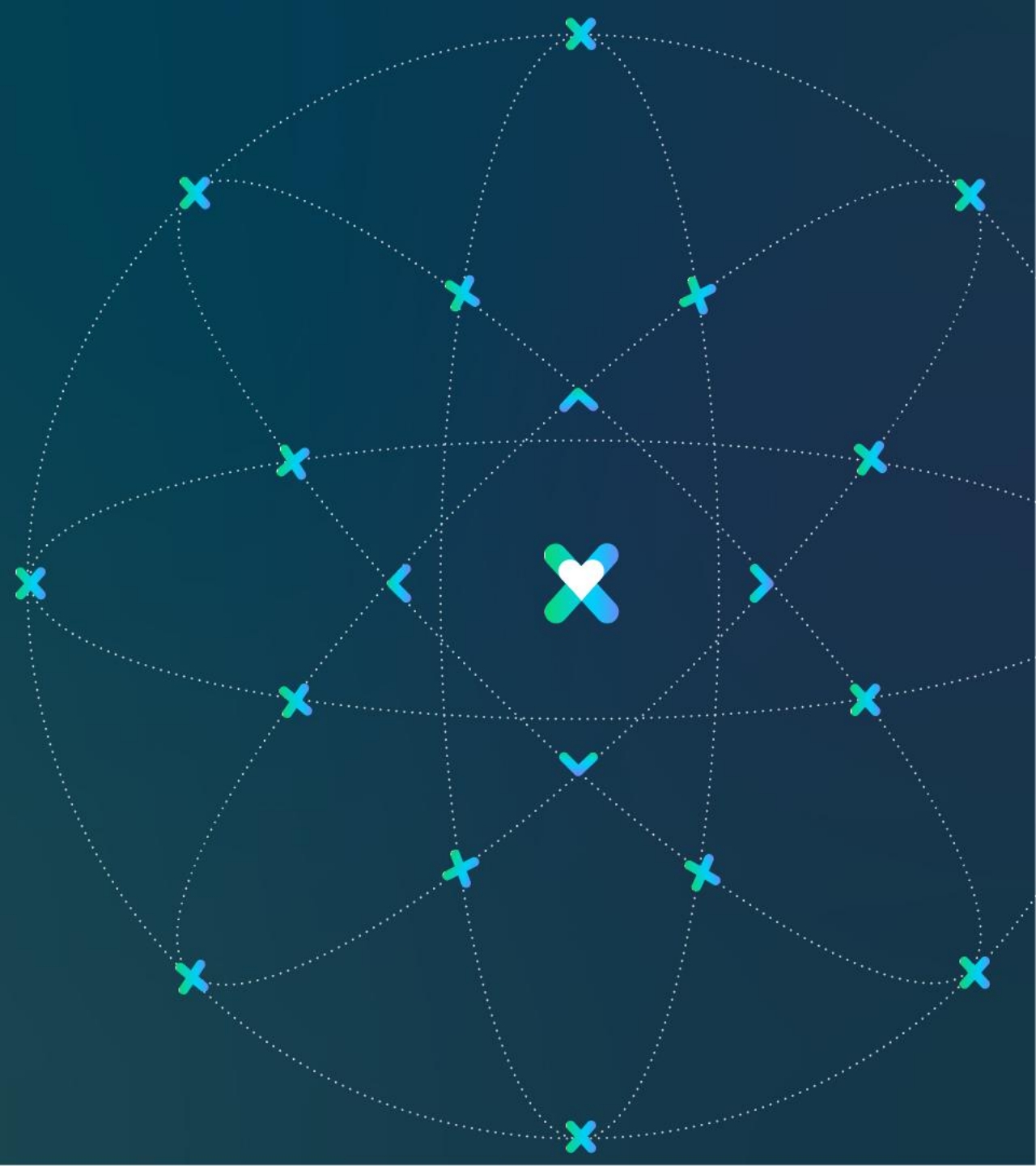# blackbaud®

Getting Started with SKY API® & SKY Add-Ins®

A Very Beginner's Guide

Glen Hutson – Principal Solutions Architect - Blackbaud

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Glen Hutson

Principal Solutions Architect

Joined Blackbaud in 2007
Been working with SKY API / SKY Add-ins since 2019

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Today

This is a"101" Session meant for those who are really new to the basic concepts of APIs and the tools available to take advantage of them.

Agenda

Discussing such questions such as:

1. What are APIs?

2. What is SKY API?

3. What are SKY Add-Ins?

4. How do Pro-Coders Get Started?

5. What is Power Automate?

6. How do Low-Coders Get Started with Power Automate?

7. Now why did I walk to the kitchen?

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Introduction

"OK, what is an API?"

*APIs (**A**pplication **P**rogramming **I**nterface) are mechanisms that enable two software components to communicate with each other using a set of definitions and protocols. For example, the weather bureau's software system contains daily weather data. The weather app on your phone "talks" to this system via APIs and shows you daily weather updates on your phone.*

--Via Amazon (https://aws.amazon.com/what-is/api/)

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Basic Concept of API

- Role of API
  - Allows distinct systems to share information with each other in a common, structured manner.
  - Prevents direct access to underlying data in each system.

- Think of a Restaurant
  - Waiter represents the API
  - Waiter relays requests and results between customer and kitchen

- Functionality
  - API receives requests from System A
  - API sends requests to internal parts of System B
  - API returns results to System A

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Another way of looking at it...

APIs work as an intermediary in front of another system. It allows access to a pre-selected set of data, often involving authentication to ensure that only the right parts of the outside world have access.

APIs: Not just for Web

- Though our focus is on APIs for Blackbaud's Web-based Solutions, APIs can be present in a number of different scenarios, such as on-device systems.

- Apple's MusicKit, WeatherKit, and HealthKit are examples of Device/Operating System APIs that are available to 3rd party developers and Apps. This allows access to data / parts of those features without direct access to the underlying part of the system.

- If you use any 3rd party apps integrated with Apple's Health / Fitness, you've probably been asked a *lot* to ensure that the right data is being shared.

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SOAP, REST, what?

In order for systems to communicate via an API, there needs to be some commonality established. There are various protocols (predefined structures) that are used in API Communication. Among the many, two are:

- SOAP – **S**imple **O**bject **A**ccess **P**rotocol
  - Available in BBCRM/Altru and Luminate Online

- REST - **Re**presentational **S**tate **T**ransfer
  - Available in a variety of Blackbaud Solutions.
  - The main focus of today's session.

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How SKY API fits in

There are many different APIs involved in Blackbaud Solutions.

SKY API is a REST-based framework introduced in 2014 to give a common API infrastructure across Blackbaud Solutions.

Started with Raiser's Edge NXT and Financial Edge NXT and then expanded to other solutions.

Blackbaud CRM/Altru and Grantmaking were recently added to SKY API.

Blackbaud also uses SKY APIs to facilitate communication among Blackbaud Solutions.

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My lightbulb moment

When working with something new, I always try to base it on a familiar frame of reference. In starting to really dive into APIs, the light bulb finally came on: I was trying making it more complicated than it needed to be.

Something familiar
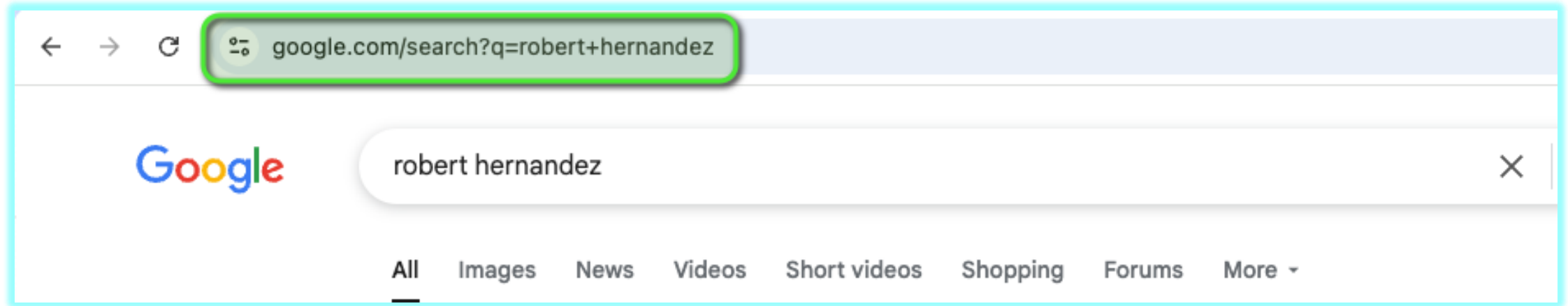
When using Google to search for Robert Hernandez, the address at the top includes:

https://google.com/search?q=robert+hernandez

Something new

I was taking a look at the SKY API documentation and noted that when "searching" Raiser's Edge NXT for Robert Hernandez via the API, this is what it looks like:

```
► GET https://api.sky.blackbaud.com/constituent/v1/constituents/search?search_text=robert%20hernandez
```

It's a bit more involved, but can you see the similarities?
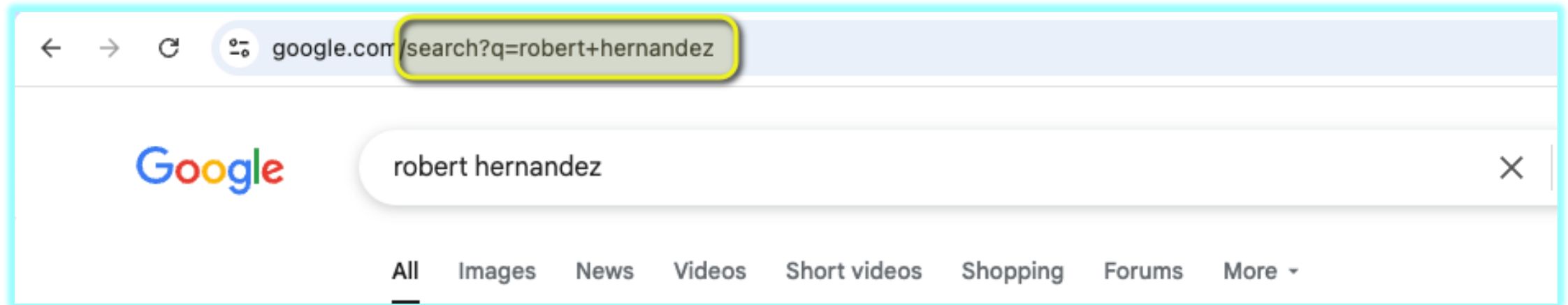
Don't try putting the API address directly within your browser, it won't work.

Instead of this...

User   Data   Website   Data   Responding Service

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... It's this...

Requesting Service · Data · API · Data · Responding Service
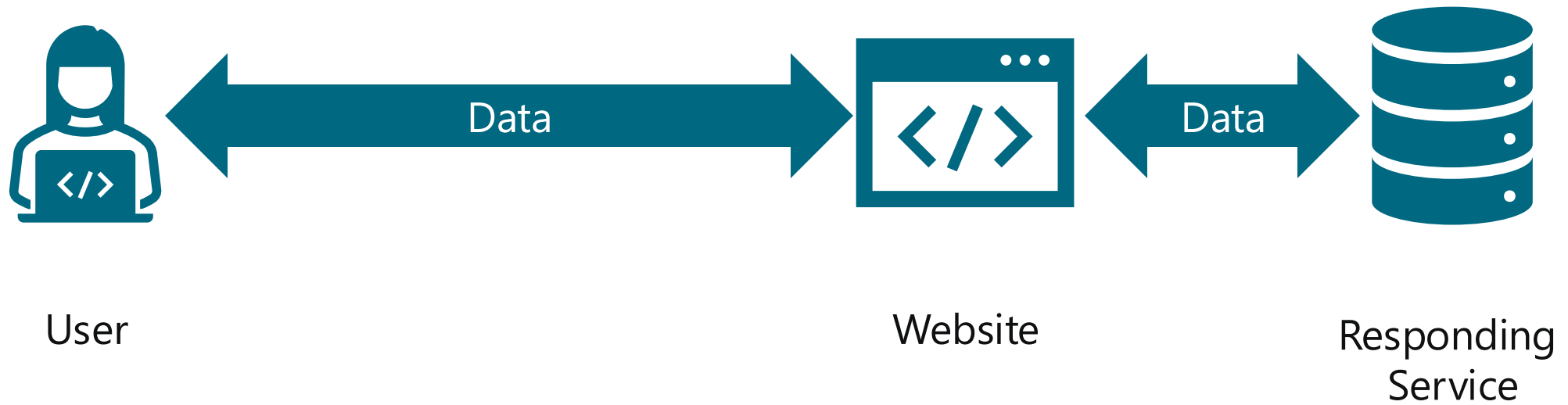
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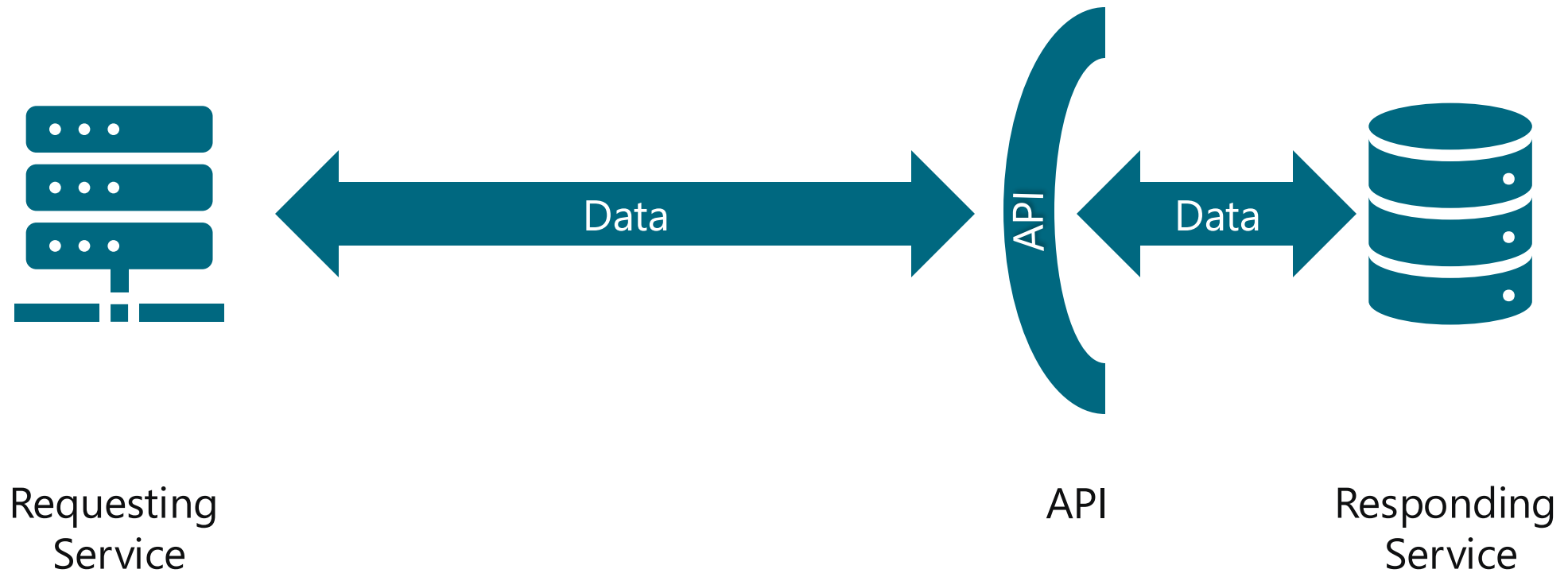
Slightly more complicated

If I wanted to tell the API to not include inactive records:

```
▸ GET https://api.sky.blackbaud.com/constituent/v1/constituents/search?search_text=robert%20hernandez&include_inactive=false
```

GET
https://api.sky.blackbaud.com/constituent/v1/constituents/search?search_text=robert%20hernandez**&include_inactive=false**

The Gist

SKY (REST) APIs use Web Addresses (URLs) with structures similar to what you see in a typical web browser, just with some additional pieces.

In fact, it uses some of the same "Methods" that are common to standard web browser functions:

- GET – Ask for information
  - GETting a web page.

- POST – Send information
  - Similar to what happens when you submit a form on a website

A couple of unique ones:

PATCH – Update Information

DEL – Well, delete some information

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Endpoints & Calls

An API **endpoint** is that specific type/piece of data you can access or modify in the API.

An API **call** is the specific request to an API endpoint.

In the previous example, this is **call**ing the *Search Constituent* **endpoint**.

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Who is this JSON and why do you keep talking about them?

- JSON – **J**ava**S**cript **O**bject **N**otation

- When systems talk to each other, they need a common language. JSON is one of several and the one used by SKY API.

- Used for the information that's returned as part of a GET call or as the data submitted as part of a POST or PATCH call.

- Uses a KEY: VALUE pairing

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JSON Examples

Single JSON Object

```
{
    "make": "DeLorean",
    "model": "DMC-12",
    "year": 1981

}
```

Multiple JSON Objects ("Array")

```
[
    {
        "make": "DeLorean",
        "model": "DMC-12",
        "year": 1981
    },
    {
        "make": "Cadillac",
        "model": "Miller-Meteor Sentinel",
        "year": 1959
    }
]
```

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SKY APIs and Permissions

- Connecting to SKY API uses a Blackbaud ID ("BBID").

- The permissions granted to that user are honored when using the SKY API.

- This means whatever changes you can make directly through the Solution (even Delete!) can be done via SKY API.

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Raiser's Edge NXT Terminology Change!

You may have already noticed, but with the introduction of Raiser's Edge NXT and SKY API, there's been a terminology change.

- *Previous*: "Constituent ID"
    - *Now*: "Lookup ID"

- *Previous*: "(Constituent) System Record ID"
    - *Now*: "Constituent ID" or simply "ID" depending on scenario.

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Now you can start *peeking* at API Documentation

- API Reference Starts at https://developer.blackbaud.com/skyapi/products where you can choose the solution for which you wish to explore the API.

- Note that "CRM" in the list is "Blackbaud Enterprise Fundraising CRM" which is different than Raiser's Edge NXT.

Blackbaud solutions

Altru	CRM
Education Management	Financial Edge NXT
Grantmaking	Merchant Services
Online Giving	Raiser's Edge NXT

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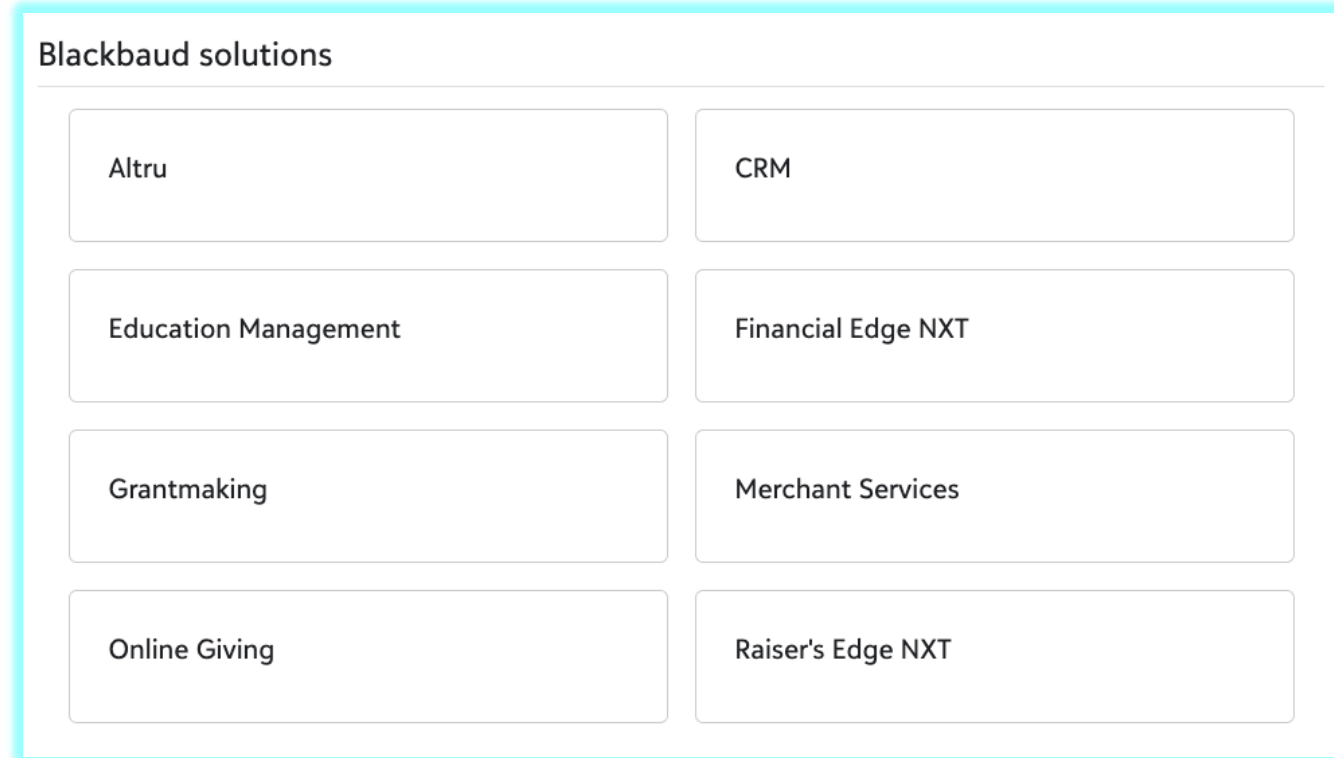
Raiser's Edge NXT Search Constituent

https://developer.sky.blackbaud.com/api#api=56b76470069a0509c8f1c5b3&operation=SearchConstituent

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Raiser's Edge NXT Get Action

https://developer.sky.blackbaud.com/api#api=56b76470069a0509c8f1c5b3&operation=GetAction

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Extensibility Concept

When getting a new smartphone, it has several built-in apps and functions. However, you may want more than what's out of the box and add onto it. That's one example of extensibility.

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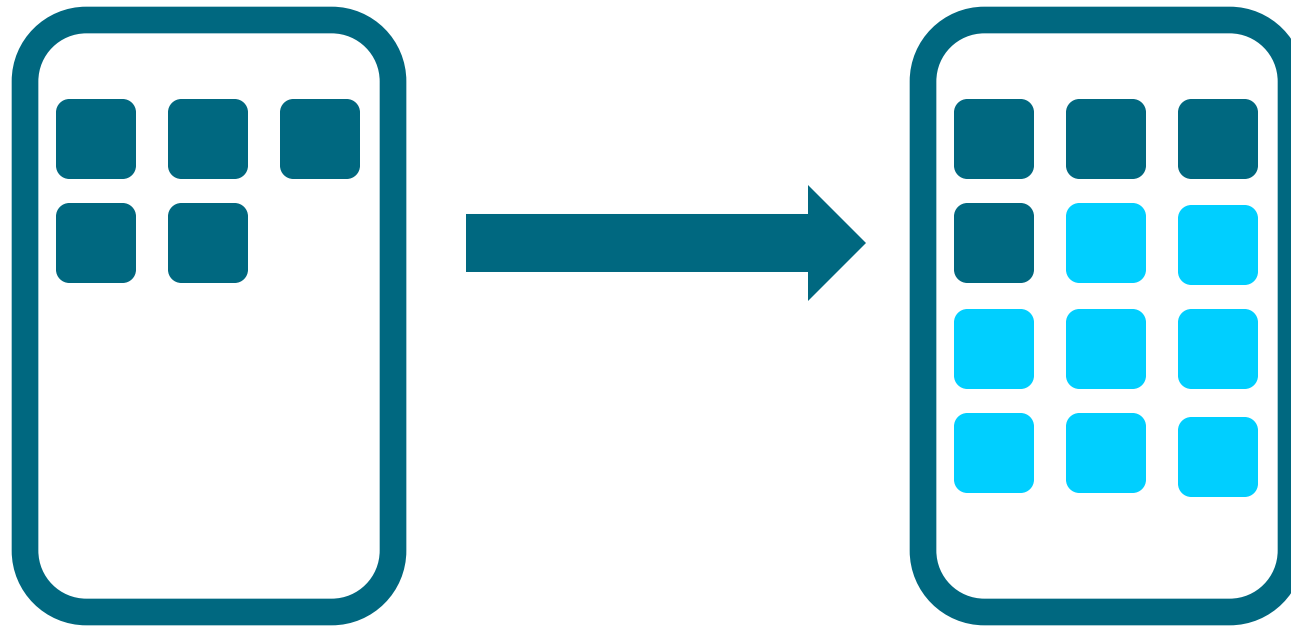
Intro to SKY Add-ins

- SKY Add-Ins are an *Extensibility* feature of Blackbaud Solutions

- It allows for adding features/functions without directly touching the underlying Blackbaud Solution.

- Available to Customers, Partners, and non-related 3rd parties.

- Often shows up as a "Custom Tile" but can also take the form of fly-outs, modals (pop-ups), and full pages.

- Uses SKY API to help exchange information.
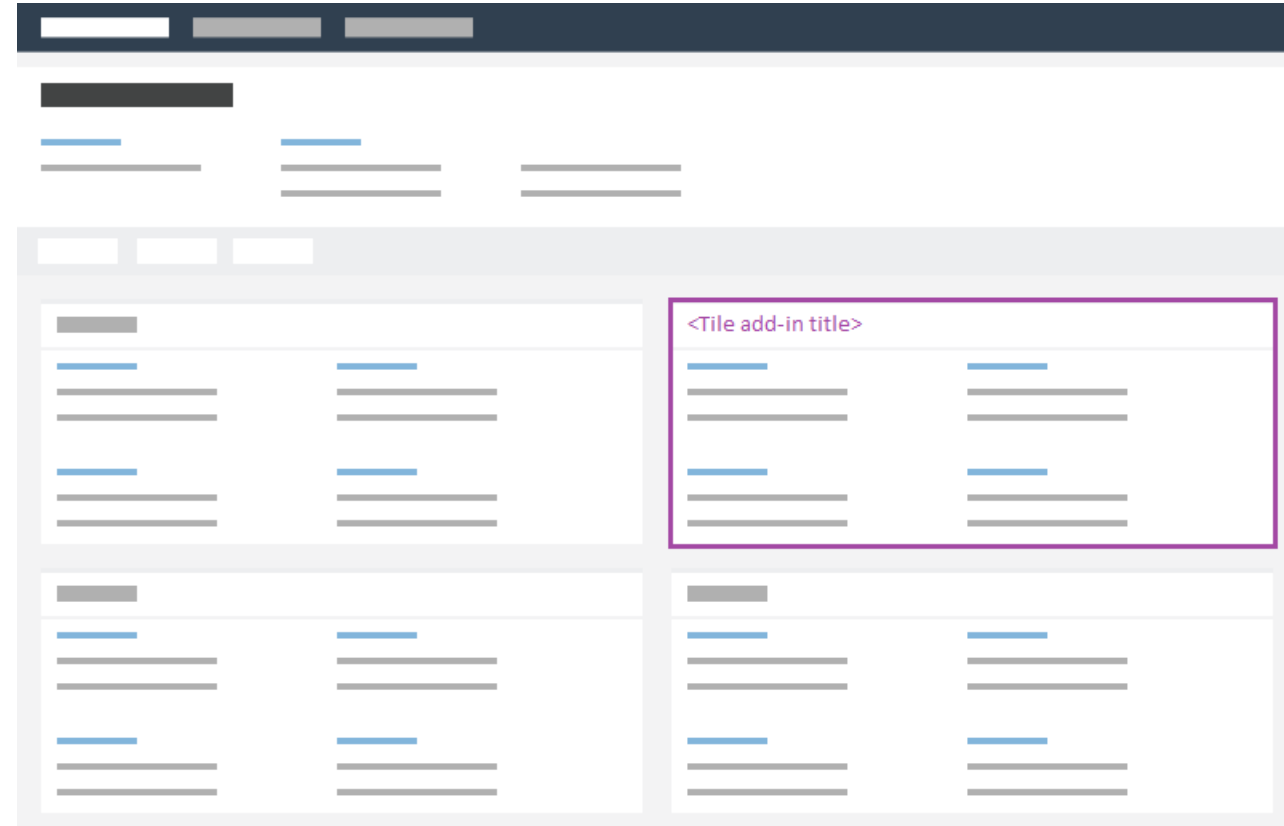
The Result

- SKY Add-ins are what allows 3rd party functionality to appear in-product.
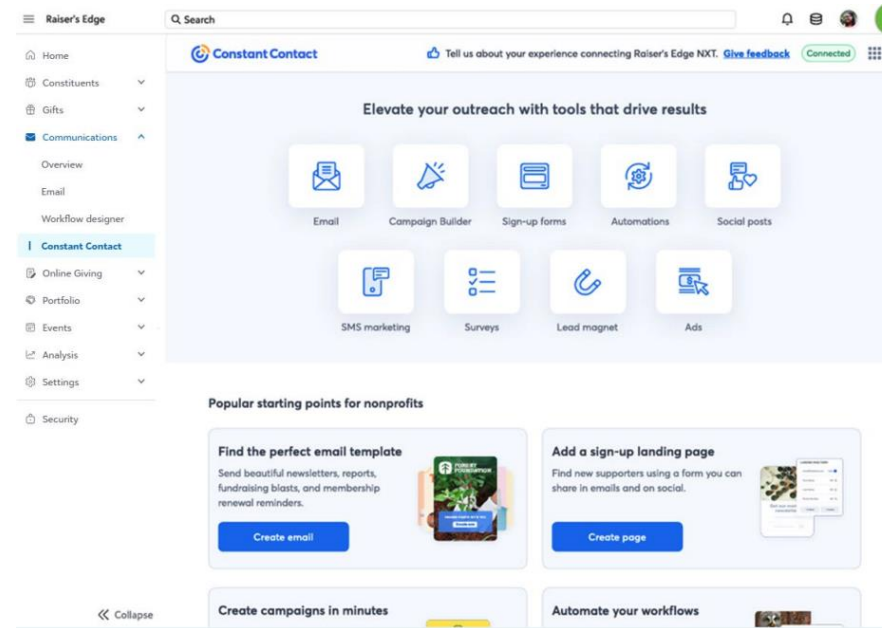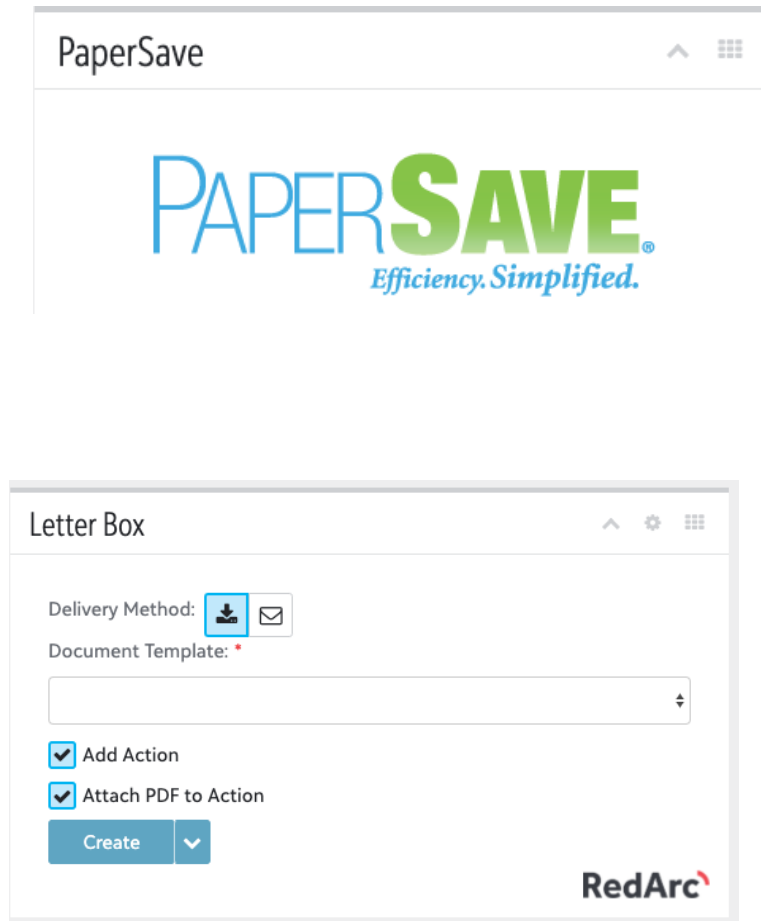
The data/functionality doesn't exist in the SKY Add-in -enabled solutions but rather surfaced in them.

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Where can I put SKY Add-ins?

- Raiser's Edge NXT

- Raiser's Edge NXT Donor Portal

- Financial Edge NXT

- Blackbaud Grantmaking

- Blackbaud Education Management (limited)

- Blackbaud Enterprise Fundraising CRM (limited & Cloud Operations Only)

- Altru (Independent Page Only)

- Online Giving

The "where" and the "what" varies by Solution.

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External data along with native data

- Data doesn't have to live *in* Raiser's Edge NXT to complete the 360-degree view of your constituents.

- It's using Weather API to gather the information.

Cross-Reference Between Systems

- In Financial Edge NXT, automatically pull Vendor Giving Summary information from Raiser's Edge NXT.

- It's using Raiser's Edge NXT SKY API to get the giving information.

Custom Functionality

- Create custom data entry screens to give limited-rights users the ability to submit information change requests right from the record.

Ways to Test

- Some label options as "Good, Better, Best". These are "Meh, Better, Best".

- Meh: Examples Records in Live DB
  - Pros: Your data structure (Campaigns, Funds, Appeals, Custom Fields, etc)
  - To Consider: Need to update your reports, queries, etc to filter out the test records. May accidently change or delete records you didn't intend to.

- Better: Cohort Database - Free Shared DB.
  - See https://kb.blackbaud.com/knowledgebase/articles/Article/205032 (or search for "SKY Developer Cohort") for details on which cohort environments are available and how to get access.
  - Pros: Don't have to worry about accidently altering your live data. Can test items before pushing them live.
  - To Consider: Not your data structure. Some access may be limited.

- Best: Your own Test Environment
  - Pros: Copy of your data, using your data structure, with records you recognize. Can test items before pushing them live.
  - To Consider: Additional Blackbaud Subscription. See your Account Manager for more info.

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Getting Started: Pro Code

If you are a programmer or have a programmer ("Pro-Code") on staff, there is a lot of info available:

- General Developer Info: https://developer.blackbaud.com/
- SKY Add-Ins Info: https://developer.blackbaud.com/skyapi/docs/addins
- RENXT Specific Info: https://developer.blackbaud.com/skyapi/products/renxt
- SKY API Community: https://community.blackbaud.com/forums/viewcategory/425
- Blackbaud Developers' Conference (You are Here!) has a number of pro-code sessions: https://www.blackbaud.com/bbdevdays

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Yeah, what about other options? One that don't include as much coding?

Low-code building blocks for every developer

The Power Platform is an extensible platform of low-code tools that makes it easy to create efficient and flexible solutions rapidly in an environment you trust.

Power Apps
Application development

Power Automate
Process automation

Power BI
Business analytics
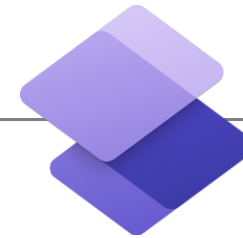
Power Pages
External websites

Copilot Studio
Intelligent copilots

Data connectors

AI Builder

Microsoft Dataverse

Power Fx

Managed Environments

Introduction to Power Automate

- Part of the Power Platform by Microsoft

- API Accessibility
  - Hides complex API details

- Provides a drag-and-drop interface
  - Similar to RENXT Workflows

- User-Friendly for Non-Programmers
  - Designed for 'low-coders'
  - Empowers users without programming skills

Power Automate – Connectors

Office 365 Outl... | SharePoint | Microsoft Data... PREMIUM | OneDrive for B... | Microsoft Forms | Planner | Microsoft Teams | Outlook.com

RSS | SQL Server PREMIUM | Power BI | Azure DevOps PREMIUM | OneNote (Busi... | Notifications | Office 365 Users | Google Calendar

Approvals | Twitter | Excel Online (B... | Mail | Microsoft To-D... | Gmail | MSN Weather | Outlook Tasks

Dropbox | Trello | Project Online | Azure Applicati... | Project Roadmap | File System | FTP | Google Drive

A *Connector* is what links an external system into Power Platform.

https://powerautomate.microsoft.com/en-us/connectors/

Generally Speaking, a connector is a "wrapper" for an API. It hides the nitty gritty while still maintaining the impact. If something is not in a related API, it won't be in the connector.

The Blackbaud Family of Power Platform Connectors
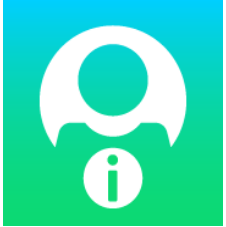
Blackbaud Raiser's Edge NXT Constituents
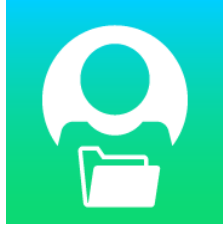
Blackbaud Raiser's Edge NXT Documents

Blackbaud Raiser's Edge NXT Events

Blackbaud Raiser's Edge NXT Fundraising
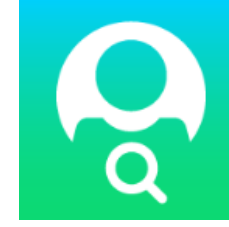
Blackbaud RENXT Query
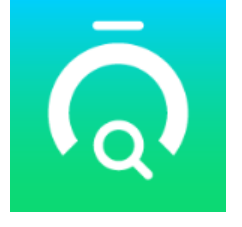
Blackbaud FENXT Query
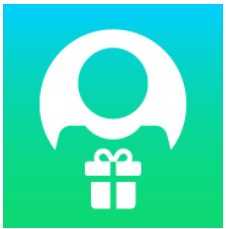
Blackbaud RENXT Gifts

Blackbaud Raiser's Edge NXT Interactions

Blackbaud Raiser's Edge NXT Lists

Blackbaud Raiser's Edge NXT Prospects
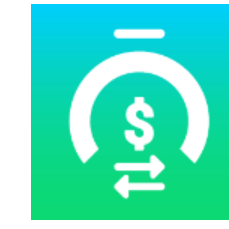
Blackbaud FENXT Payable
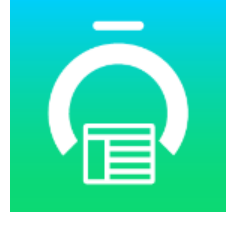
Blackbaud FENXT General Ledger
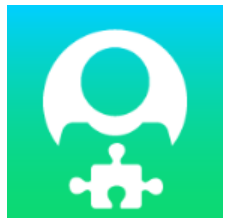
Blackbaud SKY Add-ins
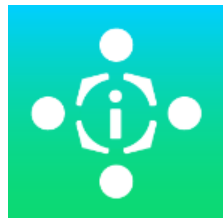
Blackbaud CRM Constituent
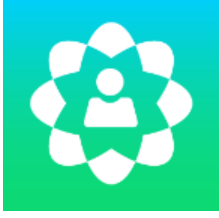
Blackbaud Altru Constituent
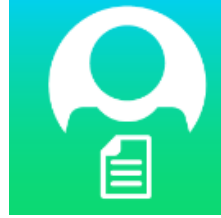
Blackbaud RENXT Reports

More on the way!

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Microsoft Connectors

Office 365 Outlook	
Excel Online (Business)	
Word Online (Business) **Premium**	
SharePoint	
Planner	
Approvals	
OneDrive	
Microsoft Teams	
Microsoft Forms	
Outlook Tasks	

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What about G-Suite?

Google Calendar

Google Contacts

Google Drive

Google Sheets

Google Tasks

Form Building

Cognito Forms

JotForm
Premium

SurveyMonkey
Premium

Gravity Forms by reenhanced
Premium

Contracts/ Signatures

Adobe Acrobat Sign

DocuSign
Premium

Project Management

Basecamp 3

Trello

Asana

Events

GoToWebinar
Premium

Eventbrite
Premium

Marketing

Gratavid
Premium

Twitter

MailChimp
Premium

Twilio

WordPress

Program Management

Salesforce
Premium

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Ad-hoc notification and report delivery

Get ad-hoc reports and notifications delivered to your inbox (or Teams / Slack, etc)

- Past Due Actions

- Major Gifts Last week

Public-facing data collection

Use a Microsoft Form (or similar) on your main website to collect information and even send it to the system as an actionable item.

Remember these Examples: All w/Power Automate

SKY Add-In visuals may be (but not always) facilitated via Adaptive Cards or Power Apps, which are outside the scope of this discussion.

Extend to your Desktop / Mobile Device

WiiFM?

Not Nintendo Wii Radio, but "what's in it for me"?

Power Automate can be used for many types of daily tasks. My first ones included:

- Custom automatic reply for meeting requests that meet certain criteria.

- Adding automatic buffers before/after meetings.

- For extended Out of Office, reset my Outlook Automatic Replies so they are sent to each recipient more than once to remind them I'm still out.

Before even touching Blackbaud Solutions, using it for my daily activities is what made Power Automate "real" to me.

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Getting Started: Low-Coders using Power Automate

- Power Automate Getting Started: https://docs.blackbaud.com/microsoft-connectors-docs/microsoft-power-platform/power-automate

- Power Platform Specific Community: https://community.blackbaud.com/forums/viewcategory/586

- Pre-Built free templates created by Blackbaud Staff, Customers, and Partners: https://docs.blackbaud.com/microsoft-connectors-docs/microsoft-power-platform/showcase

- Blackbaud University Training: Courses are constantly being updated and re-evaluated, so search for "Power Platform" or "Power Automate".

- On-site Regional Workshops & Monthly User Groups: https://community.blackbaud.com/events/category/66

- Blackbaud Developers' Conference (You are Here!) has a slew of Low-Code sessions, including hands-on workshops: https://www.blackbaud.com/bbdevdays

- Pre-BBCon Workshop: https://www.bbconference.com/2025/preconference_workshops

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Questions, comments?

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