Gramener
Insights as Stories

AIMING HIGH WITH LOW-CODE

Building Data Applications Using Low-code Platform

What is Low-code?

It's common knowledge that the process of app or software development takes weeks or months, but how can you compress this to days and **go to market up to five times faster** with a more robust, error-free solution? Enter low-code platforms. Low-code platforms will power more than 65% of application development by 2024, according to Gartner.

A low-code platform offers a visual approach to application development. It uses simple drag-and-drop features with bare minimum coding requirements to build enterprise-ready applications rapidly and cost-effectively.

What is a low-code Application Platform (LCAP)?

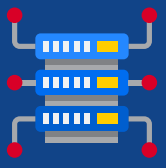
A low-code application platform is an intuitive development environment consisting of three key components-

Visual Integrated Development Environment (Visual IDE)

- Helps a user build the user interface, application data, and workflow.
- Uses a visual 'drag and drop' approach to build customized applications.

Connectors

For storage, retrieval, and data structure.



Application Lifecycle Management (ALM) Tool

To develop, debug, deploy and maintain the application throughout its lifecycle of staging, testing, and production.

Current trends on low-code adoption

The last decade has seen an unprecedented acceleration in **digital transformation.** A low-code Application Platform (LCAP) is a popular option for many organizations to enable their digital transformation journey. In fact, by the year 2021, Gartner expects low-code to continue growing as a tech movement and reach $5.8 billion in annual revenue.

With an expected annual growth of 28%, platforms like low-code are helping organizations embrace digital as a way of life, implement **process automation,** and improve their **operational efficiency**. There is a growing demand for **hyper-automation** that achieves seamless automation across business workflows and applications.

The COVID-19 pandemic has fueled **remote development** and further increased the demand for low-code platforms. Organizations will have to embrace low-code tools to support their need for application integration, innovation, and digital transformation.

Benefits of Low-code Adoption

Powers innovation

With the power to create your best-fit app in your hands, it lets your staff run their creative juices and develop innovative solutions to everyday business challenges.

Allows rapid development

Low-code platforms do not require traditional hand-coding, significantly reducing the turnaround time for software development.

Scalable

With dynamic business needs and an ever-increasing number of app users, developing scalable enterprise-grade software applications has become a necessity. Low-code platforms can handle the variable workloads and support multiple users.

Short learning curve

Because low-code platforms take the visual route, they do not require deep coding knowledge and have a short learning curve. Hence, even your existing IT staff can learn web development, allowing you to get started quickly.

Bumps up productivity

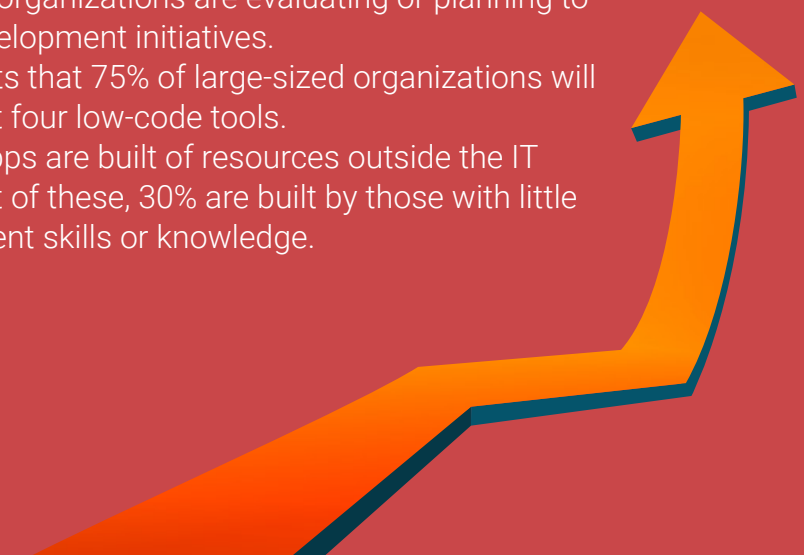
Low-code technology is focused on automation with its highly functional framework, 'drag-and-drop' features, and visual programming instead of hand-coding. It can cut down development time by 50% to 90% leaving teams to focus on other complex tasks.

Lowers costs

With low-code technology, you can rapidly build new applications while leveraging existing applications and processes. Because it does not require extensive hand-coding, enterprises do not need to hire coding experts to build applications. Its visual interface also boosts the agility of applications, making them more efficient. All of this increases productivity while reducing costs.

Some Statistics Favoring the Rise of Low-code

- A Gartner research indicates roughly half of the surveyed organizations carry out citizen development initiatives.
- Another 17% of organizations are evaluating or planning to start citizen development initiatives.
- Gartner forecasts that 75% of large-sized organizations will be using at least four low-code tools.
- About 60% of apps are built of resources outside the IT department. Out of these, 30% are built by those with little to no development skills or knowledge.



Low-code Is Gaining Traction In The Age Of Citizen Development

Gartner describes citizen developers as users who create applications for the consumption of other users, using IT-approved development environments and cloud computing services.

Citizen development is getting increasingly common among enterprises as it empowers the employees closest to the work scenario with an ability to develop imaginative solutions securely and rapidly. Also, the remote working environment during the COVID-19 pandemic necessitates the adoption of citizen development and, therefore, low-code tools.

Low-code platforms enable both professional and citizen developers achieve business goals by creating business applications using simple, pre-written templates without extensive training.

Low-code is Ideal for Building Data Applications

Copious amounts of big data streaming in from various sources have led to the need for applications that turn data into useful insights. Data is critical to any downstream activity and data applications focus on the effective utilization of data that leads to business success.

A good low-code Platform will have the flexibility and capability to create data applications that accelerate data-driven business actions.

What is a data application?

A data application is different from any generic BI or AI tool as it serves intuitively and dynamically, but without compromising on the human touch. This makes it perfect to aid managers in their critical business activities.

A data application allows users to finely comb through data and generate precious insights they can leverage. It can handle large volumes of business data with ease. It facilitates data exploration and enables proactive intervention to get better business outcomes.

A data application supports both short-term and long-term decision-making without compromising on precision. It utilizes machine learning algorithms to discover business insights. Its data-driven capabilities allow it to run simulations of a business process to find the exact reason behind any defect or delay.
Data applications can be used to analyze business activities across various processes like -

01 **Marketing and advertising campaigns**

02 **Supply Chain and Logistics**

03 **Network or application performance**

04 **Predictive maintenance for IoT devices**

05 **Fraud detection**

06 **Big data analytics**

Examples of Building Data Apps with Low-code

There are several common use cases spanning a variety of industries and verticals -

Industry/business vertical

Manufacturing

Use Case

Building a digital twin to enhance operational efficiency

Customer service

Use Case

A real-time data solution for process workflow optimization

Marketing

Use Case

Sentiment analysis and CX analytics

Financial services

Use Case

Data visualization and analytics

Government and-non-profit organizations

Use Case

Spatial analytics to optimize human efforts, eradicate diseases, conserve wildlife, analyze climate changes, etc.

Cross industry

Use Case

Smart contracts solution to analyze legal, financial, IP documents, and more.

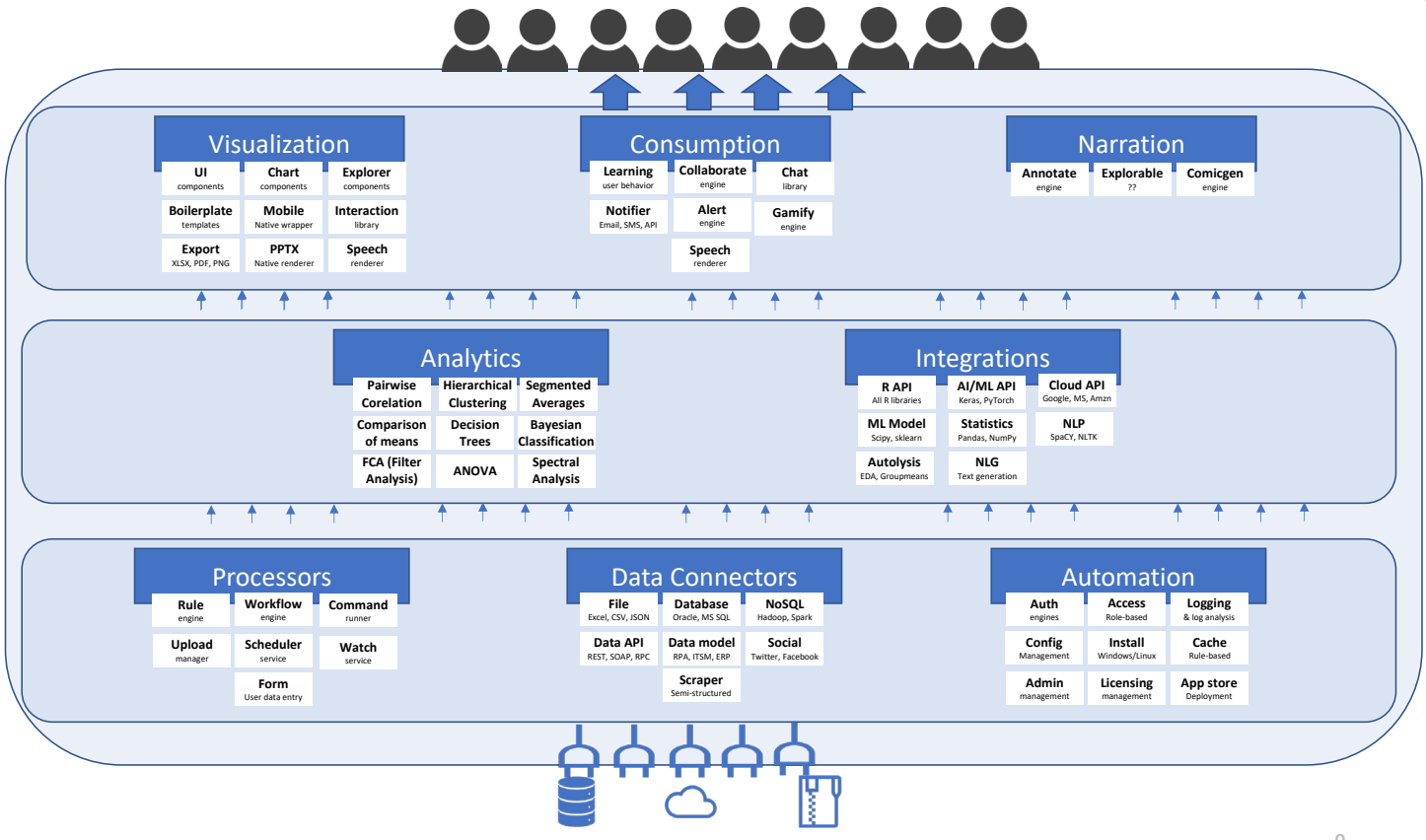
Gramex - The Perfect Low-code Platform for Data Applications

Gramener's low-code platform, Gramex, is designed with a data-focus approach. It is perfect for building agile, engaging, and reliable data apps for different industries. For instance, you can use it to extract insightful stories from your data and create interactive dashboards, develop geospatial apps, or monitor your operations.

What makes Gramex ideal for data app development?

Built to design engaging enterprise-grade data applications, Gramex is a PaaS data platform that helps you rapidly develop an application in a day!

Gramex builds data apps by assembling components. It has over 200 pre-built components (15 connectors, 25 processors, 40 visuals, 15 story templates, 40 models, and 70+ libraries) so that you do not have to create components from scratch.



Architecture Diagram

Gramex IDE sits on top of Gramex and provides a user-friendly interface to configure microservices and REST APIs to your data app with a single-click. This significantly cuts down on development time. For instance, it lets you expose any data or visuals as a REST API requiring zero code and just some basic configuration using the FormHandler microservice.

With Gramex, you can build production-ready data apps by picking what you need and using what you already have.

Gramex's Digital Twin for Pharma Manufacturing - The Process Monitor

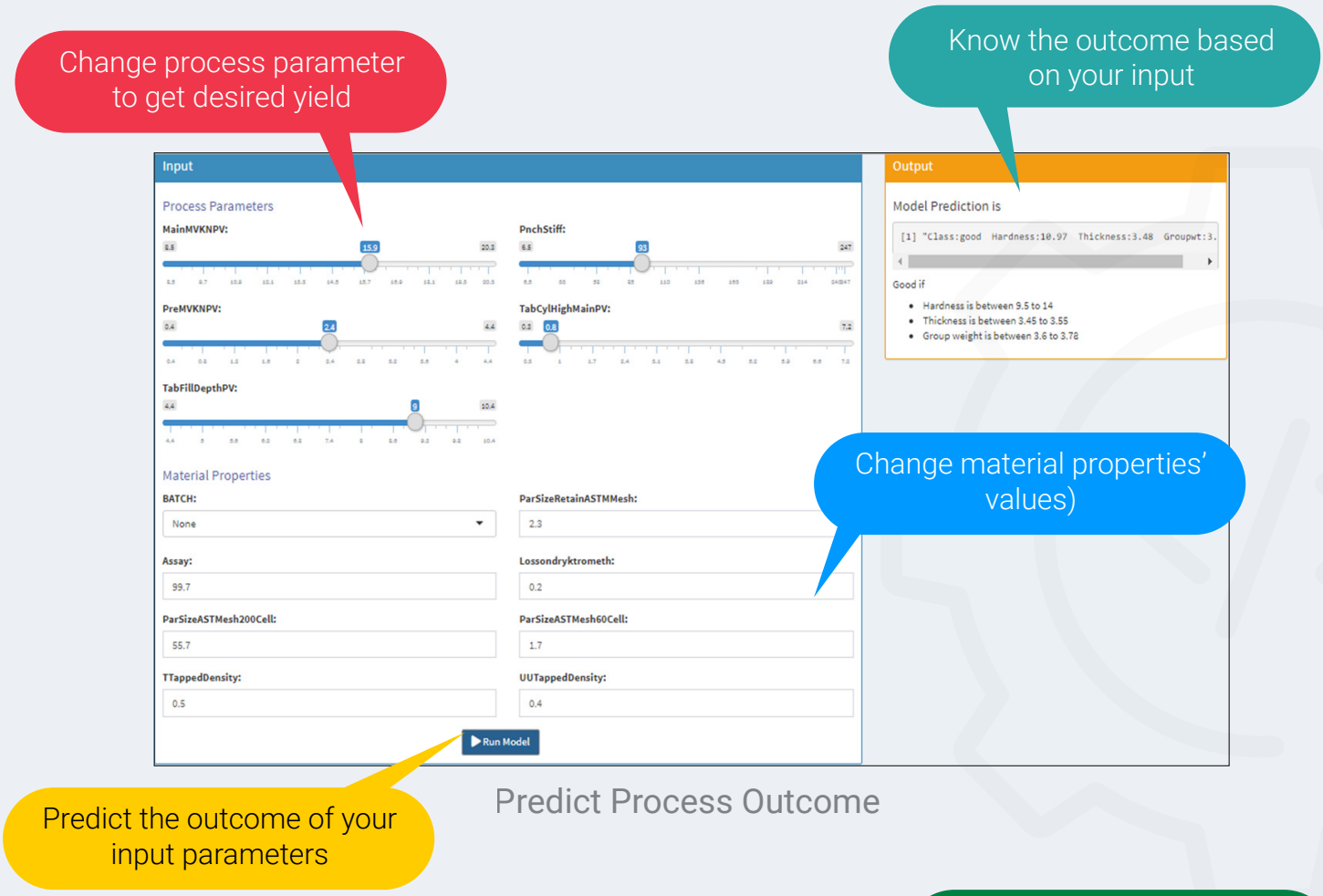
The Process Monitor helps clients set up a digital twin for their manufacturing process. It utilises real-time data of reaction temperature, stirring speed, crystallizer cooling rate, etc. to optimize the machine parameters and the yield quantity of the drug manufactured.

The process monitor allows the client better visibility on which parameters drive the product yield. Using the historical data, it can improve the yield quantity of the drug manufactured. The process monitor can help identify relevant operational and material parameters.

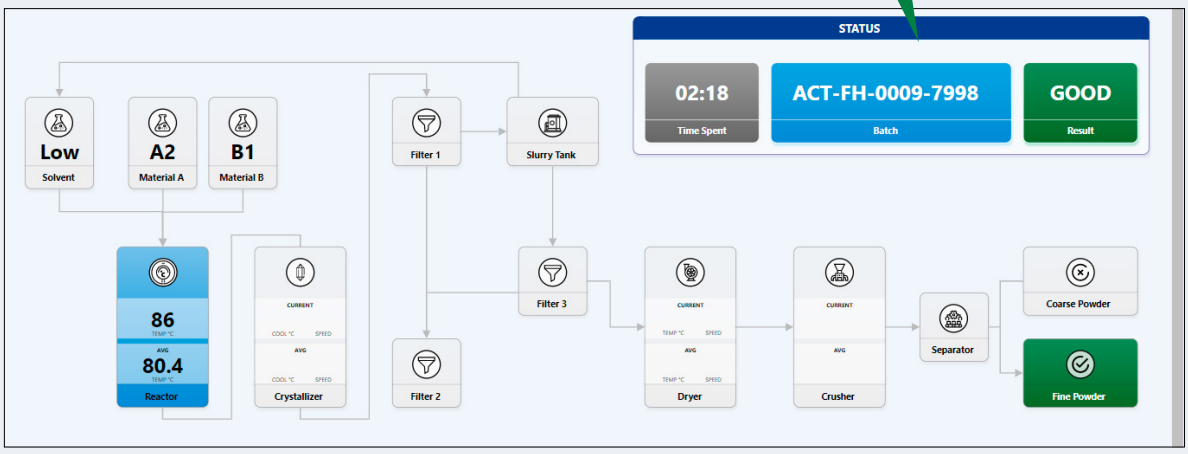
It helps to predict a bad batch and generate a mobile alert to the user who can increase the crushing cycle time to increase the fine particle ratio in the batch. This helps in reducing wastage. It also runs analytics for the past batches to re-run it with fixed parameters automatically. This minimizes the re-work and future costs related to monitoring.

Building the Process Monitor

Here is a visual of how the process monitor model is built to optimize the machine parameters and achieve golden batch yield -



Predict Process Outcome



Monitor the Process

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Want to build something like this?

Get on a call with our experts to understand how you can build data-driven applications to create business impact using Gramex.

BOOK A CALL