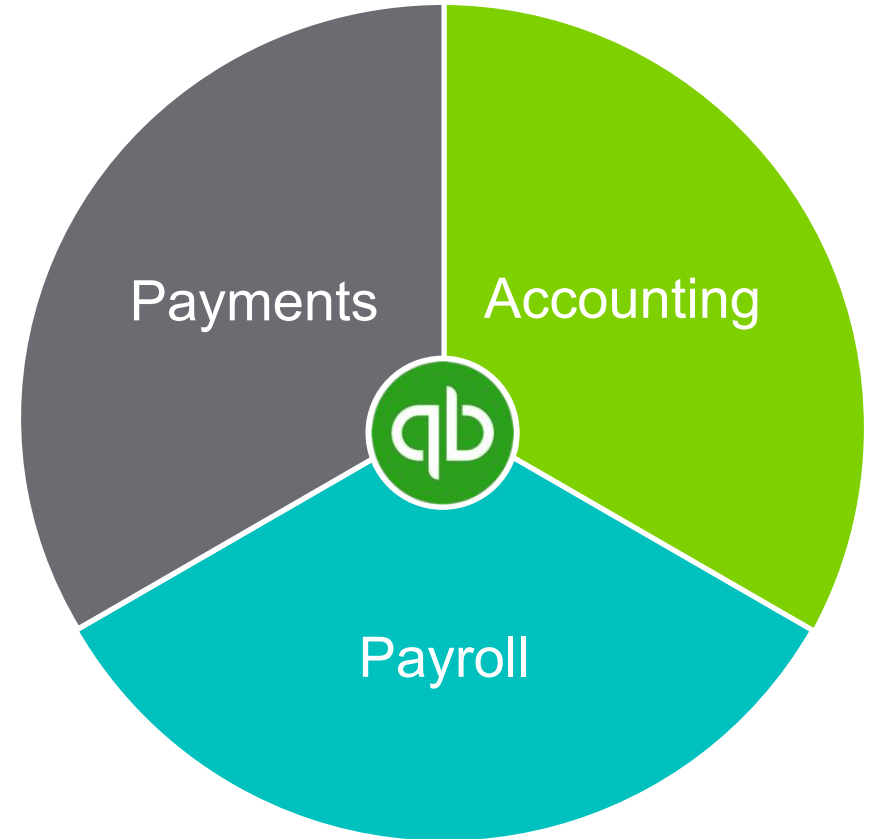


Developer access to QuickBooks Online

QuickBooks Online API

The QuickBooks Online API is one single platform as of 2018

QuickBooks Online is both an application and a flat file database that stores your data in a proprietary file format on AWS's cloud servers



Developer access to QuickBooks Online


Application Programming Interface

The language used to create functions and procedures allowing applications access to communicate with the data



QuickBooks Online supported API operations






The Safeguards and Limitations of the QBO Database

Safeguards and Limitations of the QBO Database



	Safegaurds	Limitations
Lesser Degree of Data Accessibility	✓	
Higher Degree of Data Integrity	✓	
Higher Degree of Data Connectivity (support)	✓	
Higher Degree of Connectivity Conformity	✓	
Limited access to some of the data*		✓
No access to some of the data (API limitations)		✓
Limited ability to use data for reporting/integration*		✓
Limited ability to manipulate* and repair data		✓

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Accessing QuickBooks Online

API / OAuth2

Developer access to QuickBooks Online

Access the open API

Applications that wish to connect to QBO must communicate directly with Intuit's API parameters for purposes of file access authentication and data query



Accountant and client user access



Intuit uses the “OAuth2”

A screenshot of the Intuit QuickBooks sign-in page. It features the Intuit logo at the top, followed by the QuickBooks and TurboTax logos. Below these is a 'Sign In' heading. There are two input fields: 'User ID' and 'Password'. A checkbox labeled 'Remember my user ID' is located below the password field. At the bottom is a green 'Sign in' button with a lock icon.

Developer creating app with access

App developers must select QBO “scope”

OAuth 2.0 Playground

▼ 1. Get authorization code

No apps found. ▼

The playground is configured and ready to use with your own app's credentials from the Keys tab on the app dashboard, including the playground's OAuth 2.0 redirect URI. If this redirect URI is no longer listed on your Keys tab, click here to add it.

Client ID

Client Secret

Scopes

Select Scopes ▼

Get authorization code



Scopes

Select Scopes ▼

- ☐ Accounting
- ☐ Payments
- ☐ OpenID
- ☐ Profile
- ☐ Email
- ☐ Phone
- ☐ Address

App access to QuickBooks Online

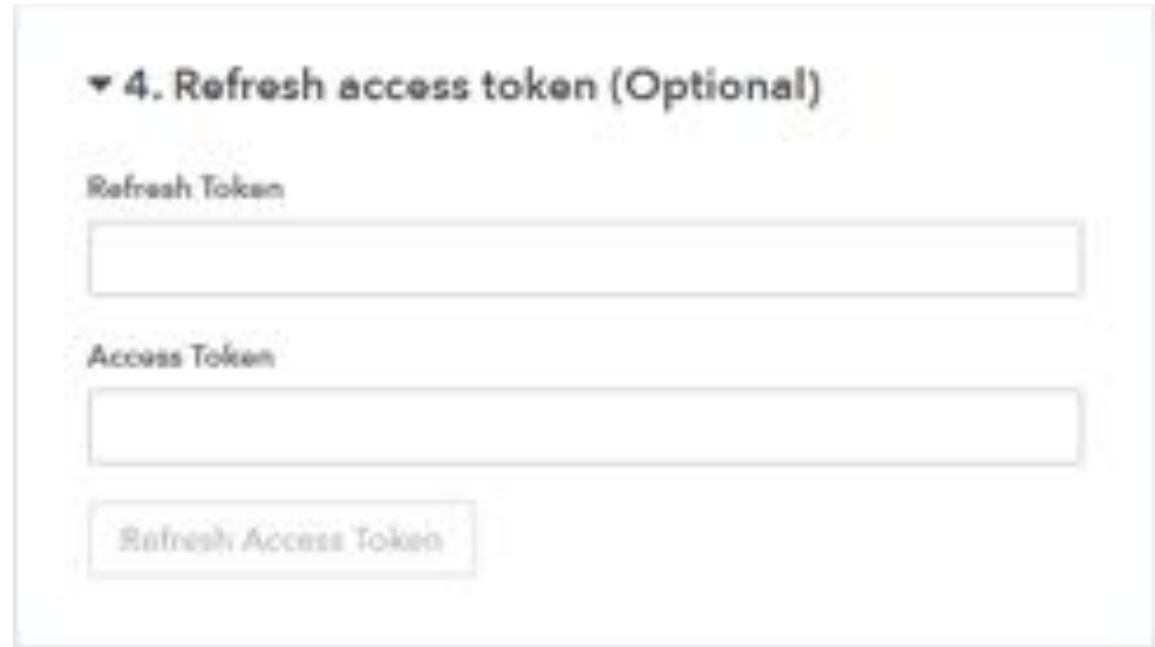


QBO users must authorize the sharing of their data between the App they want to use and QuickBooks Online and Intuit.

Accessing QuickBooks Online

OAuth2

What happens if you disconnect an App?



▼ 4. Refresh access token (Optional)

Refresh Token

Access Token

Refresh Access Token

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QuickBooks Online Errors

Error overview

QuickBooks safeguards



REQUEST FOR INFORMATION



Error overview

QuickBooks safeguards

We are given a response
based on our prior request



QuickBooks Online inherent error logic

	#	RULE NAME	FOH	ACTIONS
	1	Bill Pay Anthem Bluecross	Money out	Edit ▼
	<div><div>!</div><div>An error has occurred. Check if an account has been deleted.</div></div>			
	2	Bill Pay AT&T U-Verse On-Line	Money out	Edit ▼
	3	Spending at Target	Money out	Edit ▼

EXAMPLE OF AN INLINE ERROR

Errors

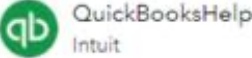
Search error codes on the Intuit Developer website



<https://developer.intuit.com/v2/ui#/search/search?q=error%20codes>

Conversion errors

Search error code 324 on the Intuit Developer website



posted 10-25-2018 01:35 AM • last updated December 10, 2018 11:26 PM

Fix banking error 324 in QuickBooks Online

Banking Error 324 means QuickBooks is unable to locate your account on your Financial Institution (FI) website.

This error may occur because:

- Your FI reclassified the account or moved it to a new server
- Your account nickname changed
- Your FI issued a new account number or credit card
- Your bank or credit card account closed

To resolve Error 324

To resolve this error, you can reconnect or manually update your account or you can add and connect a new account.

The following sections can guide you through these solutions.

Solution 1: Reconnect or manually update the account

Select the **Reconnect my account** link displayed after the error message and follow the steps to select your updated account on the financial institution.

If you do not see this link and cannot find any indications of a problem on the FI's website, select **Update my account** to manually update your account in QuickBooks Online.

Solution 2: Add and connect new account in QuickBooks

If your bank has made changes on their end, you can add a new account and try to connect it to help identify any new options available for your FI, and to test which credentials you can use.

For more information about adding an account and connection, see [Add and connect your bank and credit card accounts](#)

Once you have verified that your credentials work, you can disconnect the existing account and continue setting up the new account.

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Understanding QuickBooks Online Tables

QBO Database structure design, layout, and format

QB Online Tables Examples

TableName
Attachable
BillPayment
BillPaymentLine
BillPaymentAppliedToTxn
Budget
CompanyCurrency
CompanyCurrencyAttachable
Department
DepositAttachable
DepositAppliedToTxn
Entitlements
ExchangeRate
ExchangeRateAttachable
JournalCode

QBO Table Structure

QuickBooks Online

83 Tables*

**-not inclusive of recent changes*

Field Identities

TableName	ColumnName
Account	SpecialAccountType
Account	IsTaxAccount
Account	BankNumber
Account	SalesTaxCodeRefListID
Account	SalesTaxCodeRefFullName
Account	TaxCodeRefListID
Account	TaxCodeRefFullName
Account	TaxLineInfoRetTaxLineID
Account	TaxLineInfoRetTaxLineName

QBO Database structure design, layout, and format

FIELD NAME	TYPE	TYPENAME	LENGTH	QUERYABLE	UPDATEABLE	INSERTABLE	REQUIRED ON INSERT	VALIDATE	RELATES TO
TxnID	12	VARCHAR	36	True	False	False	False	%s	Yes
TimeCreated	11	TIMESTAMP	16	True	False	False	False	CCCC-MM-DDThh:mm:ssZ	
TimeModified	11	TIMESTAMP	16	True	False	False	False	CCCC-MM-DDThh:mm:ssZ	
EditSequence	12	VARCHAR	10	True	False	False	False	%s	
TxnNumber	4	INTEGER	4	True	False	False	False	%11.0f	
DepartmentRefListID	12	VARCHAR	36	True	True	True	False	%s	Yes
DepartmentRefFullName	12	VARCHAR	1000	True	True	True	False	%s	Yes
AccountRefListID	12	VARCHAR	36	True	True	True	True	%s	Yes
AccountRefFullName	12	VARCHAR	1000	True	True	True	True	%s	Yes
PayeeEntityRefListID	12	VARCHAR	36	True	True	True	False	%s	Yes
PayeeEntityRefFullName	12	VARCHAR	1000	True	True	True	False	%s	Yes
RefNumber	12	VARCHAR	21	True	True	True	False	%s	
TxnDate	9	DATE	6	True	True	True	False	CCCC-MM-DD	
Amount	3	DECIMAL	13	True	True	True	False	%8.2f	
Memo	12	VARCHAR	4000	True	True	True	False	%s	
AddressAddr1	12	VARCHAR	500	True	True	True	False	%s	
AddressAddr2	12	VARCHAR	500	True	True	True	False	%s	
AddressAddr3	12	VARCHAR	500	True	True	True	False	%s	
AddressAddr4	12	VARCHAR	500	True	True	True	False	%s	
AddressAddr5	12	VARCHAR	500	True	True	True	False	%s	
AddressCity	12	VARCHAR	255	True	True	True	False	%s	
AddressState	12	VARCHAR	255	True	True	True	False	%s	
AddressPostalCode	12	VARCHAR	30	True	True	True	False	%s	
AddressCountry	12	VARCHAR	255	True	True	True	False	%s	
AddressNote	12	VARCHAR	500	True	True	True	False	%s	
IsToBePrinted	-7	BIT	1	True	True	True	False	1 0 true false	
ExpenseLineClearExpenseLines	-7	BIT	1	True	True	False	False	1 0 true false	
ExpenseLineSeqNo	4	INTEGER	4	True	False	False	False	SeqNo	
ExpenseLineTxnLineID	12	VARCHAR	36	True	True	False	False	%s	
ExpenseLineAccountRefListID	12	VARCHAR	36	True	True	True	False	%s	Yes
ExpenseLineAccountRefFullName	12	VARCHAR	1000	True	True	True	False	%s	Yes
ExpenseLineAmount	3	DECIMAL	13	True	True	True	False	%8.2f	
ExpenseLineMemo	12	VARCHAR	4000	True	True	True	False	%s	
ExpenseLineCustomerRefListID	12	VARCHAR	36	True	True	True	False	%s	Yes
ExpenseLineCustomerRefFullName	12	VARCHAR	1000	True	True	True	False	%s	Yes
ExpenseLineClassRefListID	12	VARCHAR	36	True	True	True	False	%s	Yes
ExpenseLineClassRefFullName	12	VARCHAR	1000	True	True	True	False	%s	Yes
FQSaveToCache	-7	BIT	1	True	False	True	False	FQSaveToCache	
FQPrimaryKey	12	VARCHAR	73	True	False	False	False	FQPrimaryKey	

QuickBooks Online table modes

Edit Mode

Batch Action Mode

Default Mode

	DATE	TYPE	NO.	CUSTOMER	DUE DATE	BALANCE	TOTAL	STATUS	ACTION
<input type="checkbox"/>	06/06/2014	Invoice	N01	Stephane Huang	08/09/2014	\$0.00	\$15.00	Paid	
<input type="checkbox"/>	06/06/2014	Invoice	N02	Faleggi Hu...	08/09/2014	\$100.00	\$100.00	Open/Bank	Receive payment
<input type="checkbox"/>	06/07/2014	Invoice	N03	Christan ...	08/09/2014	\$100.00	\$100.00	Open	Receive payment
<input type="checkbox"/>	06/07/2014	Invoice	N04	Jamada F...	08/09/2014	\$20.00	\$20.00	Open	Receive payment
<input type="checkbox"/>	06/13/2014	Invoice	N05	Zehi Lee...	08/12/2014	\$10.00	\$10.00	Open	Receive payment
<input type="checkbox"/>	06/14/2014	Invoice	N06	Ricardo ...	08/09/2014	\$166.75	\$166.75	Overdue	Receive payment
<input type="checkbox"/>	06/15/2014	Invoice	N07	Christan ...	08/09/2014	\$100.00	\$100.00	Overdue	Receive payment

QuickBooks Online tables

Diagram illustrating the structure of a QuickBooks Online table with various UI elements labeled:

- Filter/Find**: Located at the top left of the table area.
- Selection**: Points to the checkbox in the first column.
- Sorting**: Points to the dropdown arrow in the DATE header.
- Table Bar**: Points to the header row.
- Header**: Points to the header row.
- Settings**: Points to the printer and refresh icons at the top right.
- End-of-Table Rule**: Points to the bottom of the table body.
- Pagination**: Points to the pagination controls at the bottom right.

	DATE	TYPE	NO.	CLIENT	BALANCE	TOTAL	STATUS	ACTION
<input type="checkbox"/>	08/19/2013	Invoice	1123	aruna	\$720.00	\$720.00	Open	Receive payment
<input type="checkbox"/>	08/16/2013	Invoice	1121	Ashley Br...	\$234,234.00	\$234,234.00	Open	Receive payment
<input type="checkbox"/>	08/16/2013	Invoice	1122	add	\$0.00	\$0.00	Paid	Print
<input type="checkbox"/>	08/15/2013	Estimate	1008	_NewOut...	\$0.00	\$8,999.00	Accepted	Start invoice
<input type="checkbox"/>	08/14/2013	Estimate	1008	_NewOut...	\$5.00	\$5.00	Open	Receive payment
<input type="checkbox"/>	08/13/2013	Invoice	1121	Ashley Br...	\$234,234.00	\$234,234.00	Open	Receive payment
<input type="checkbox"/>	08/13/2013	Invoice	1122	add	\$0.00	\$0.00	Paid	Print

< First Previous 1-20 of 20 Next Last >

QuickBooks Online batch action tables

<div> <div>Accept selected</div> <div>Exclude selected</div> <div>Modify selected ▾</div> <div>More... ▾</div> </div>						
<input type="checkbox"/>	DATE	DESCRIPTION	CATEGORY OR MATCH	SPENT	RECEIVED	ACTION
<input type="checkbox"/>	07/30/2014	ATM Deposit	Sales of Product Income		\$4,277.44	Add
<input type="checkbox"/>	08/15/2014	ATM Deposit	Sales of Product Income		\$1,907.71	Add
<input checked="" type="checkbox"/>	08/16/2014	ATM Deposit	Sales of Product Income		\$1,009.23	Add
<input type="checkbox"/>	09/23/2014	ATM Deposit	Sales of Product Income		\$170.14	Add
<input type="checkbox"/>	08/05/2014	ATM Fee	Bank Charges	\$2.00		Add
<input type="checkbox"/>	07/18/2014	ATM Withdrawal	PNC	\$400.00		Add
<input type="checkbox"/>	07/30/2014	ATM Withdrawal	PNC	\$100.00		Add
<input type="checkbox"/>	07/30/2014	ATM Withdrawal	PNC	\$300.00		Add

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QuickBooks Online Table Considerations for Connecting Apps

QBO Tables

**Knowledge leads to
understanding**



Table considerations for connecting apps



Which areas of QuickBooks will an App be interacting with?

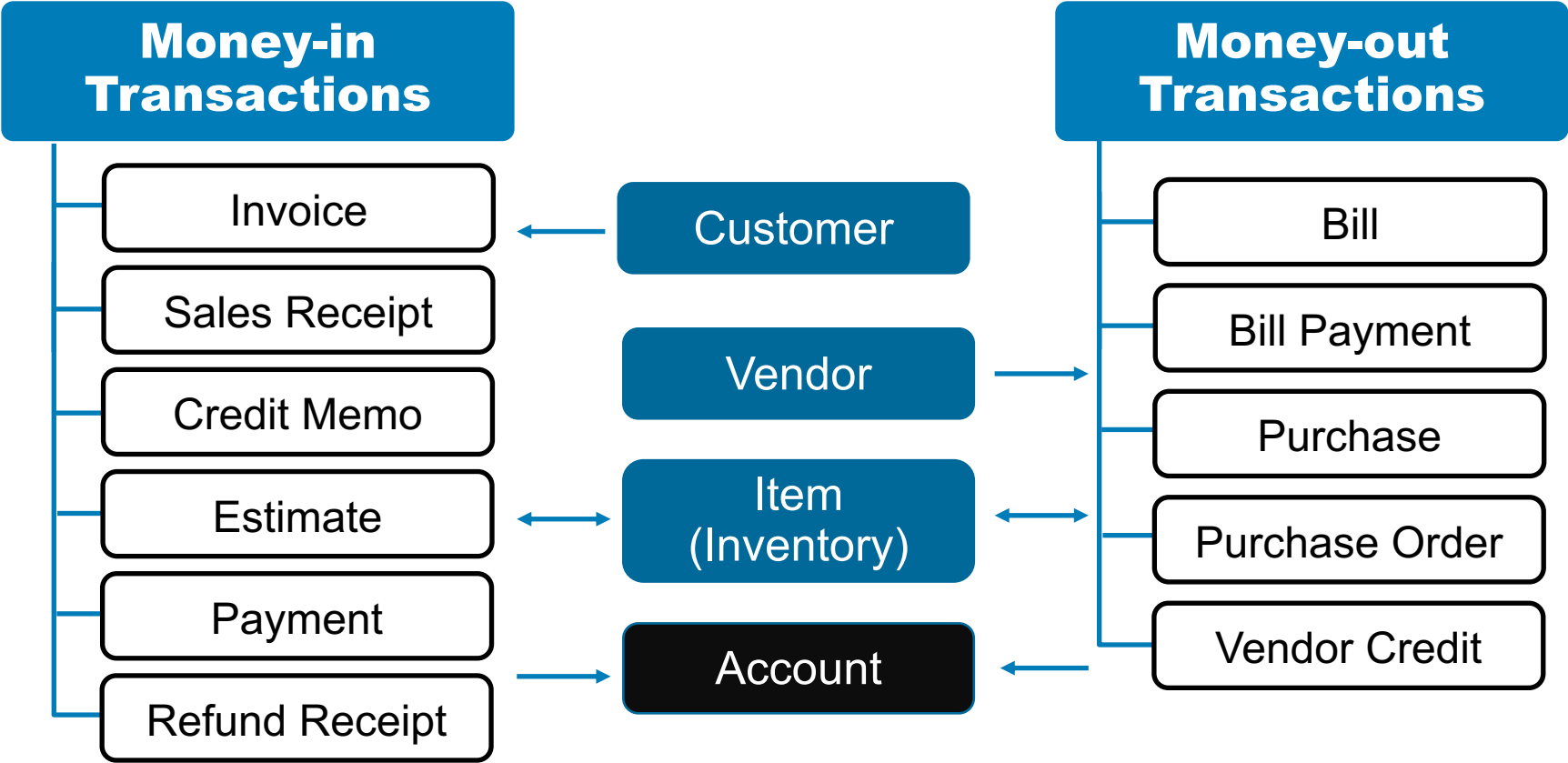


Is there customer support if needed?



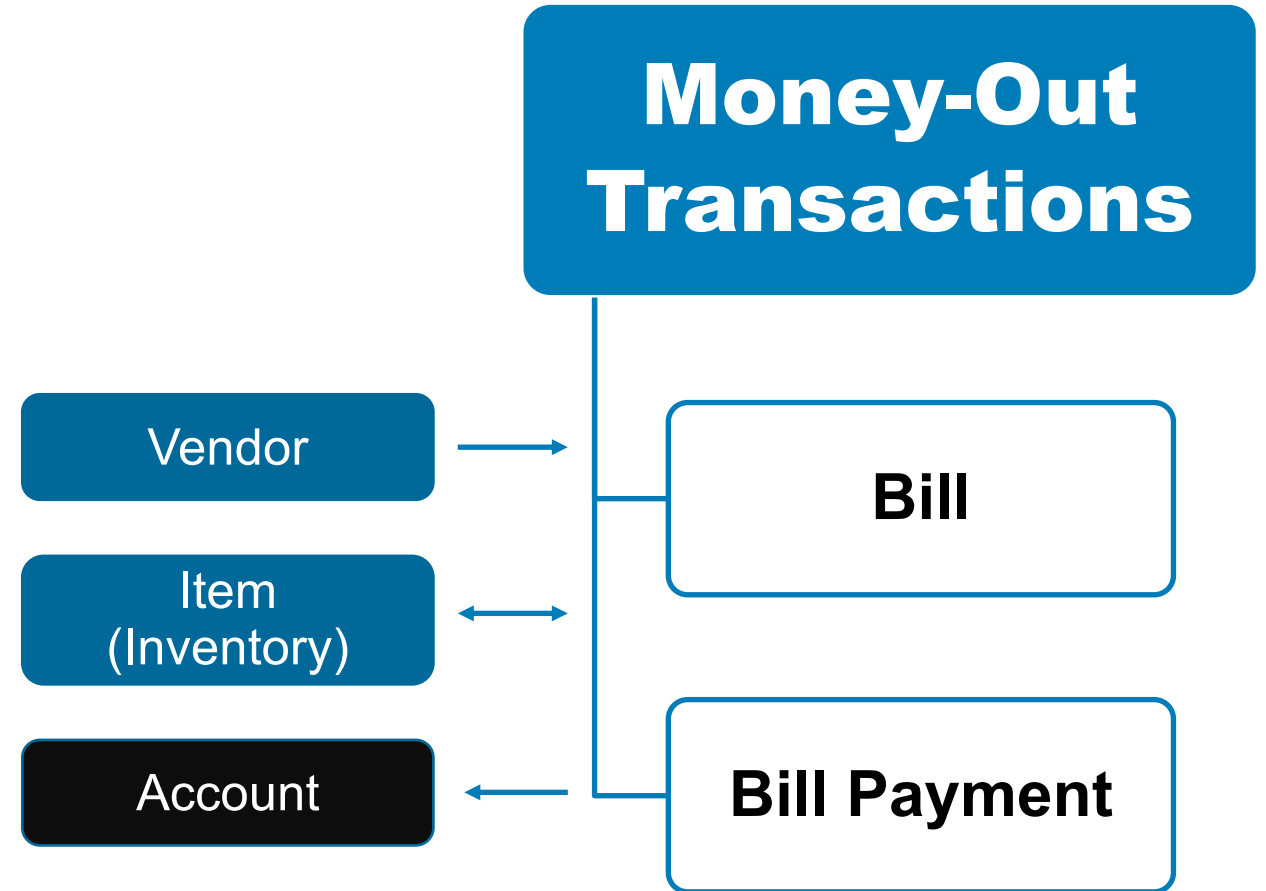
Do you have expected results in mind?

Examine the workflow



QuickBooks Online Tables Used

Vendor
Item
Account
Bill
Bill Payment
Bill Payment Line
Bill Payment Applied to tax
Tax
Attachable
Company currency
Exchange rate attachable
Department
Class
And more...



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Consideration when Connecting Apps

Apps expand our functionality





Read and Review User Agreements

Creating restore points

“Why do I need to create a restore point? Doesn’t Intuit do that?”



QuickBooks Online replication



Tools for creating restore points

ChronoBooks

Companies

A list of QuickBooks companies connected to your ChronoBooks account. Only companies with Backup enabled are being continuously backed up. Any company not being backed up is only available to be copied to.

[Add a Company](#)

Name	Backed Up	Backed Up Since	Last Backup At
TEST		Enable Backup	—
QuickBooks Master Class		Enable Backup	—

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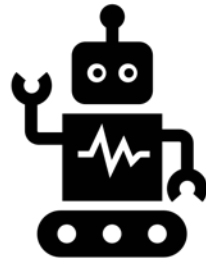
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Accountant Apps VS Client Apps

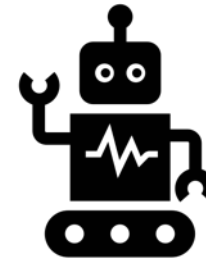
Accountant vs client apps



Apps to accomplish a task



Automation



Automation



Funding



Value added
services

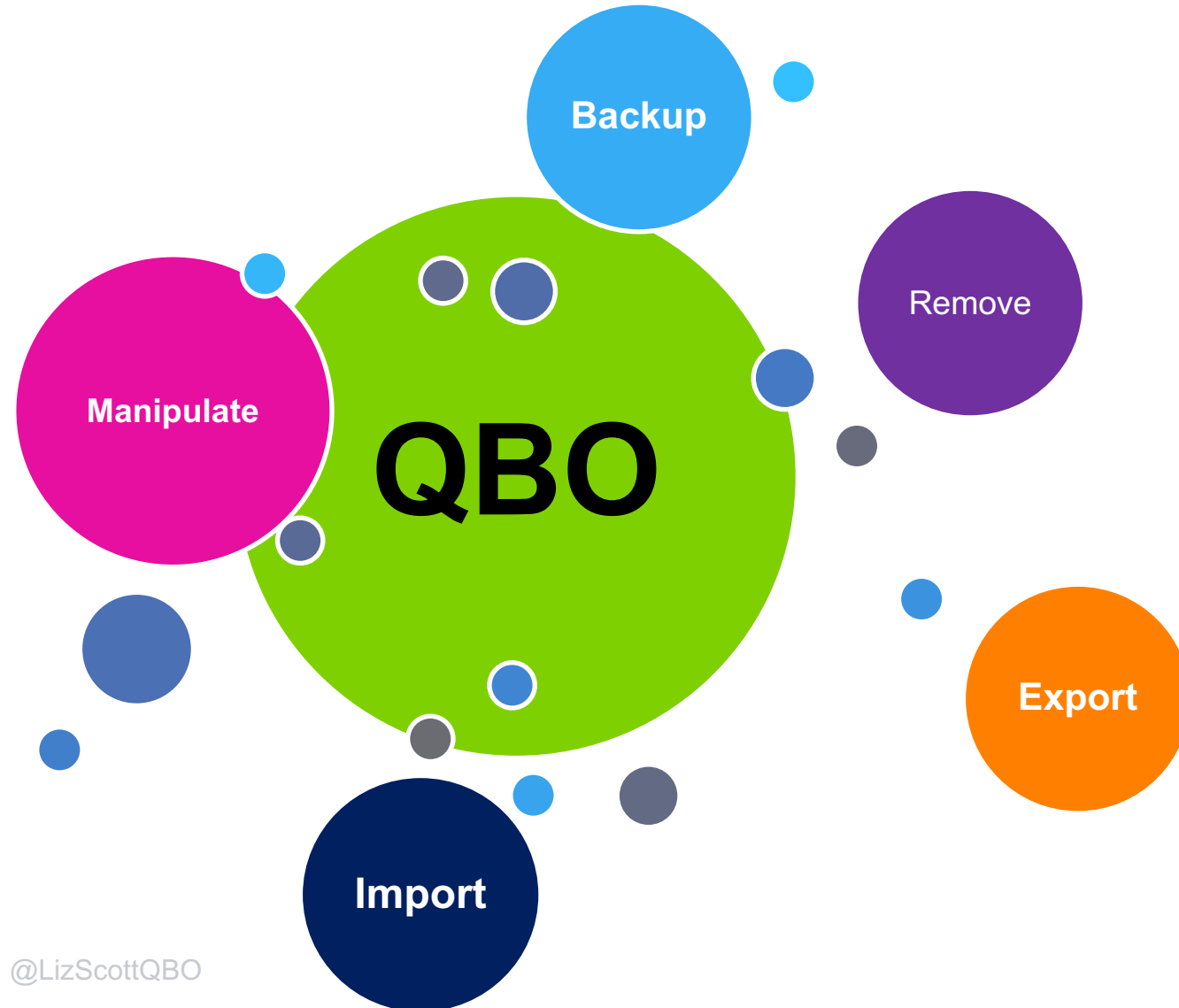


Time Tracking

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Accountant Apps and Data Utilities

Using QuickBooks Online data utilizes



QuickBooks Online data utilizes

**Clean up, catch up, importing data,
editing data, saving data**



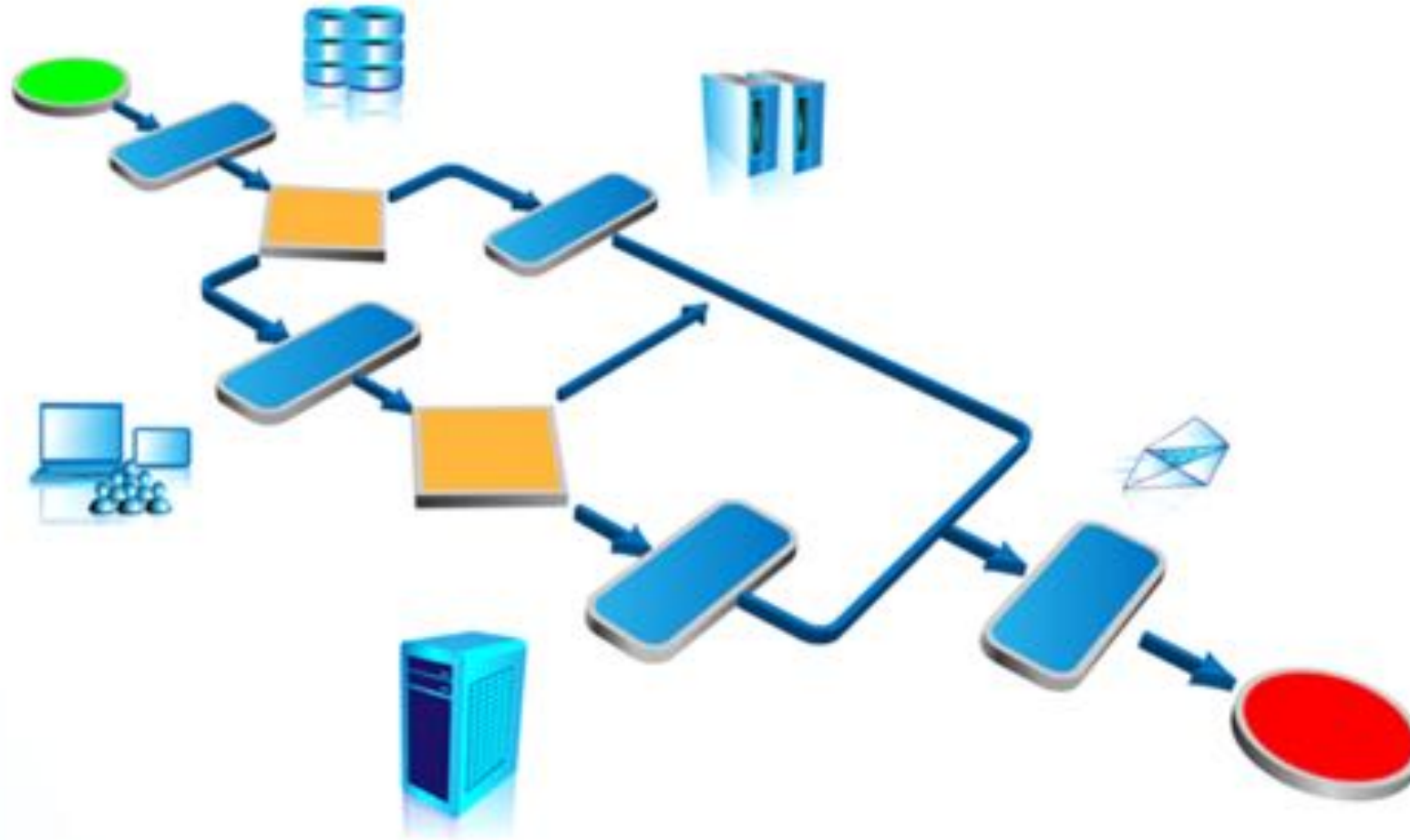
QuickBooks Online data manipulation utilities

“Why do I need to edit data in QBO?”

mistake

A yellow pencil with a red eraser tip is shown erasing the word 'mistake'. The pencil is positioned diagonally from the top right towards the bottom left, with its eraser tip touching the end of the word. Small eraser shavings are visible on the surface below the pencil.

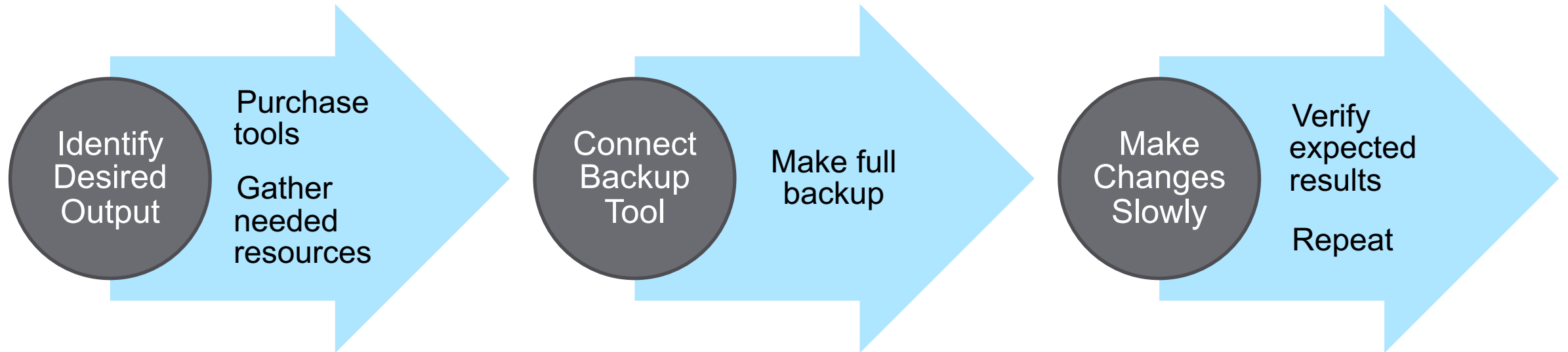
Project workflow – Identify project needs



What went wrong



Accountant workflow



Identify API resource table

Table Choices
Deposit
Deposit Line Item
Invoices
Invoice Line Items
Invoice Linked Transactions
Payments
Payment Line Item
Payment Method

Identify API resource table

Table Choices
Deposit
Deposit Line Item
Invoices
Invoice Line Items
Invoice Linked Transactions
Payments
Payment Line Item
Payment Method

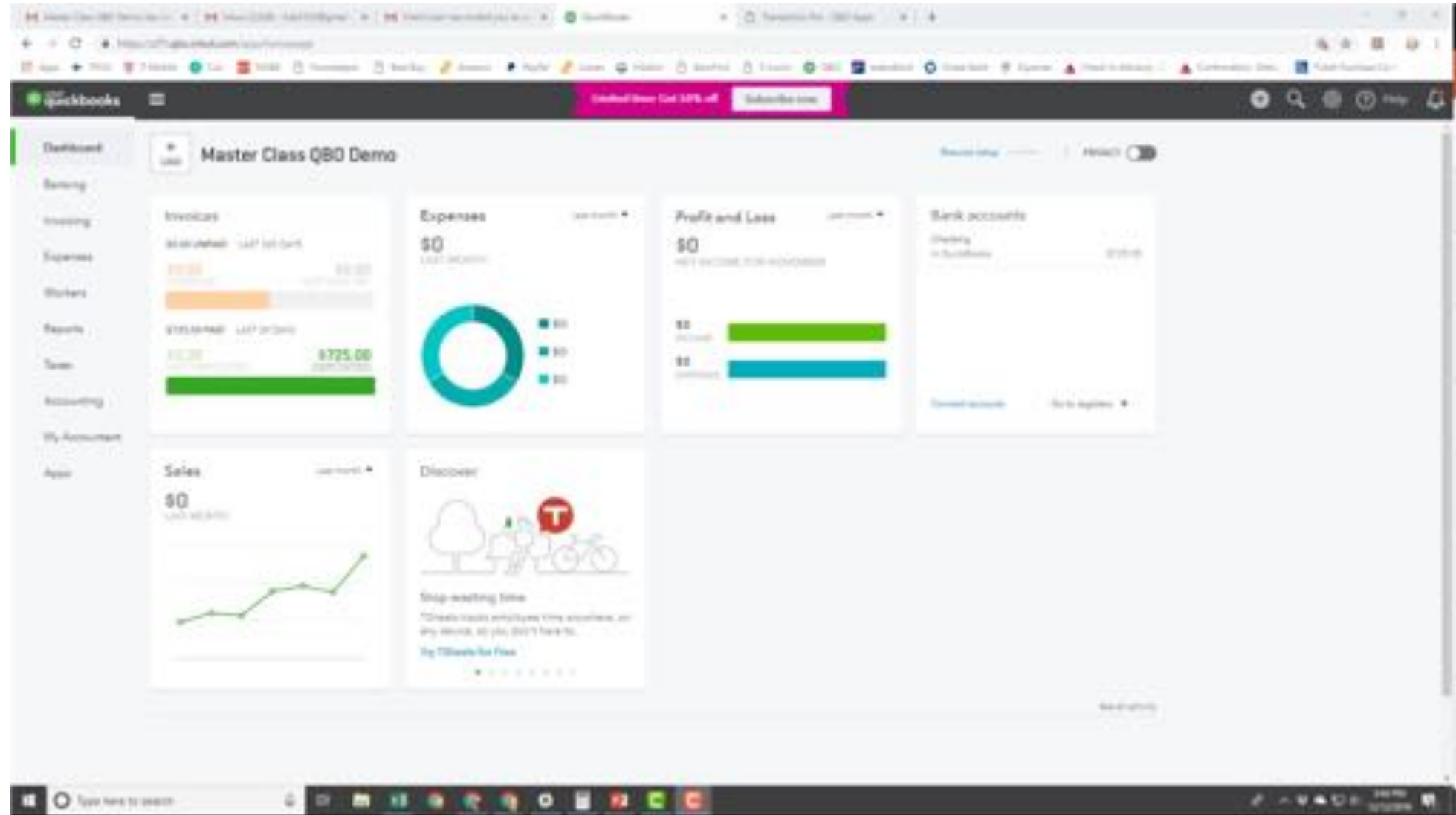
QuickBooks Online data manipulation utilities

CData for QBO (by CData) – import/input/change data from Excel

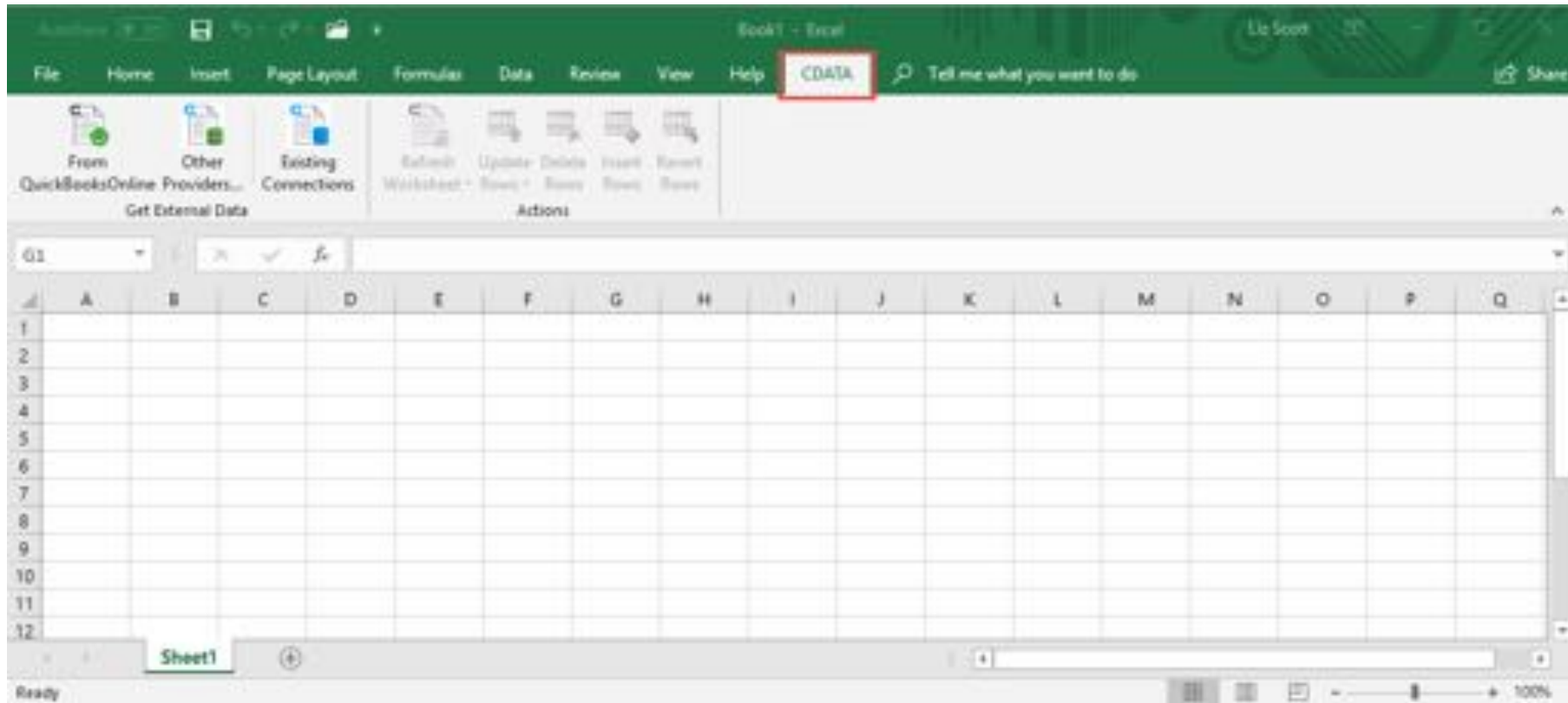
QODBC for QBO (by FlexQuarters) – full access to QBO

Zapier (by Zapier) – easily link Apps using ‘Zaps’

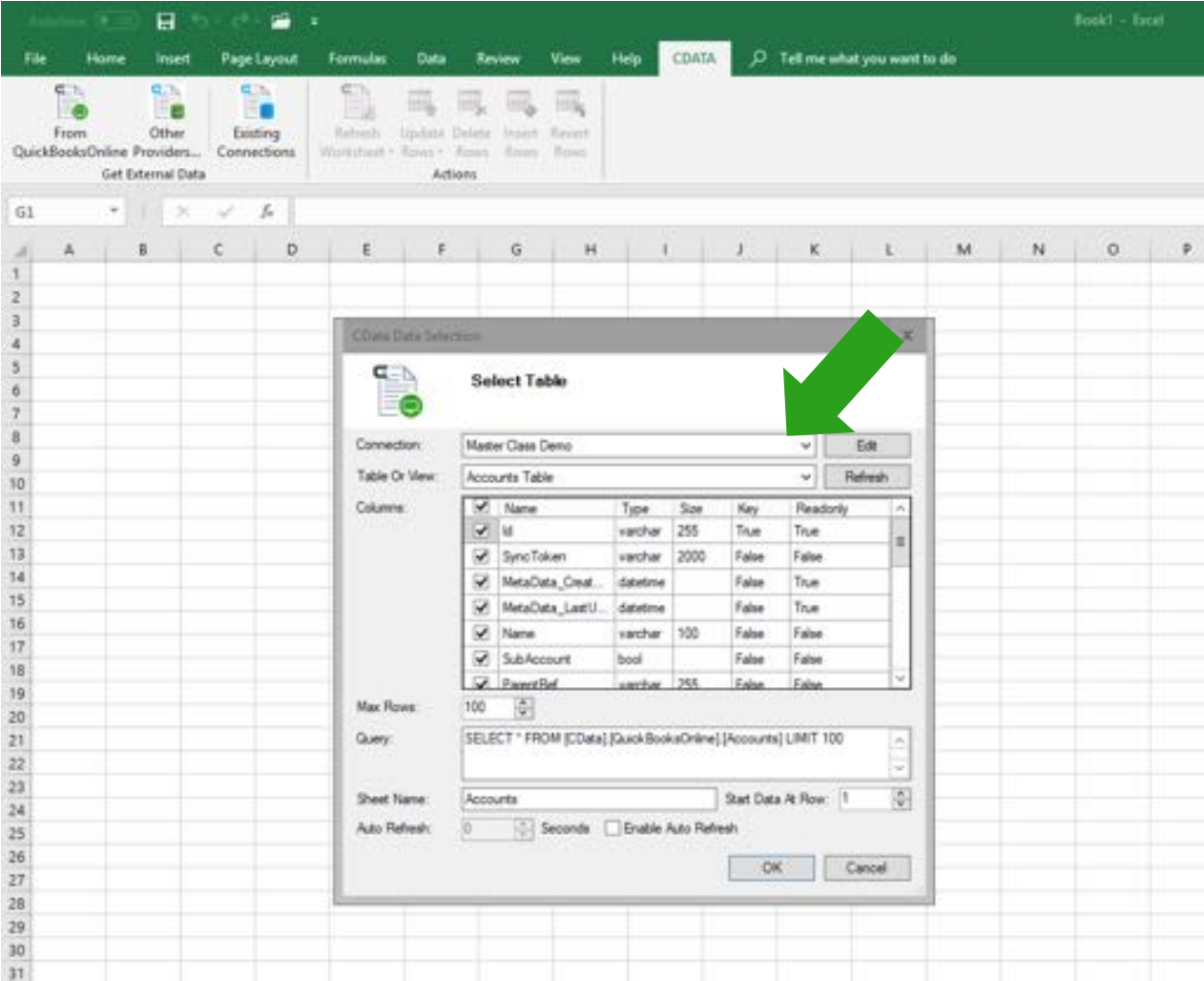
Product demonstration



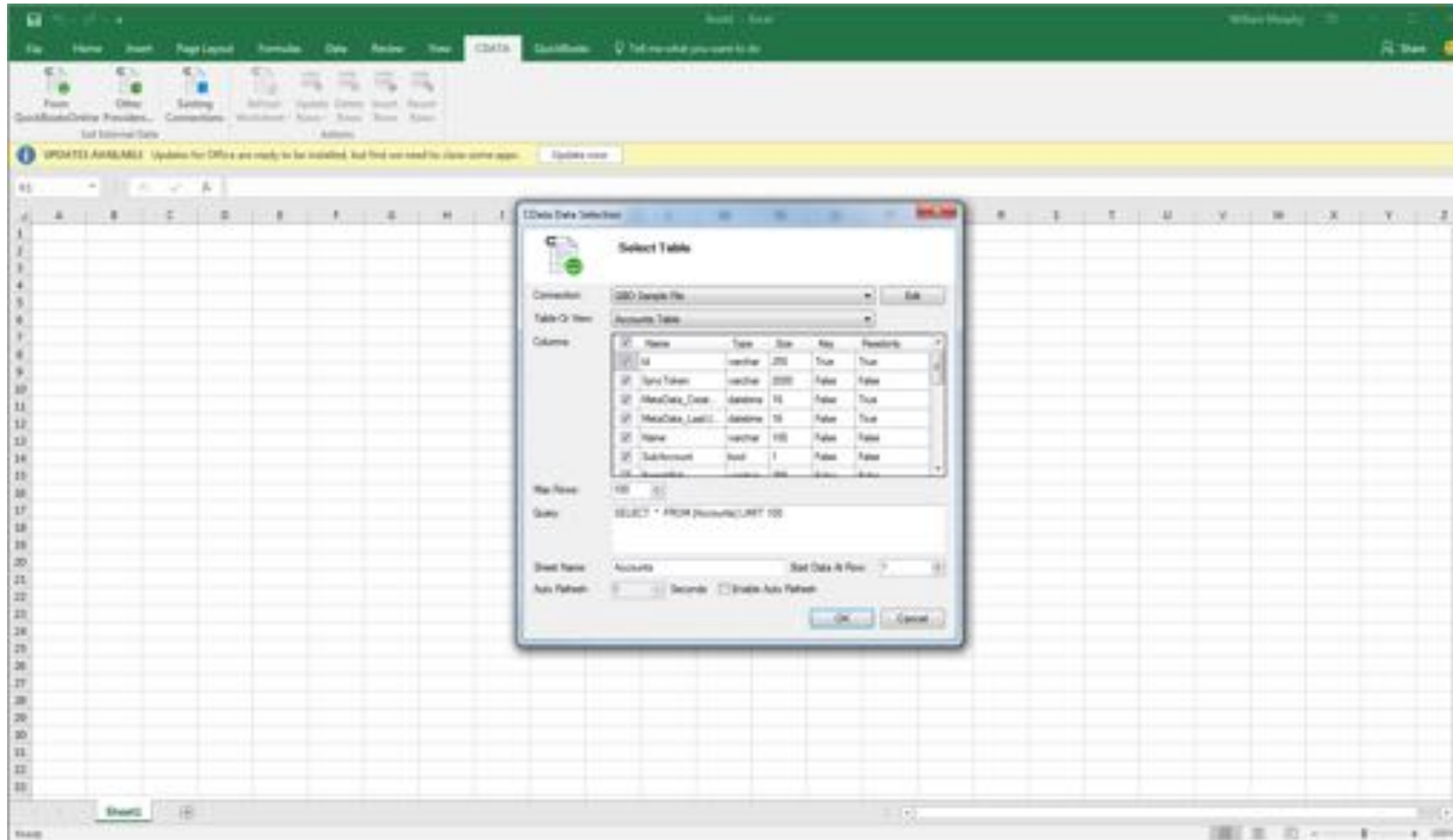
CData for QuickBooks Online (by CData)



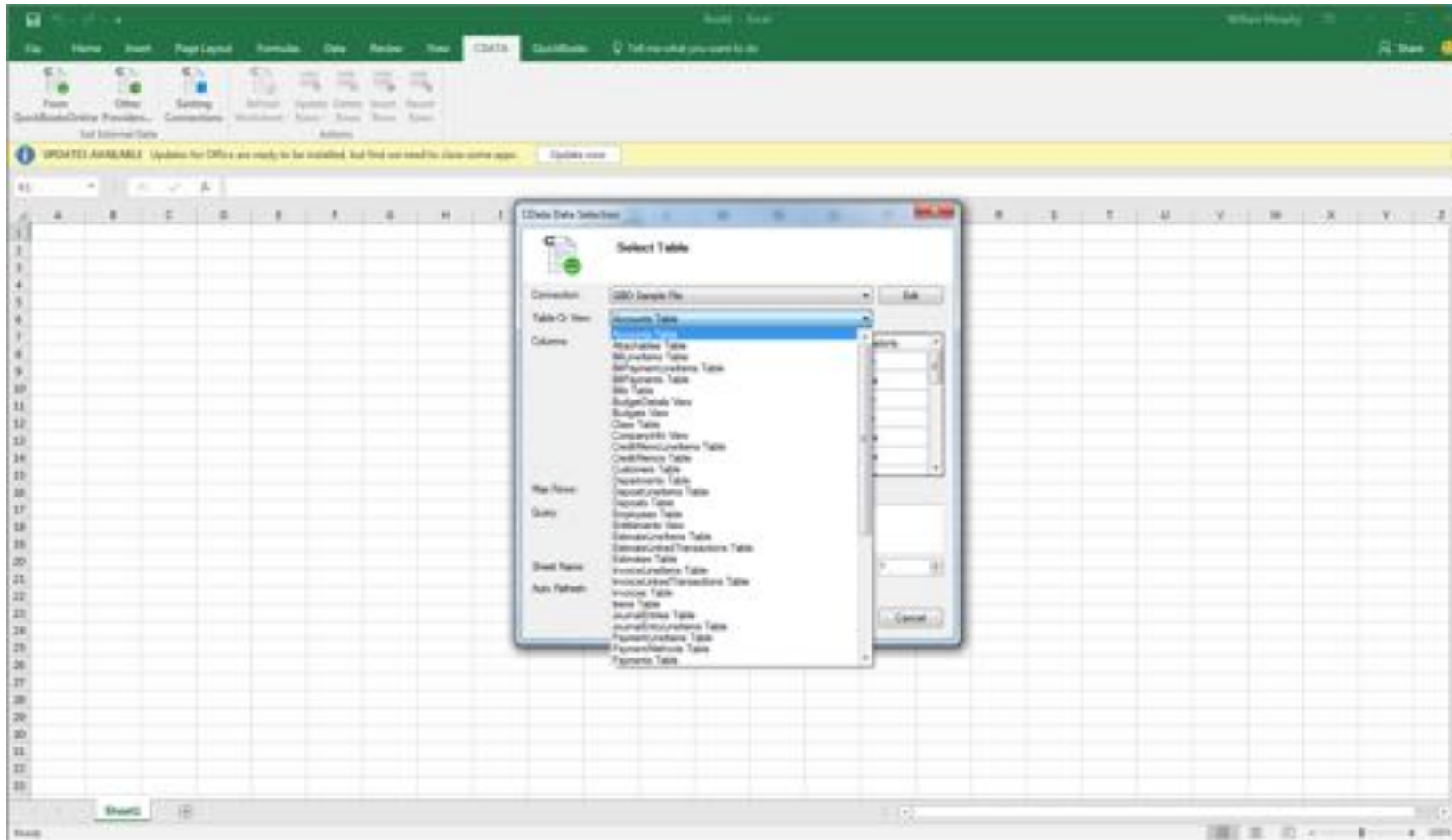
CData Excel add-in for QuickBooks Online



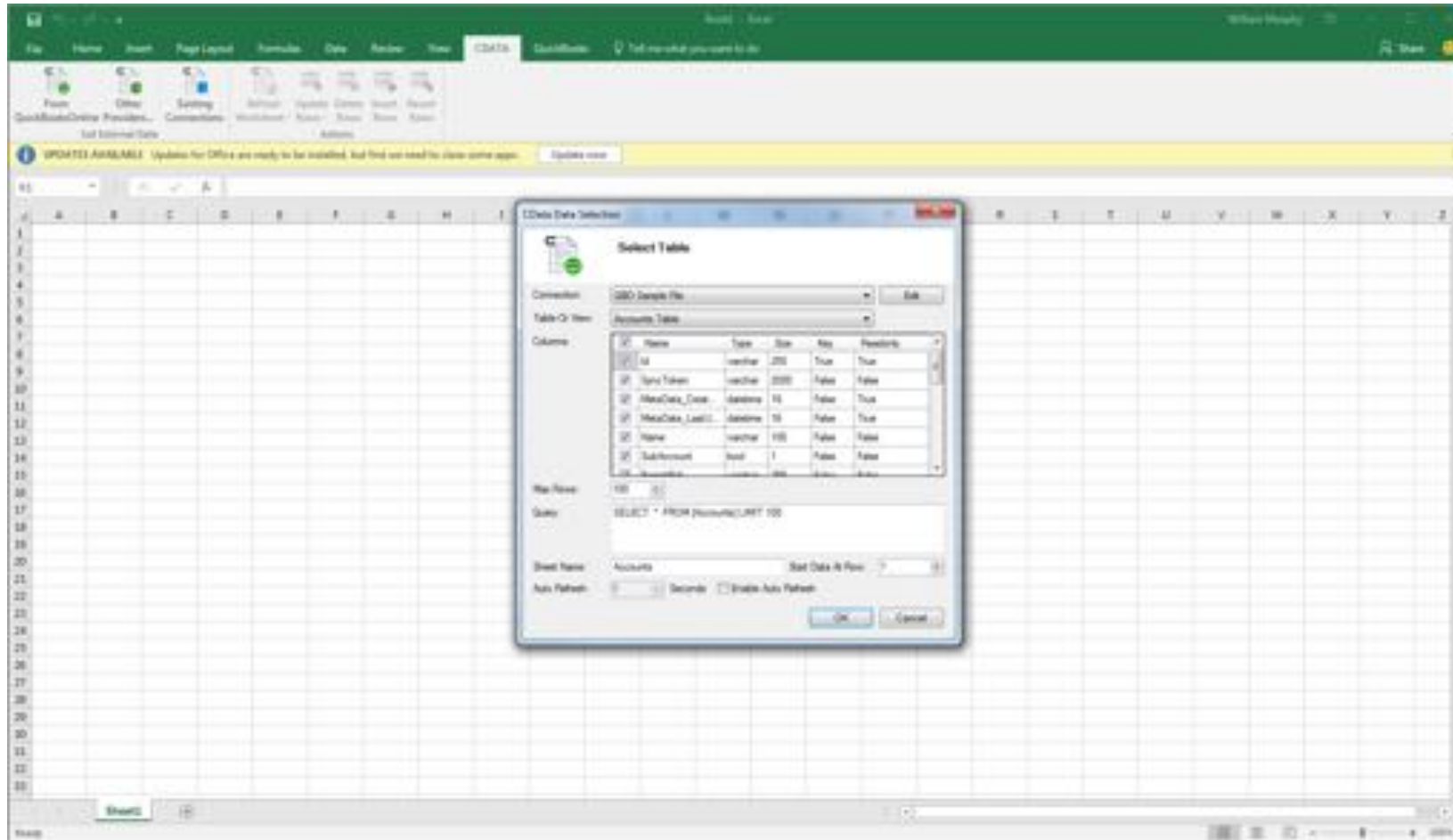
CData Excel add-in for QuickBooks Online



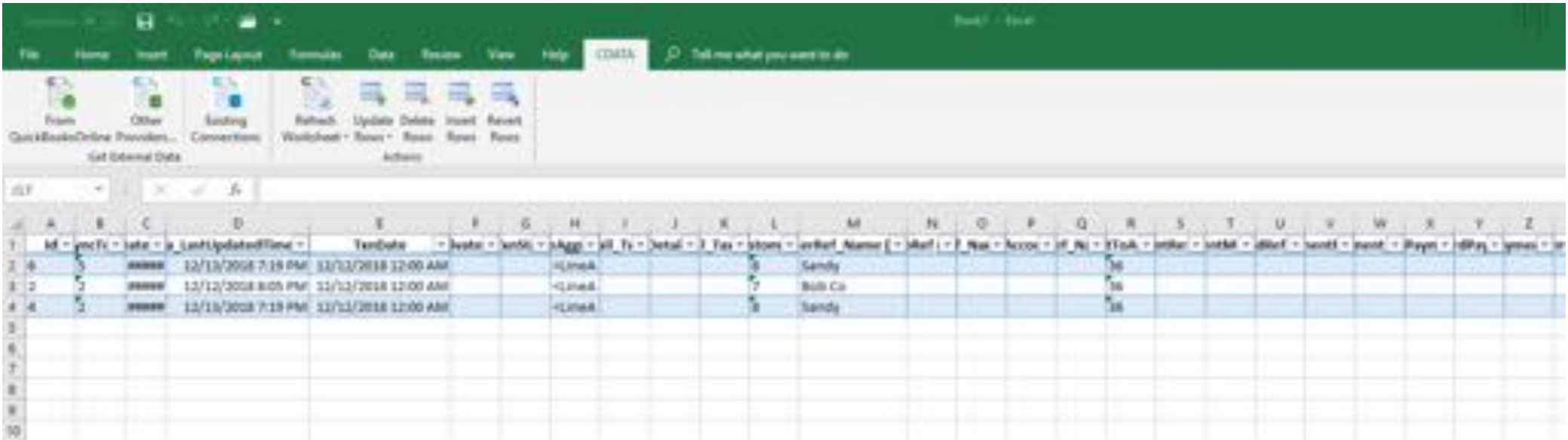
CData Excel add-in for QuickBooks Online



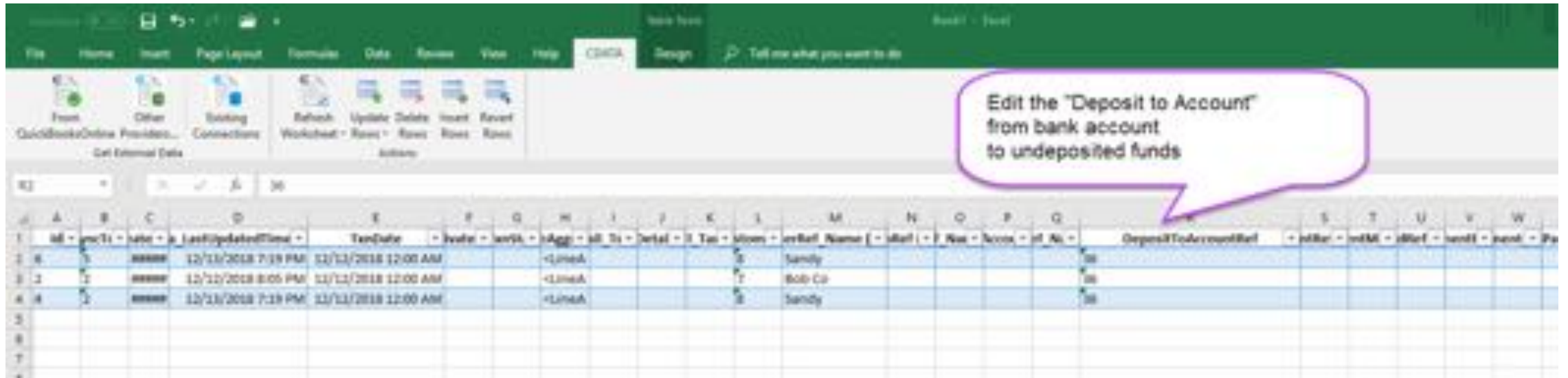
CData Excel add-in for QuickBooks Online



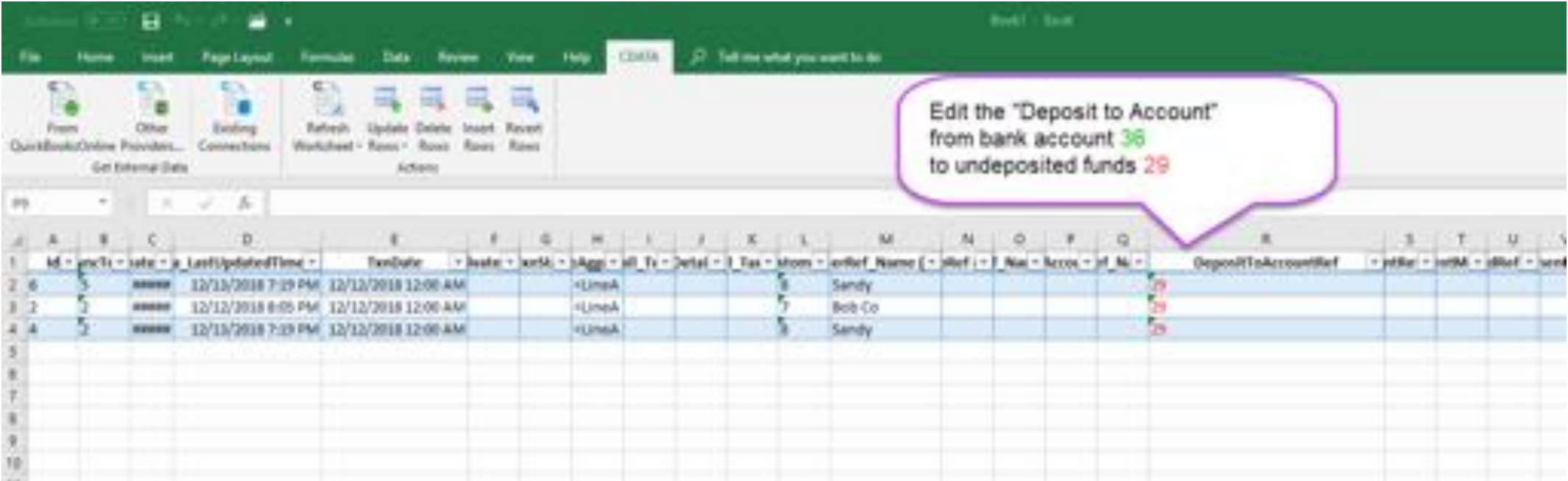
CData Excel add-in for QuickBooks Online



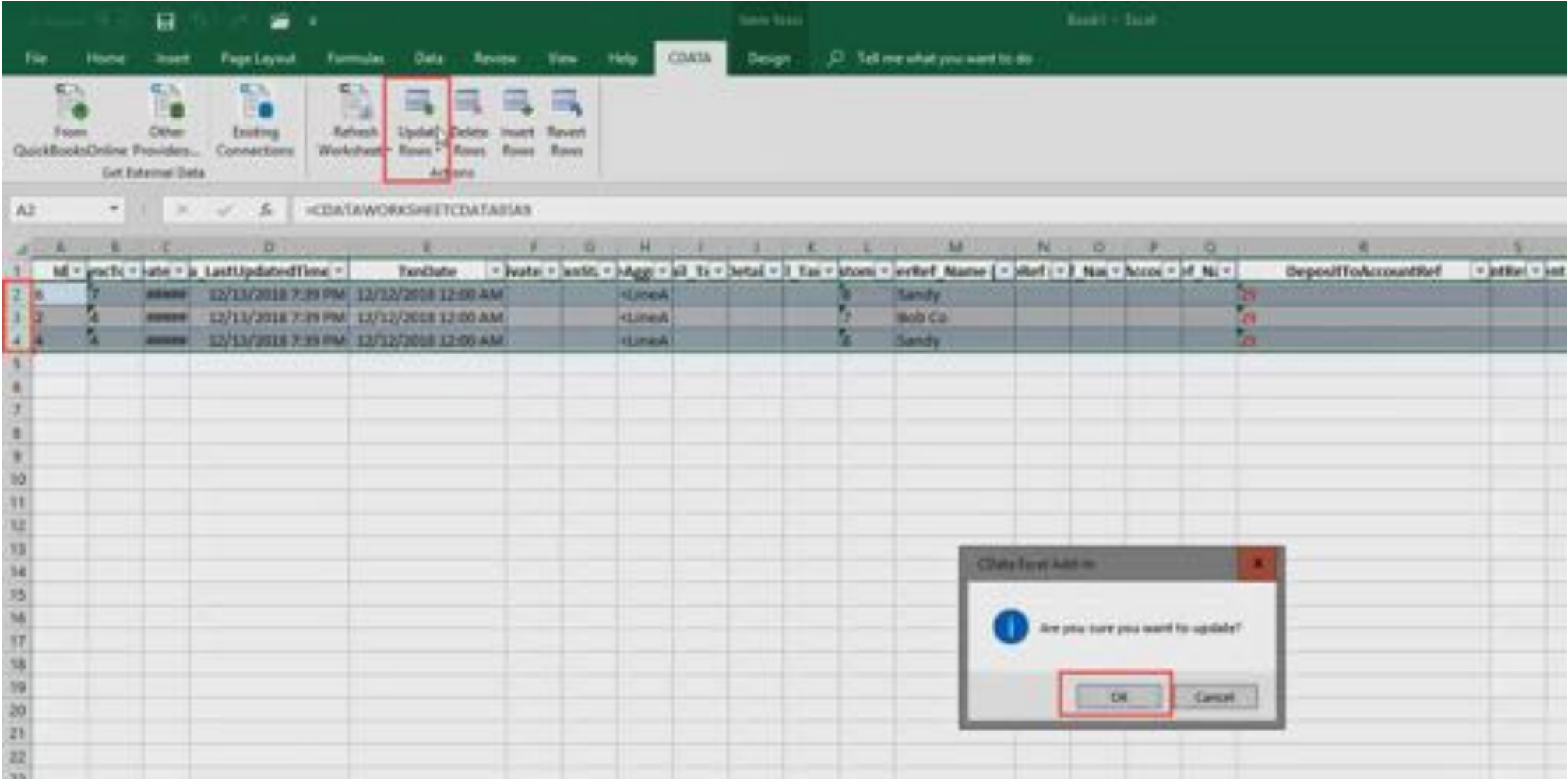
CData Excel add-in for QuickBooks Online



CData Excel add-in for QuickBooks Online



CData Excel add-in for QuickBooks Online



CData Excel add-in for QuickBooks Online

The "Deposit to Account" is now undeposited funds 29 and a batched deposit can be made in

CData Excel add-in for QuickBooks Online

Bank Deposit

Account: Checking

Balance: \$-837.00

Date: 12/13/2018

AMOUNT
\$725.00

Select the payments included in this deposit

	RECEIVED FROM *	DATE	TYPE	PAYMENT METHOD	MEMO	REF NO.	AMOUNT
<input checked="" type="checkbox"/>	Bank Co.	12/12/2018	Payment	Even Rec			900.00
<input checked="" type="checkbox"/>	Sandy	12/13/2018	Payment	Even Rec			185.00
<input checked="" type="checkbox"/>	Sandy	12/13/2018	Payment	Even Rec			75.00

1-2 of 3

Select all Clear all

Total

125.00

Selected Payments Total

125.00

Cancel Clear

Print Make recurring

Save and new



Client Apps

Reasons to implement client apps

Standardize

Automate

Create systems

Separations of duties

Security



Opportunity for improvement

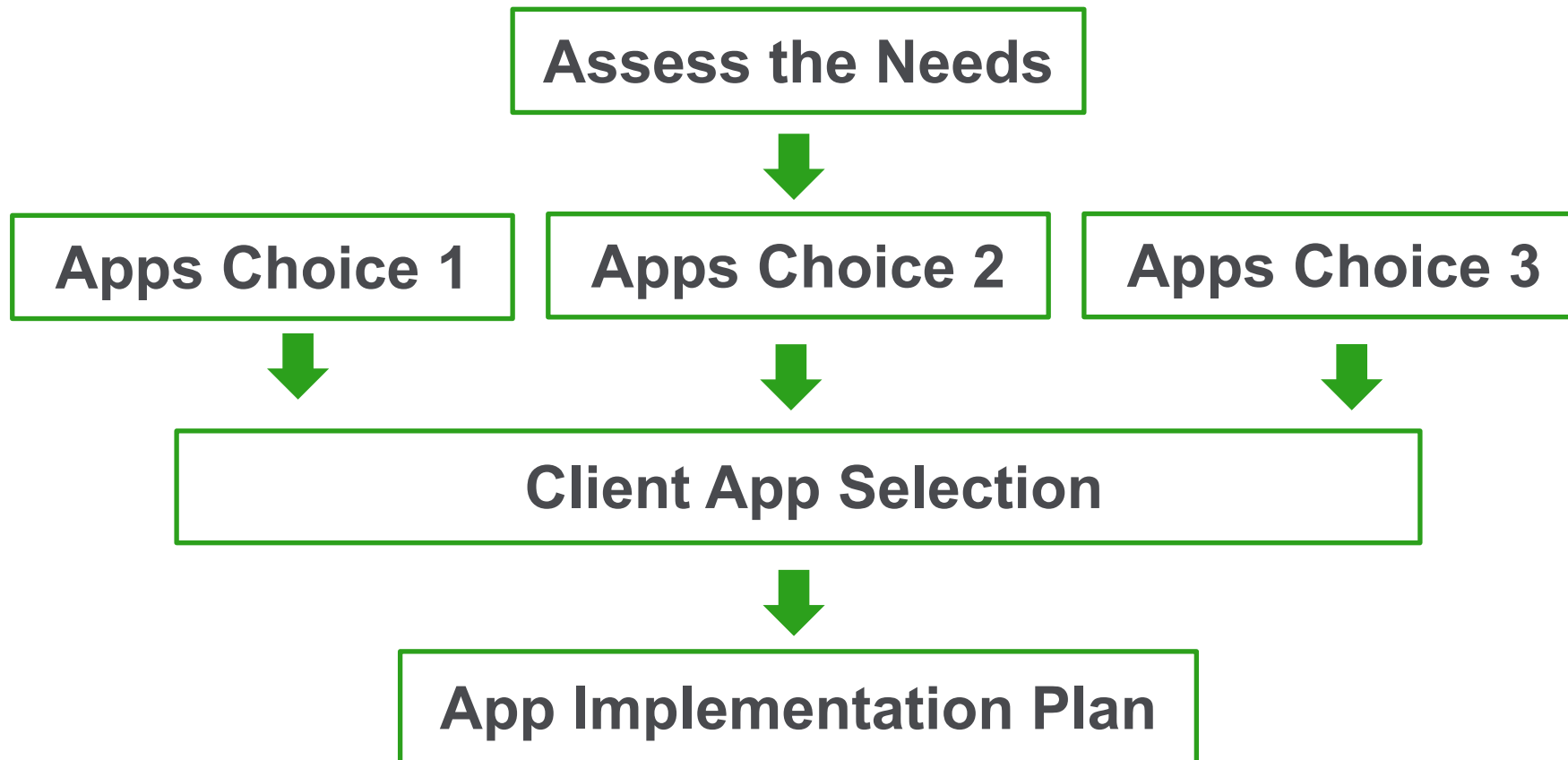


Agreed new system will include Online BillPay



Identify inefficiencies an app can solve

Innovative app expert waterflow diagram



Online bill payment apps

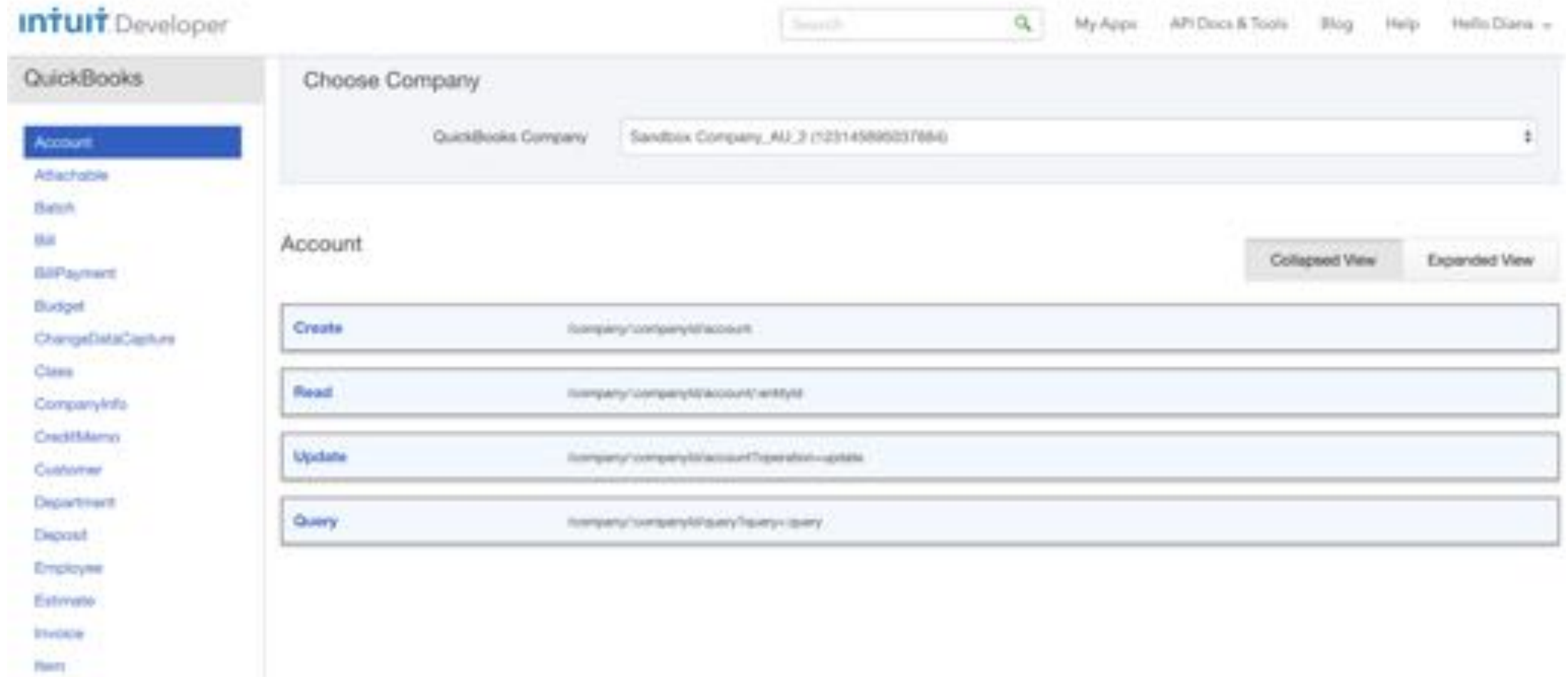
Review options with
or without client



New workflow



API explorer





App Stacking

What is app stacking?

Using two or more applications to perform tasks.





Middleware

Middleware apps

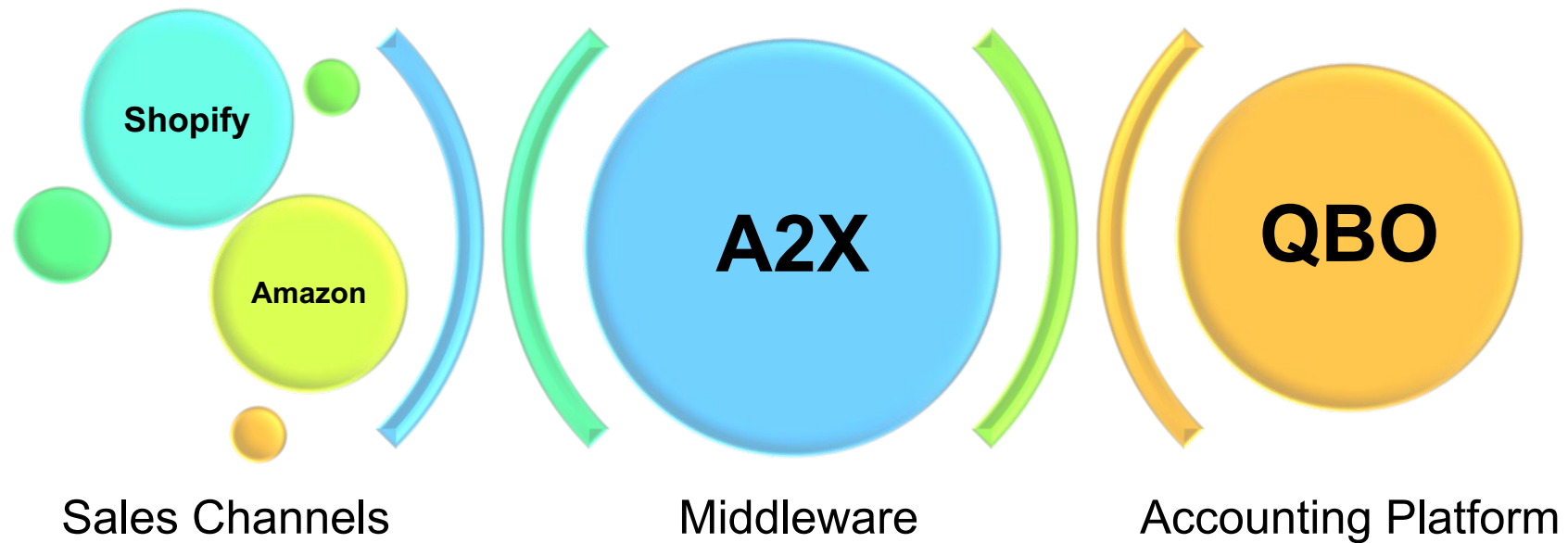
What are connector apps?

Software glue

Connects two or more apps



App middleware example



App middleware example





Summary

Overview and questions

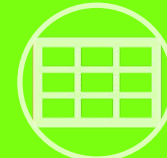
Understanding
the platform



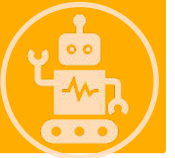
Safeguards and
limitations of the
QBO database



Understanding
tables



Considerations
when connecting
apps



Have Questions?

Liz Scott

Liz@accountinglifelineok.com

Related sessions



Apps & Automation for Your Firm – Michelle Long on Wed 10:30

Discover benefits of standardizing and automating workflows for your clients data and your firm too. We will discuss several possible apps for many workflows to APPify the Processes™ for your clients and your firm.



Tech Stack Implementation – Erin Vukelich, on Wed 10:30 and 1:00

Learn to review, test, and onboard your clients onto your chosen tech stack applications. Focusing on client impact, we will review techniques to begin the implementation process and duplicate it in the future.



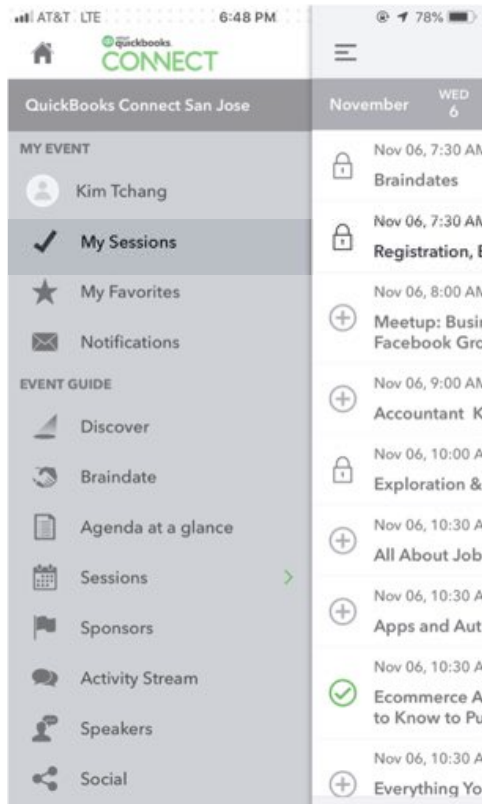
Becoming an Apps Master: Connecting Apps to QBO Database, for Your Clients – Liz Scott on Wed 2:30 and Thurs 9:00

Gain insight into the design and configuration of the QuickBooks Online database. Learn safeguards and limitations of the database as well as basic tables structure knowledge useful for connecting 3rd party apps.

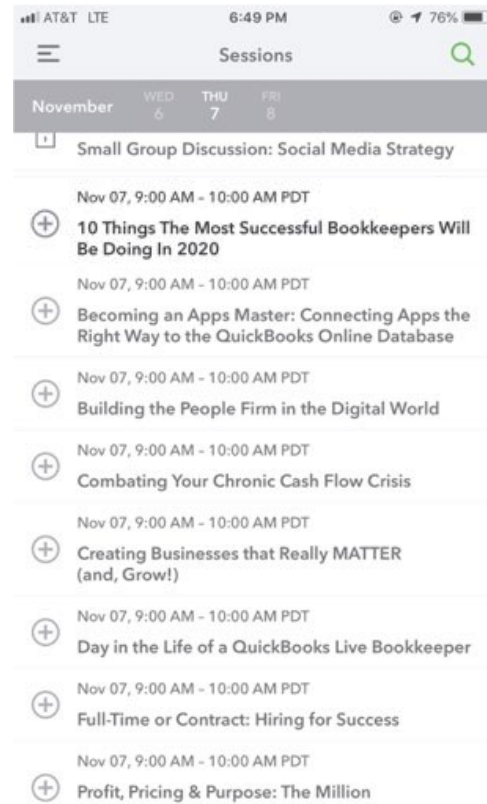
Rate this Session on the QuickBooks Connect Mobile App

Provide feedback to help us design content for future events

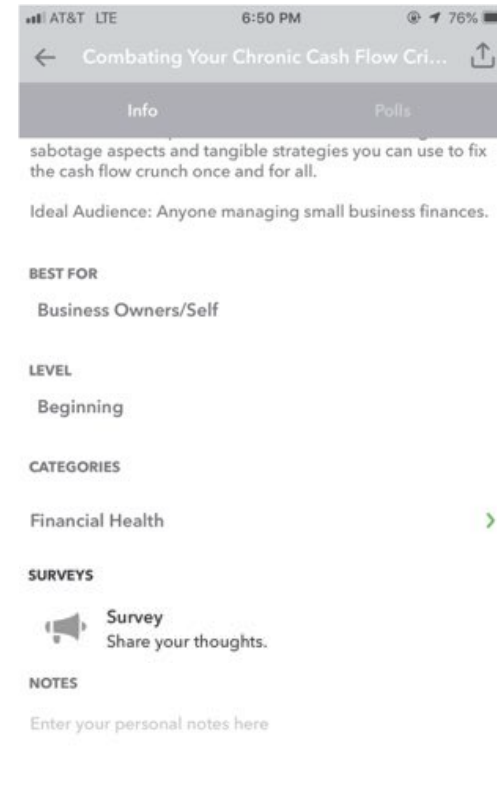
1. Select Sessions



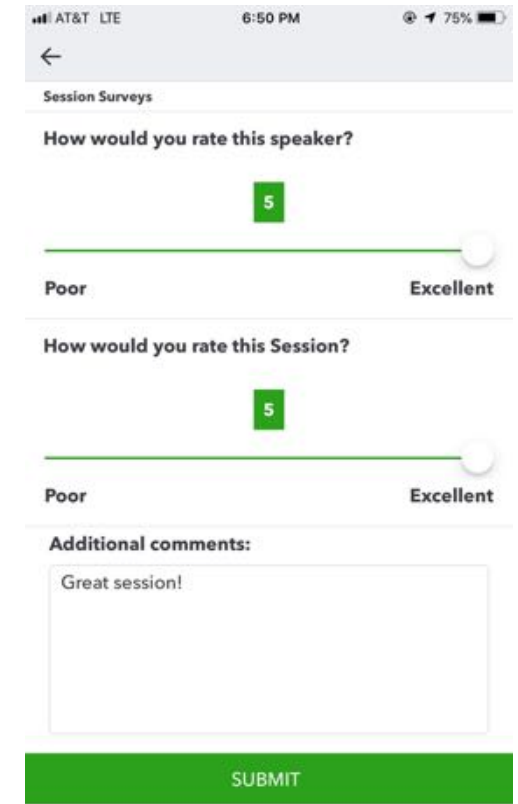
2. Select Session Title



3. Select Survey



4. Add Ratings



Material Download

1. Find the session on the agenda
2. Select + for more information
3. Download PDF of slides and/or supplemental material

<https://quickbooksconnect.com/agenda/>

The screenshot shows the QuickBooks Connect agenda page for November 7. The header includes the QuickBooks Connect logo, navigation links (Why Attend, Agenda, Speakers, Pricing, Sponsors, Travel, FAQ), and a 'Register now' button. The date 'November 7' is highlighted, with 'November 6: Accountant Day' and 'November 8' also visible. A 'Print Agenda' link is in the top right. Below the header, a paragraph describes the event: 'Get new insights from experts in business growth, organizational culture, financial health, technology and life skills. Book a Braindate with peers and expert consultant for one-on-one learning. Unwind in the evening with our legendary celebration.' A search bar labeled 'Search for sessions' is present. Below the search bar, filters are listed: Business Growth, Life & Business Skills, Organizational Culture, Technology Training, Advisory, and Financial Health, with an 'Expand all +' link. The agenda items are listed in a table-like format with time slots on the left and session titles on the right. The sessions include 'Registration, Breakfast & Exploration', 'Braindates' (with a description and 'Learn more' link), 'Yoga', and 'Breakout Sessions' which includes 'Small Business Meetup: Relationship Marketing and the Power of Human Connection', 'Small Group Discussion: Social Media Strategy', 'Small Group Discussion: Showing up - Why What You Wear Matters', and 'Small Group Discussion: Build Your Dream Bookkeeping firm'. Each session has a '+' icon to its right for more information.

Time	Session Title	Action
7:30-7:00 am	Registration, Breakfast & Exploration	
7:30-10:30 am	Braindates New this year, you can use Braindates to book time with fellow attendees, expert consultants and the QuickBooks support team. Learn more Best for: All Audiences CPE Hours: not eligible	✕
8:00-8:30 am	Yoga	+
8:00-8:45 am	Breakout Sessions	
	Small Business Meetup: Relationship Marketing and the Power of Human Connection	+
	Small Group Discussion: Social Media Strategy	+
	Small Group Discussion: Showing up - Why What You Wear Matters	+
	Small Group Discussion: Build Your Dream Bookkeeping firm	+



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