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Whether you are evaluating an internal tool development platform for the first time or you are a current customer dissatisfied with a platform's functionality, performance, or price, this list is for you.

We have extensively researched the internal tool development space and compiled the 6 best products based on functionality, generative AI capabilities, extensibility with code, enterprise readiness, pricing, maintenance costs, security, and support. The internal tooling market in 2023 has evolved from solely application builders to include workflow automation and scheduled jobs, which many of the top vendors have brought to market.

Company	Headquarters	Product Suite	AI Capabilities	Last Round Funding
 Superblocks	 USA	 Apps  Workflows  Scheduled Jobs	 SQL  JS  Python  JSON  HTML  API	   \$37MM (August 2022)
 Retool	 USA	 Apps  Workflows  Scheduled Jobs	 SQL  JS  AI	   \$45MM (July 2022)
 Appsmith	 India	 Apps	 SQL  JS	   \$41MM (June 2022)
 UI Bakery	 Lithuania	 Apps  Workflows  Scheduled Jobs	 SQL	Not publicly available
 DronaHQ	 India	 Apps  Workflows  Scheduled Jobs	 SQL	 \$0.5MM (February 2018)

What is an internal tooling platform?

Internal tooling platforms are software platforms for building custom internal software such as admin dashboards, database GUIs, and more. The most popular internal tooling platforms are composed of:

- **Application Builder:** A drag & drop editor for building application front-ends using a library of components, as well as support to read from and write to integrated databases and APIs and build out business logic
- **Workflow and Scheduled Job Builder:** A dedicated interface to build automated workflows visually and in code, to implement comprehensive business logic, which can be invoked over HTTP as REST APIs or on a schedule as cron jobs.

The highest quality internal tooling platforms are primarily UI-based, yet fully extensible with custom code, ensuring that businesses increase their development velocity while still benefiting from the flexibility of custom development.

Internal tooling platforms typically offer out-of-the-box support for granular permissions, native versioning and deployment controls, audit logging, and other core capabilities, all of which would be expensive to develop in-house. Additionally, top-tier internal tooling platforms provide native AI capabilities, such as integrations with popular large language models and an AI copilot for development.

Finally, most internal tooling platforms offer cloud and self-hosted options; self-hosting is common for businesses with sensitive data which cannot leave their VPCs.

"Superblocks gives engineering teams wings! Teams can focus on things that require their unique expertise while letting Superblocks handle the rest. It's an excellent tool especially for operationally intensive businesses where efficiency is paramount."



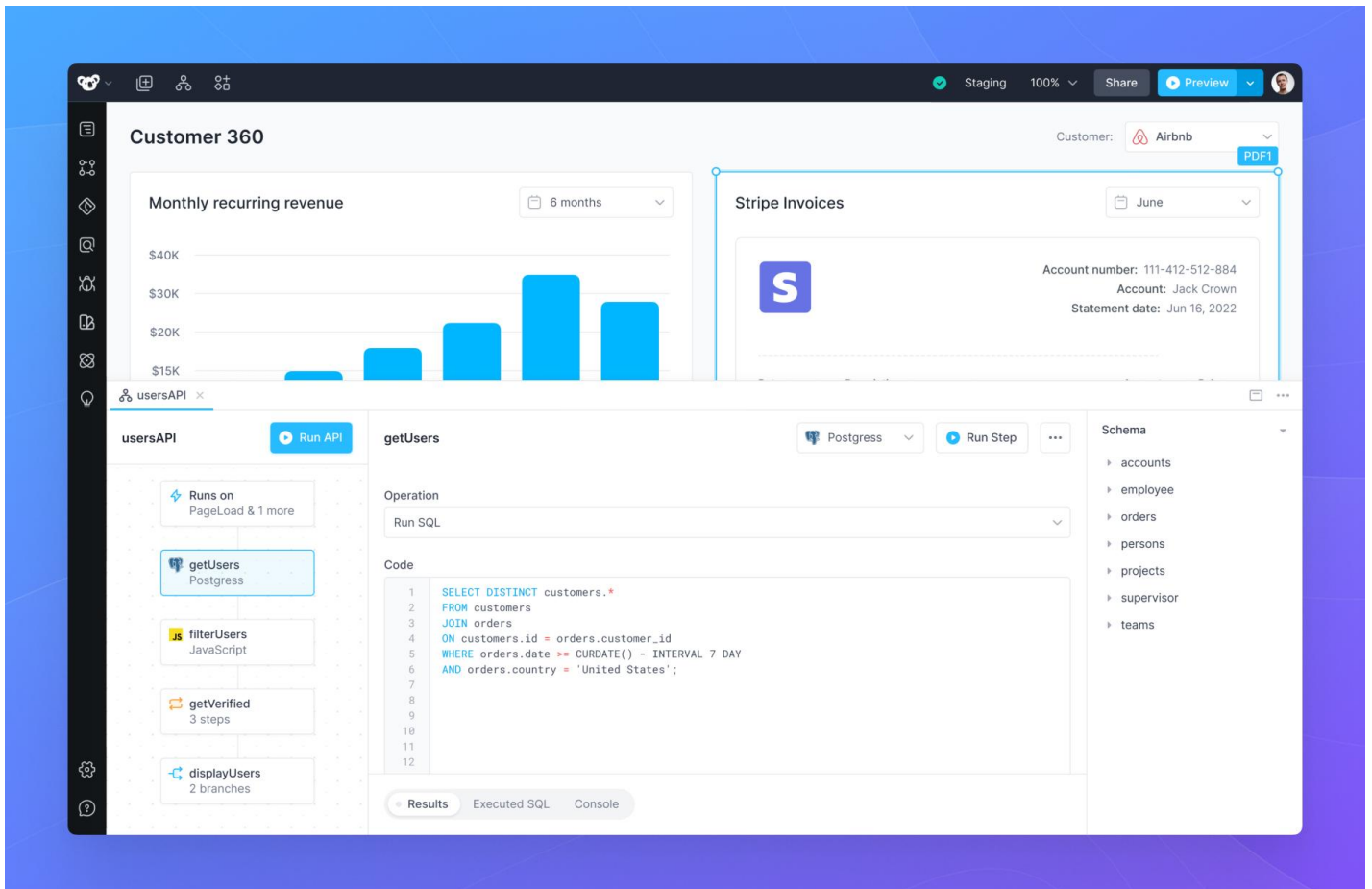
Apoorva Mehta
Founder at Instacart



The 5 Best Internal Tooling Platforms in 2023

Superblocks

Superblocks is an NYC-based, enterprise-ready, low-code without limits platform for building custom internal applications, automated workflows, and scheduled jobs. Developers can extend Superblocks infinitely with code, build faster with an AI Copilot, self-host without the overhead, and deliver performant apps at scale, all while adopting affordably across their organization.



Strengths	Weaknesses
<p>Infinite Extensibility with Code: Superblocks is infinitely extensible with code, allowing developers to write complex backend APIs with NodeJS and Python, leverage Javascript on the front-end, and build custom components with React within their own IDE and filesystem.</p>	<p>Newer Entrant: Superblocks was founded in 2021. However, Superblocks has seen rapid growth, with thousands of active users and a \$37MM Series A fundraising round led by Kleiner Perkins.</p>
<p>Architected for Enterprise Scale & Performance: Superblocks application front-ends are multi-threaded for smooth UI rendering, while back-end queries scale elastically with on-demand cloud compute - critical for the enterprise.</p>	<p>No Support for Native Mobile Apps: Superblocks does not support building native mobile applications for iOS or Android. However, Superblocks does support building mobile-responsive web applications.</p>

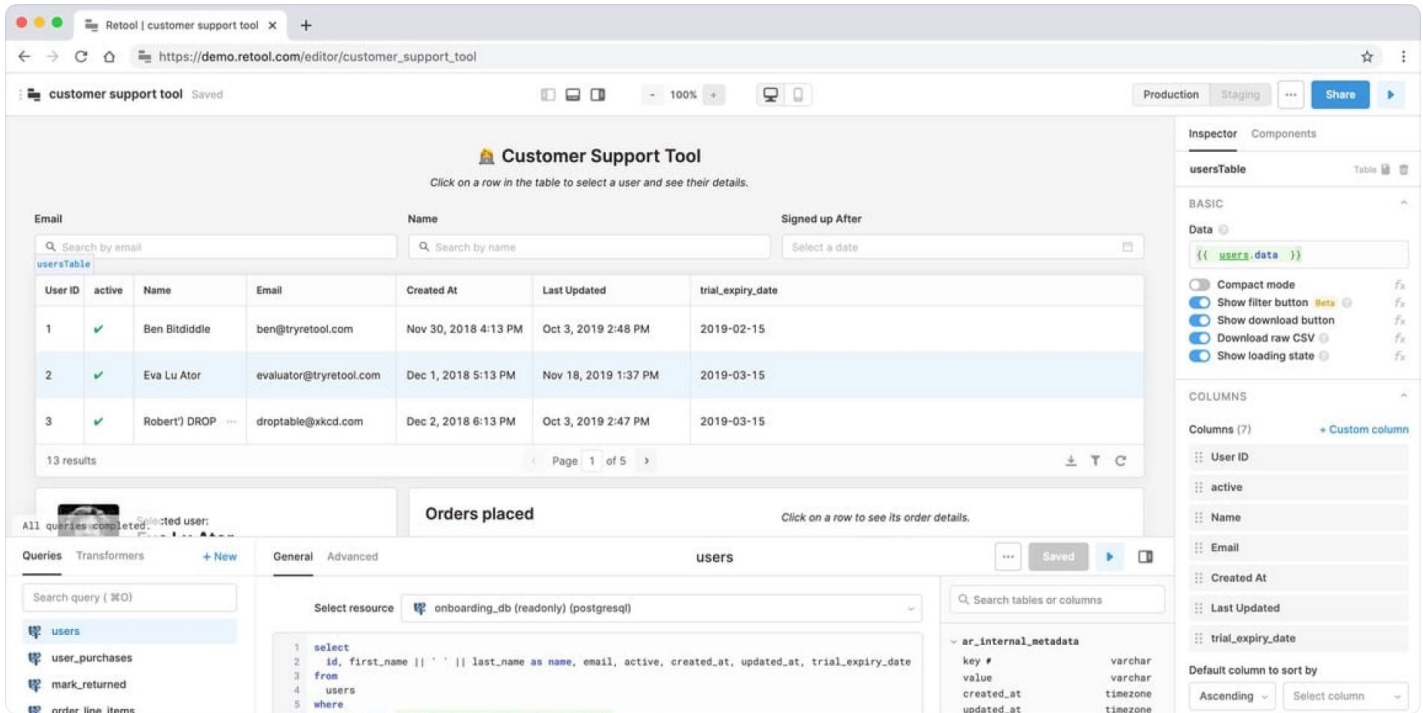
<p>Generative AI Native: The context-aware Superblocks AI Copilot supercharges development, with support to generate, explain, and debug SQL, JavaScript, Python, JSON, and HTML, as well as integrate with REST APIs.</p>	<p>User Analytics in Private Beta: The ability to view user analytics for usage of your applications, such as number of views, time spent in an app, and more is currently in private beta, as of September 2023.</p>
<p>Self-Hosted Agent Architecture: The Superblocks On-Premise Agent is lightweight, stateless, simple to deploy, and new App Builder features are instantly available from the cloud while ensuring that customer data never leaves your network.</p>	<p>No Airgapped Deployments: Superblocks does not support an airgapped deployment model, as businesses self-host Superblocks with an agent architecture rather than a legacy on-premise model.</p>
<p>Production Monitoring and Observability: Superblocks integrates with observability providers like Datadog, Splunk, and New Relic, so you can view metrics, traces, and logs within your preferred provider.</p>	
<p>Flexible, Fair Pricing: Superblocks offers flexible usage-based pricing, including a dedicated price for Light Users which ensures you can affordably roll out Superblocks tools org-wide. The Superblocks On-Prem Agent is available to all customers at no additional cost.</p>	

Conclusion: Superblocks offers a fully-featured low-code internal tooling platform without limits. Some notable benefits of Superblocks include:

- **Infinite Extensibility with Code:** Superblocks supports writing code in React, JS, Node, and Python. Developers can build fully custom components in React, including importing any component from the web or their codebase.
- **Deep AI Functionality:** The Superblocks Copilot supports generating, editing, and explaining SQL, Python, JavaScript, HTML, and JSON, and integrating with REST APIs.
- **Scalable Architecture & Performance:** Application front-ends in Superblocks are multi-threaded for smooth UI rendering, while back-end queries scale elastically with on-demand cloud compute.
- **Low Overhead When Self-Hosting:** Superblocks offers a lightweight, stateless On-Premise Agent, which is simple to deploy and provides access to new App Builder features instantly from the cloud.
- **Production Monitoring and Observability:** Superblocks connects with observability platforms like Datadog, Splunk, and New Relic, delivering insights from internal tools directly to your favored platform.
- **Fair, Flexible Pricing:** The Superblocks pricing model scales across organizations with a dedicated rate for light users, and the On-Premise Agent is available to all customers at no additional cost.

Retool

Retool is a San Francisco-based internal tooling platform. Founded in 2017, Retool provides an application builder, integration library, and enterprise features such as RBAC, version control, SSO, and audit logging. Despite the company's early entry into the market, notable shortcomings include limited extensibility with code, poor performance, and a heavyweight legacy on-premise deployment model with delayed feature rollouts, among others.



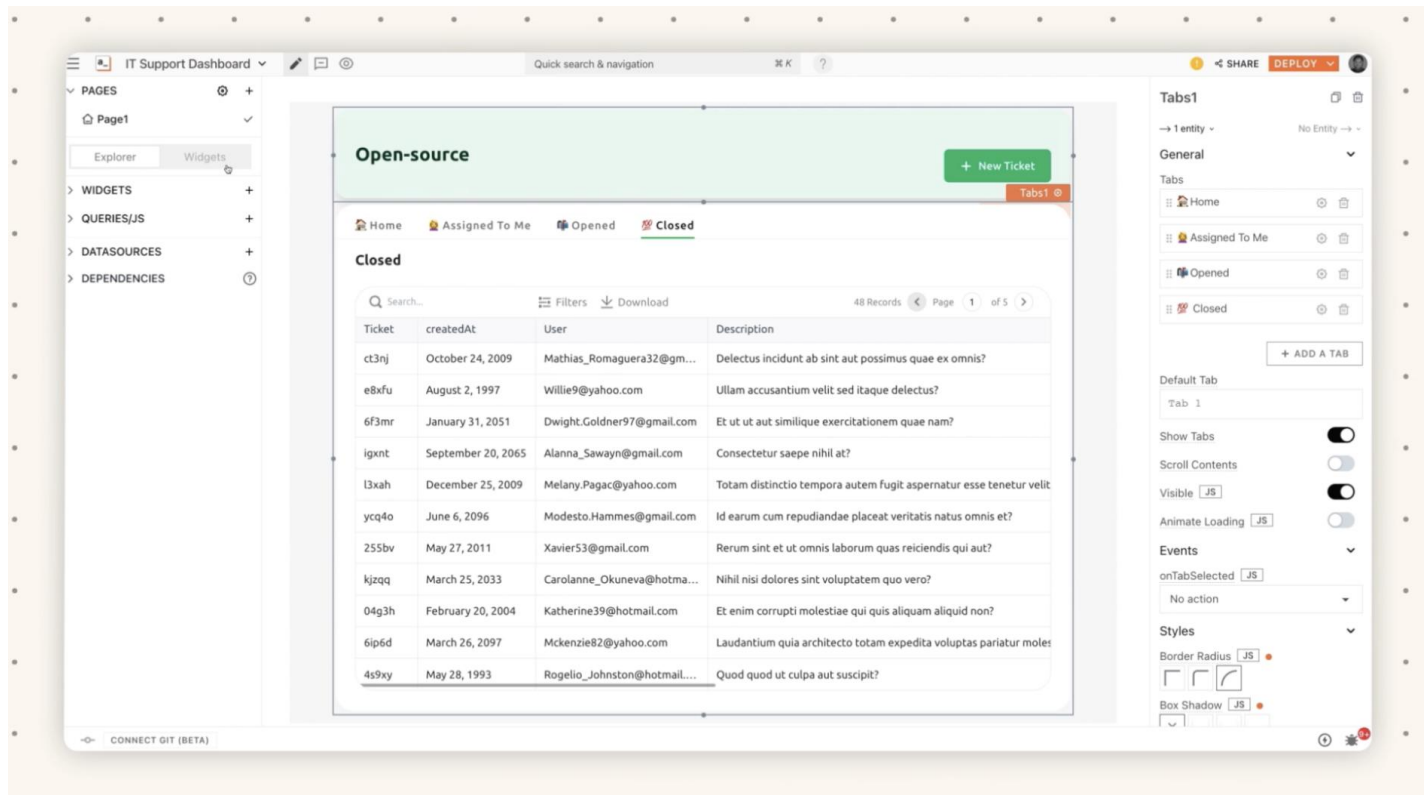
Strengths	Weaknesses
<p>Drag & Drop Application Builder: Retool offers an intuitive drag & drop application builder, with a vast library of pre-built UI components.</p>	<p>Limited Extensibility with Code: Retool lacks language support beyond JavaScript in applications, and provides a limited custom component offering, posing potential roadblocks for developers.</p>
<p>Integration Library: Retool offers an extensive library of integrations with databases and APIs, allowing businesses to connect to their data sources.</p>	<p>Poor Performance: Retool apps often suffer from poor performance due to browser-based code execution, single-step queries, and a lack of global edge caching.</p>
<p>Granular Permissions (RBAC): Retool supports role-based access controls, enabling granular access to tools.</p>	<p>Poor Workflow UX: Retool's Workflow builder uses a convoluted flow diagram to control logical control flow, presenting UX challenges when building enterprise business logic.</p>
<p>Version Control: Retool supports version control via Git syncing and support for users to create and preview different versions.</p>	<p>Legacy On-Premise Deployment Model: Retool's legacy on-premise deployment is resource-intensive and complex, impeding businesses from accessing new features and security fixes.</p>

<p>Enterprise Features: Retool offers a number of enterprise features such as SSO, audit logging, and an enterprise support team.</p>	<p>Expensive Software & Platform Fees: Retool's inflexible pricing model as well as hefty platform fees and imposed user minimums when self-hosting make it prohibitively expensive for many businesses.</p>
<p>Native Mobile Apps: Retool Mobile provides a dedicated solution for building native iOS and Android mobile apps within Retool.</p>	<p>Security Breach: Retool had a <u>significant data breach</u> in August 2023, with many customers' accounts being compromised, resulting in leakage of sensitive data and <u>reported losses of up to \$15MM</u> for a single customer.</p>

Conclusion: Retool is a feature-rich internal tooling platform for building enterprise internal applications, workflows, and mobile apps. Despite its prominence, Retool users commonly cite platform usability, performance, limited extensibility in code, lack of AI support, a heavyweight on-premise deployment model, and expensive fees as shortcomings of the Retool platform. Retool's recent security breach also raises concerns for businesses interacting with sensitive information.

Appsmith

Appsmith is an India-based open-source internal tooling platform. Appsmith provides a strong application builder, though it notably does not support automated workflows or scheduled jobs. Appsmith has a growing developer community on Github and provides both a cloud and fully on-premise deployment that can be airgapped.

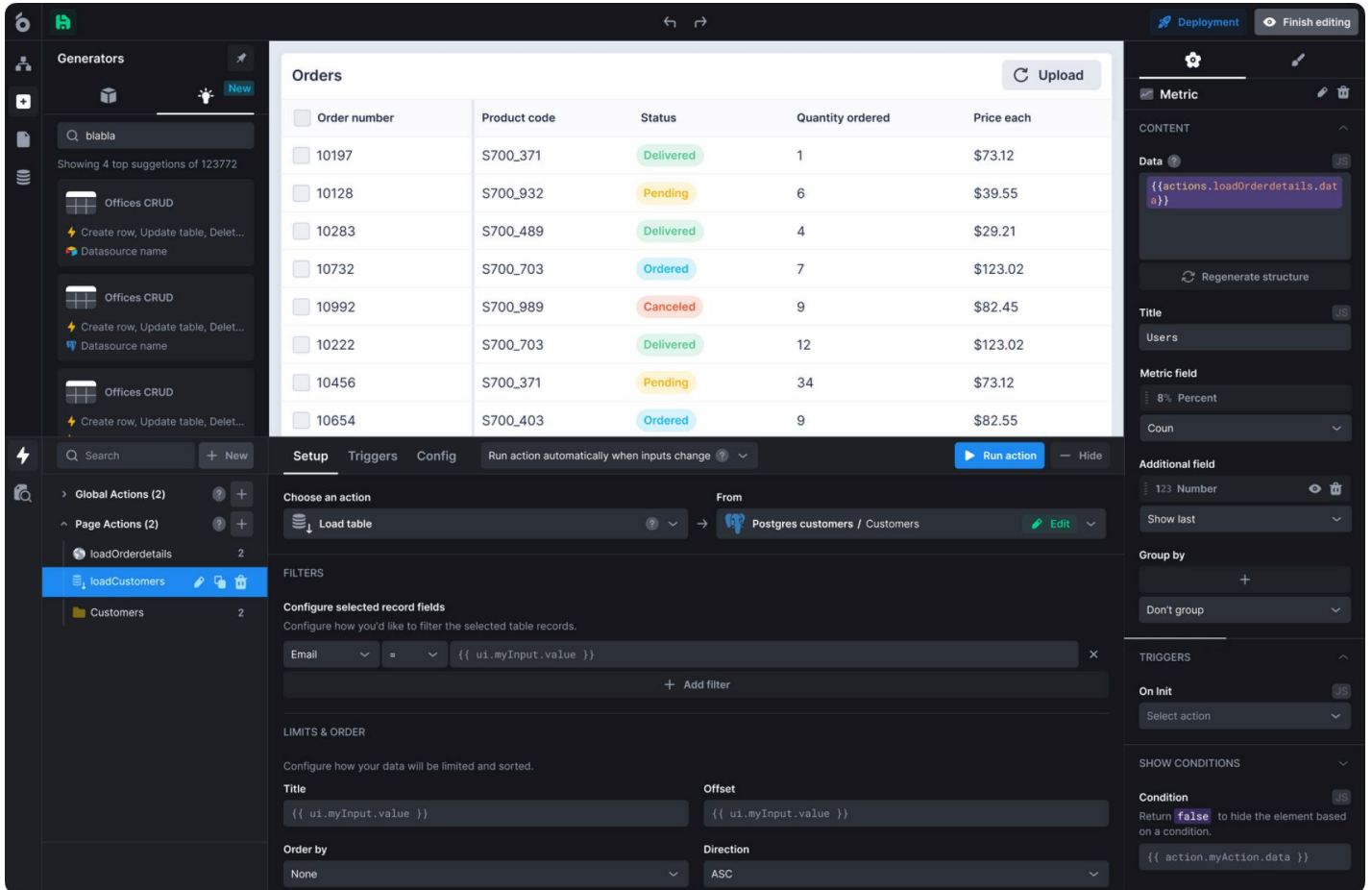


Strengths	Weaknesses
<p>Open-Source: Developers can audit the entire Appsmith codebase, and contribute to the Appsmith platform.</p>	<p>Limited Extensibility with Code: Appsmith lacks language support beyond JavaScript in applications, and provides a limited custom component offering, posing potential roadblocks for developers.</p>
<p>Community on Github: The Appsmith repository has ~28k Github stars and over 200 contributors.</p>	<p>No Backend APIs: Any code written on Appsmith is executed in the browser; developers cannot write backend APIs, which results in limited extensibility and degraded performance.</p>
<p>Styling Customization in App Builder: Appsmith enabled developers to customize the styling of components by exposing a variety of styling properties for most components.</p>	<p>No Workflows and Scheduled Jobs: Appsmith does not have a workflows offering, so businesses would need to contract with another vendor to handle programmatic workflows.</p>
<p>Source Control with Git: Appsmith offers Git-based source control via integrations with GitHub, GitLab, and Bitbucket, allowing businesses to manage app versions directly in their preferred Git provider.</p>	<p>No AI Capabilities: Appsmith has no support to easily leverage AI; Appsmith does not offer an AI copilot for developers or a native integration with OpenAI.</p>
	<p>No US-Based Support: Appsmith is based in India and does not have US-based support, which is often critical to US-based enterprises.</p>

Conclusion: Appsmith is a good option for building internal applications, especially if a business strongly prefers a fully open-source vendor. However, Appsmith does not offer support for automated workflows or scheduled jobs; without workflows or multi-step backend application APIs, Appsmith does not provide fast query performance when working with large data sets or complex business logic, making it unsuitable for mission-critical business applications in the enterprise.

UI Bakery

UI Bakery is a less expensive offering intended primarily for small and midsize businesses. UI Bakery includes an application builder as well support for workflows and scheduled jobs. UI Bakery supports multi-step application APIs, enabling businesses to build out complex business logic. The UI Bakery team is based in Lithuania and is composed of ~10 employees.



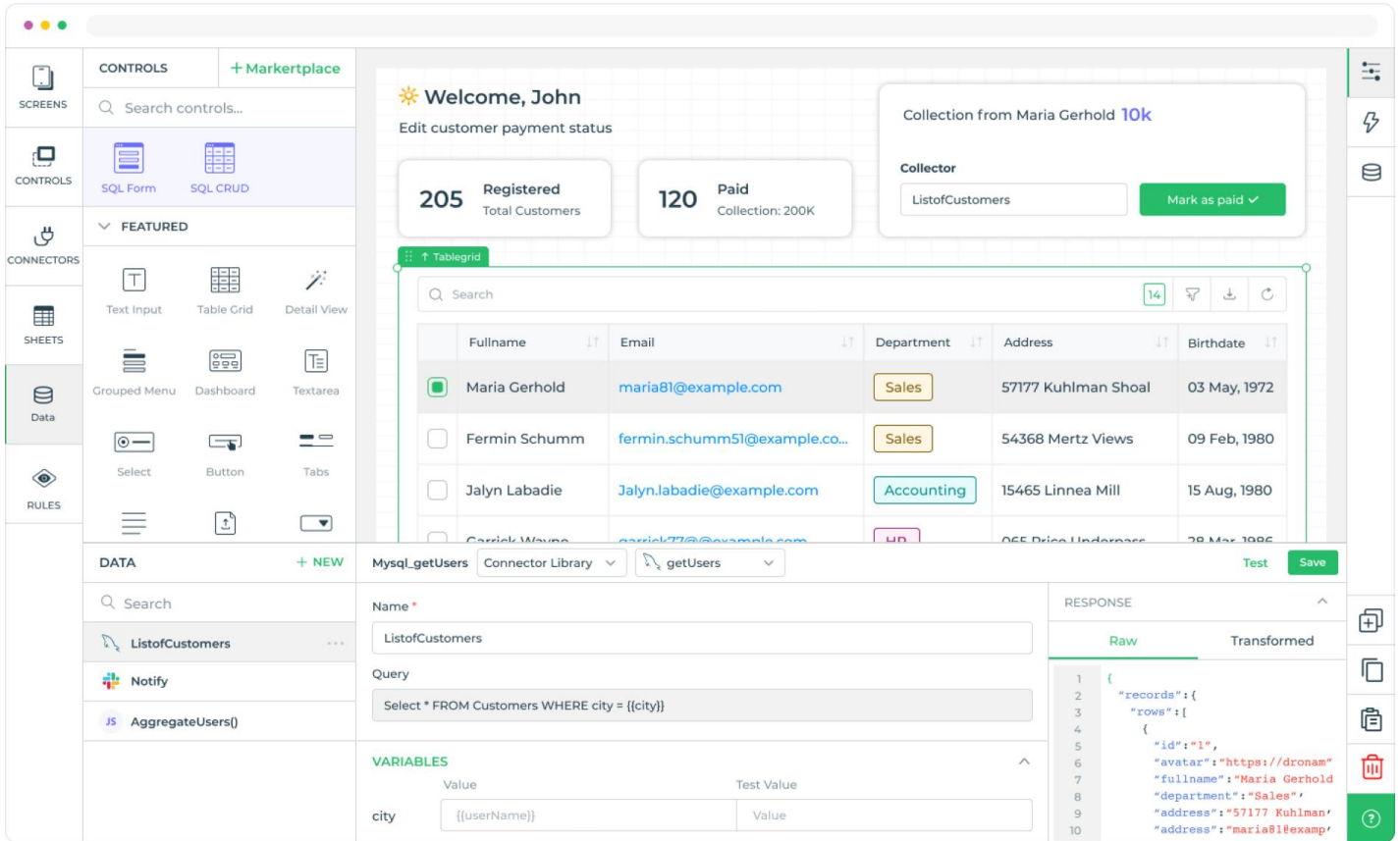
Strengths	Weaknesses
<p>Less Expensive at Scale: UI Bakery's pricing is reasonably affordable at scale, with their premium offering being priced at a flat rate of \$249/month plus \$19 for each additional user after the first 10.</p>	<p>No Deployment Control and Previews: UI Bakery does not offer support to preview changes made to apps via a shareable URL, commit those changes and view previews for historical commits, or deploy commits. The only option in UIBakery is to deploy the working version.</p>
<p>Workflows and Scheduled Jobs: UI Bakery offers a workflow builder with a sequential step interface that is simple to use. These workflows are available as part of the self-hosted and cloud offerings.</p>	<p>No AI Copilot: UI Bakery does not offer a built-in AI Copilot, preventing developers from easily leveraging AI when building applications.</p>

Multi-Step APIs: Developers can build APIs that run multiple steps, minimizing overhead and making program logic easier to understand and debug.	Limited Custom Component Offering: UI Bakery Custom Components are written in a single HTML file and constrained to an iframe, resulting in limited functionality and poor developer experience.
Python Support: UI Bakery supports Python which runs on the server-side, providing greater flexibility to developers.	Company Size: UI Bakery currently has ~10 employees on LinkedIn and no publicly available funding information.
	No US-Based Support: UI Bakery's team is based in Lithuania and does not have US-based support, which is often critical to US-based enterprises.

Conclusion: UI Bakery is suitable for smaller businesses looking for a lower-cost internal tooling platform, with workflow and scheduled job offerings available to both cloud and on-premise customers. UI Bakery's lack of deployment control, SCIM support, and US-based support call UI Bakery's suitability for the enterprise into question; however, UI Bakery does offer some of the same core capabilities as other platforms, and thus may be sufficient for less complex use cases, at a lower price tag.

DronaHQ

DronaHQ is another India-based player in the internal tooling space, offering a narrower feature set than other players at a lower price point. DronaHQ provides an application builder with a wide variety of built-in components, as well as a workflow and scheduled job builder. DronaHQ's pricing model does not distinguish between developers and end-users, charging a flat rate for all users.





















































Strengths	Weaknesses
<p>Low Price Per Developer: DronaHQ is cheaper than alternatives on a per-developer basis since their pricing is a flat fee per user and does not distinguish between developers and end-users.</p>	<p>Limited Extensibility with Code: DronaHQ lacks language support beyond JavaScript in applications, and offers no support for custom components, posing potential roadblocks for developers.</p>
<p>Workflows & Scheduled Jobs: DronaHQ offers support for automated workflows & scheduled jobs.</p>	<p>Less Intuitive UX: DronaHQ is more difficult to use than Retool, with a less organized properties panel and unintuitively named settings.</p>
<p>Vast Component Library: DronaHQ boasts over 150 built-in components, with many long-tail components supported out of the box.</p>	<p>Limited Deployment Control and Previews: DronaHQ does not offer deployment control with commits and previews. Previewing changes in DronaHQ requires publishing to a dedicated environment.</p>

Native Mobile Apps: DronaHQs provides a dedicated offering for building native mobile apps.	No SCIM: DronaHQ does not support the SCIM standard for managing users and groups via an external user directory.
	Inflexible Per User Pricing: DronaHQ's flat rate per user does not distinguish between developers and viewers of tools, resulting in a higher bill for organizations with many viewers of internal tools.






Conclusion: DronaHQ is another internal tooling platform that provides an application builder as well as support for automated workflows and scheduled jobs. DronaHQ has some notable feature gaps compared to competitors and is generally less user-friendly. DronaHQ's pricing model does not distinguish between developers and end-users; however, their per-user cost is relatively low, so for organizations with more developers than end-users, DronaHQ may be a cost-effective option.

Feature breakdown by low-code vendor

	 Superblocks	 Retool	 Appsmith	 UI Bakery	 DronaHQ
Pricing					
Pricing					
Pricing Model	Per Creator, User, Light User	Per Creator, User	Per Hour Per User	Flat Monthly Rate	Per User
No Self-Hosted Fees					
Application Builder					
Drag & Drop App Builder					
Integrate with any Database or API					
Multi-Step Application APIs					
Control Flow in App APIs					
Build Streaming Applications					
Native Mobile Apps					
Open Source Execution Engine					

	 Superblocks	 Retool	 Appsmith	 UI Bakery	 DronaHQ
Workflows & Scheduled Jobs					
Build API Endpoints with Workflows	✓	✗	✗	✗	✗
Build Webhooks with Workflows	✓	✓	✗	Limited	✓
Execute Scheduled Jobs	✓	✓	✗	Limited	✓
Build Control Flow Visually	✓	✓	✗	✓	✗
Extensibility with Code					
Write Front-End JS	✓	✓	✓	✓	✓
Write Back-End Code with NodeJS	✓	Workflows Only	✗	Workflows Only	Workflows Only
Write Back-End Python	✓	Workflows Only	✗	✓	✗
Build Fully-Featured Custom Components with React	✓	✗	✗	✗	✗
Build Custom Integrations	✓	✗	✓	✗	✗
Performance					
Fast Query Performance on Large Datasets	✓	✗	✗	Limited	✗
Global Edge Caching Network	✓	✗	✗	✗	✗
Generative AI					
Copilot for Code	JavaScript, Python, SQL, JSON, HTML	JavaScript, SQL	✗	✗	SQL
Copilot for 3rd Party API Calls	✓	✓	✗	✗	✗
Generate Mock Data with AI	✓	✗	✗	✗	✗
OpenAI Integration	✓	✓	✗	✓	✓

	 Superblocks	 Retool	 Appsmith	 UI Bakery	 DronaHQ
Enterprise Security					
Granular Permissions (RBAC)	✓	✓	✓	✓	✓
SSO / SAML	✓	✓	✓	✓	✓
SCIM	✓	✓	✗	✗	✗
Audit Logs	✓	✓	✓	✓	✓
Security Extensions	✓	✗	✓	✗	✗
Security Auditability	✓	✗	✓	✗	✗
Software Development Lifecycle					
Commits & Previews	✓	✓	✗	✗	✗
Integrate with Multiple VPCs through a Single Deployment	✓	✗	✗	✗	✗
Source Control with Git for Both Cloud & Self-Hosted	✓	✓	✓	✗	✗
Production Observability	✓	✗	✗	✗	✗
Hosting					
Keep Data in Customer's Network	✓	✓	✓	✓	✓
US & EU Cloud Hosting	US & EU Hosting Regions	US & EU Hosting Regions	US-only	Not disclosed	Not disclosed
Self-Hosted Deployment Effort	Negligible (Lightweight Stateless Agent)	High (Legacy On-Premise)	High (Legacy On-Premise)	High (Legacy On-Premise)	High (Legacy On-Premise)
Platform Upgrade Effort	Negligible (New App Builder features available instantly from Cloud)	High (Full upgrades with downtime required to access new features, critical security and bug fixes)	High (Full upgrades with downtime required to access new features, critical security and bug fixes)	High (Full upgrades with downtime required to access new features, critical security and bug fixes)	High (Full upgrades with downtime required to access new features, critical security and bug fixes)

	 Superblocks	 Retool	 Appsmith	 UI Bakery	 DronaHQ
Enterprise Support					
In-App Live Chat with Technical Support Engineer	✓	✗	✗	✗	✗
Extended Support Hours	✓	✗	✗	✗	✗
Recognized by G2 for Best Support	✓	✗	✗	✗	✗

Choosing the right internal tooling platform

Choosing the right internal tooling platform is pivotal for any business. It can either accelerate operations, reducing development time drastically, or result in significant challenges for both developers and end-users.

We've delved into the capabilities of Superblocks, Retool, Appsmith, UI Bakery, DronaHQ, and Internal in this piece - each has its merits and drawbacks. As you decide, it's important to consider factors such as usability, flexibility, extensibility, performance, security, AI capabilities, deployment options, and cost. The right platform will naturally align with your business requirements and objectives.



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