## Pega GenAl **\* Blueprint**™

APPLICATION OVERVIEW DOCUMENT

# **Intelligent Loan Approval System**

Congratulations on completing your application definition! This document presents a summary overview of your application as defined in the Pega platform. It encapsulates the key elements of your application's design, highlighting its core functionalities and overall structure.

Please note that this is a high-level view and does not include granular details like data models or sample data. It's an ideal resource for a quick reference, facilitating discussions among team members and stakeholders, and for guiding strategic decisions in your application development process.

Blueprint ID: BP-120308

## **Application Context**

Organization name Sri Sairam college of

engineering, Bengaluru

Industry Banking Industry subsegment

Other

Language English

Application purpose Intelligent Loan Approval System

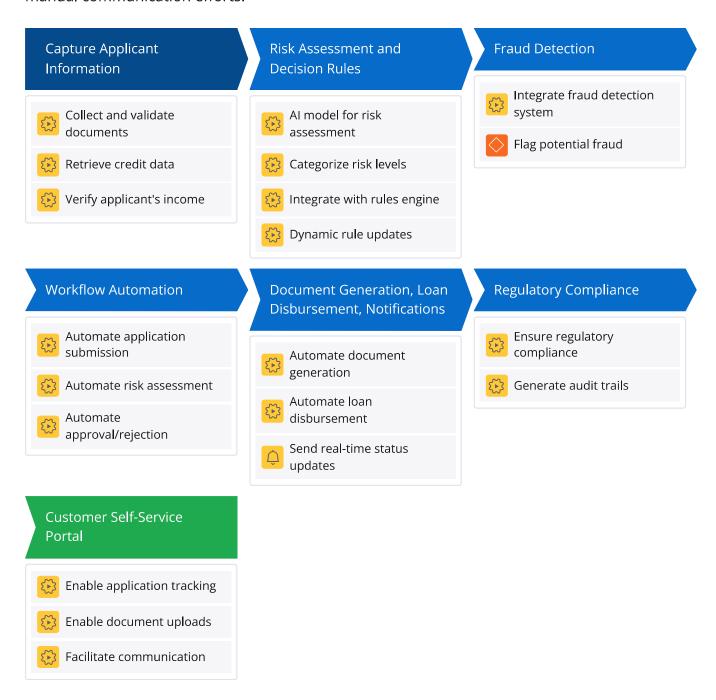
#### **Functional description**

Design an Intelligent Loan Approval System that automates the end-to-end loan application process, integrating advanced Al-driven risk assessment and dynamic decision-making. The system should streamline loan approvals, enhance accuracy, and improve customer experience while minimizing fraud and ensuring compliance with regulations. Key Requirements: Automated Application Processing Collect applicant details, validate documents, and pull data from external sources like credit bureaus via APIs. Al-Powered Risk Assessment Develop an AI model to assess an applicant's creditworthiness based on income, credit score, debt-to-income ratio, and loan amount. Categorize applicants into risk levels: Low, Medium, High. Dynamic Decision Rules Use a rules engine to handle diverse lending policies and update rules dynamically for different types of loans (e.g., personal, home, auto). Fraud Detection Mechanism Integrate an anomaly detection system to flag potential fraud for manual review. Workflow Automation Automate the following workflows: Application Submission Risk Assessment Approval/Rejection Document Generation Loan Disbursement Notifications & Communication Provide real-time status updates via SMS, email, and dashboards for both applicants and loan officers. Compliance Management Ensure adherence to KYC (Know Your Customer) and AML (Anti-Money Laundering) regulations. Generate audit trails for regulatory reporting. Customer Dashboard Allow applicants to track application status, upload documents, and communicate with loan officers through a self-service portal. Scalability & Integration Ensure the system integrates with: Credit Bureau APIs (e.g., Experian, Equifax) Banking APIs for disbursement Document Management Systems Technologies & Tools: Platform: Pega for case management and workflow automation. Al Models: Pythonbased machine learning for risk scoring and fraud detection. Database: PostgreSQL/MySQL for data storage. APIs: For credit scoring, identity verification, and banking transactions. Security: Encryption, authentication, and compliance with data protection standards (GDPR, PCI DSS). Goals: Faster Loan Approvals (reduce processing time by 70%). Enhanced Accuracy (reduce errors in risk assessment). Fraud Minimization (detect anomalies in real-time). Regulatory Compliance (automated checks and reporting).

## Workflows (Case Types)

#### **Customer Self-Service Portal**

Enables applicants to interact with loan officers, track application status, and upload required documents through a self-service portal, enhancing customer experience and reducing manual communication efforts.



Field Name	Description	Туре	Primary
Applicant Email	Applicant Email - The email address of the loan	Text	<b>✓</b>

Field Name	Description	Туре	Primary
Applicant Name	Applicant Name - The full name of the loan	Text	<b>✓</b>
Applicant	Applicant Phone Number - The contact number o	Text	<b>✓</b>
Case ID	Unique identifier for this individual case instance	Text	<b>✓</b>
Case Label	Label for this individual case instance	Text	<b>✓</b>
Urgency	Priority/urgency of the case	Decimal	<b>✓</b>
Work Status	Work status of the case	Text	<b>✓</b>
Applicant	Applicant Address - The residential address of th	Text	
Application	Status - The current status of the loan application	Text	
Created by	User that created the case	Text	
Created	Date/time case was created	DateTime	
Decision	Decision Outcome - The outcome of the loan	Text	
Description	Description for this individual case instance	Text	
Document ID	Document ID - Unique identifier for the submitte	Text	
Loan Amount	Loan Amount - The requested or approved loan	Currency	
Resolved by	User that resolved the case	Text	
Resolved	Date/time case was resolved	DateTime	
Risk Level	Risk Level - The categorization of the applicant's	Text	
Submission	Submission Date - The date and time when the	DateTime	

## **Regulatory Compliance Management**

Ensures adherence to KYC (Know Your Customer) and AML (Anti-Money Laundering) regulations, generating audit trails for regulatory reporting and minimizing compliance-related risks.

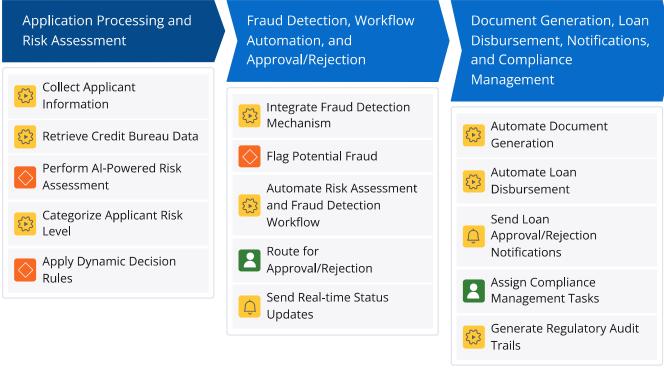


Field Name	Description	Туре	Primary
Applicant Address	Applicant Address: The residential address	Text	<b>~</b>
Applicant Name	Applicant Name: The full name of the loan	Text	<b>~</b>
Case ID	Unique identifier for this individual case	Text	<b>~</b>
Case Label	Label for this individual case instance	Text	~
Urgency	Priority/urgency of the case	Decimal	<b>~</b>
Work Status	Work status of the case	Text	~
Applicant Email	Applicant Email: The email address of the	Text	
Applicant Phone	Applicant Phone Number: The contact	Phone	
Application Status	Application Status: The current status of th	Text	

Field Name	Description	Туре	Primary
Application	Application Submission Date: The date whe	DateTime	
Approval/Rejection	Approval/Rejection Date: The date when th	DateTime	
Created by	User that created the case	Text	
Created date/time	Date/time case was created	DateTime	
Description	Description for this individual case instance	Text	
Loan Amount	Loan Amount: The requested amount for th	Currency	
Loan Type	Loan Type: The category of the loan such as	Text	
Resolved by	User that resolved the case	Text	
Resolved date/time	Date/time case was resolved	DateTime	
Risk Level	Risk Level: The categorization of the	Text	

## **Notification & Status Updates**

Provides real-time status updates via SMS, email, and dashboards for both applicants and loan officers, enhancing transparency and communication throughout the loan application process.



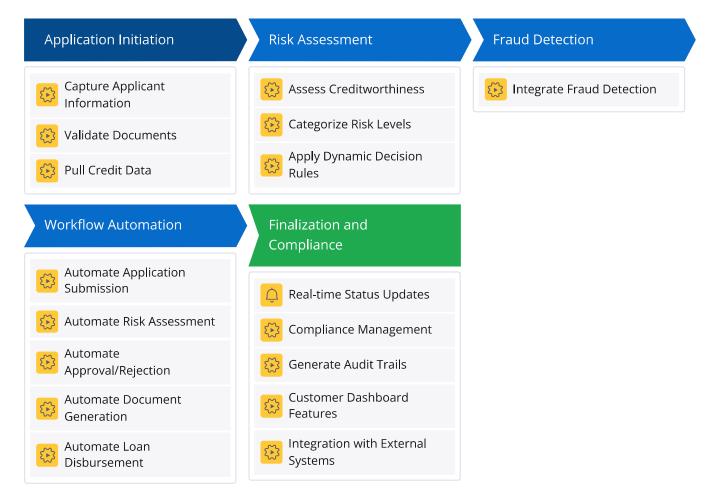


Field Name	Description	Туре	Primary
Applicant Email	Email address of the loan applicant	Text	~
Applicant Name	Full name of the loan applicant	Text	<b>~</b>

Field Name	Description	Туре	Primary
Applicant Phone	Phone number of the loan applicant	Text	<b>✓</b>
Application	Current status of the loan application (e.g.,	Text	<b>✓</b>
Case ID	Unique identifier for this individual case instance	Text	<b>✓</b>
Case Label	Label for this individual case instance	Text	<b>✓</b>
Loan	Unique Identifier for the Loan Application	Text	<b>✓</b>
Urgency	Priority/urgency of the case	Decimal	<b>✓</b>
Work Status	Work status of the case	Text	<b>✓</b>
Created by	User that created the case	Text	
Created	Date/time case was created	DateTime	
Description	Description for this individual case instance	Text	
Last Status	Date and time when the loan application status	DateTime	
Notification	Real-time status update notification preference	Text	
Rejection	Reason for rejection if the loan application is	Text	
Resolved by	User that resolved the case	Text	
Resolved	Date/time case was resolved	DateTime	
Risk Level	Current risk level of the loan application (e.g., Lo	Text	
Submission	Date and time when the loan application was	DateTime	

## **Loan Application Processing**

Loan Application Processing: This case type encompasses the end-to-end processing of loan applications, including the collection of applicant details, validation of documents, and retrieval of external data from credit bureaus via APIs. The workflow ensures that all necessary information is gathered and verified to initiate the loan approval process.

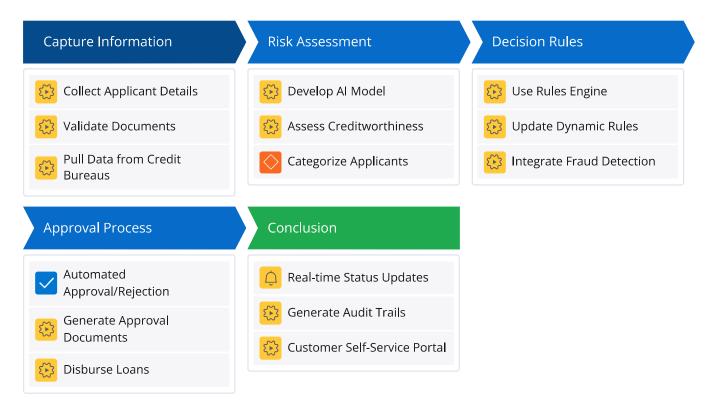


Field Name	Description	Туре	Primary
	Applicant Name: The full name of the individual or	Text	<b>✓</b>
	Applicant Email: The email address of the loan	Text	<b>✓</b>
	Applicant Phone Number: The contact number of	Text	<b>✓</b>
	Loan Amount: The requested amount of the loan	Text	<b>✓</b>
	Loan Purpose: The intended purpose of the loan,	Text	<b>✓</b>
Case ID	Unique identifier for this individual case instance	Text	<b>✓</b>
Case Label	Label for this individual case instance	Text	<b>✓</b>

Field Name	Description	Туре	Primary
Urgency	Priority/urgency of the case	Decimal	<b>✓</b>
Work Status	Work status of the case	Text	<b>✓</b>
	Applicant Address: The residential or business	Text	
	Employment Details: Information regarding the	Text	
	Document ID: A unique identifier for the submitted	Text	
	Credit Score: The credit score of the applicant	Text	
	KYC Documents: Documents required for Know Yo	Text	
Created by	User that created the case	Text	
Created	Date/time case was created	DateTime	
Description	Description for this individual case instance	Text	
Resolved by	User that resolved the case	Text	
Resolved	Date/time case was resolved	DateTime	

## **Risk Assessment & Categorization**

Risk Assessment & Categorization: This case type involves the Al-powered assessment of applicant creditworthiness based on income, credit score, debt-to-income ratio, and loan amount. Applicants are categorized into risk levels (Low, Medium, High) based on the assessment outcomes, allowing for tailored decision-making processes and policies for different risk categories.



Field Name	Description	Туре	Primary
Applicant	Applicant Address - The residential address of t	Text	<b>✓</b>
Applicant Email	Applicant Email - The email address of the loan	Text	<b>✓</b>
Applicant Name	Applicant Name - The full name of the loan	Text	<b>✓</b>
Applicant Phon	Applicant Phone Number - The contact number	Text	<b>✓</b>
Application	Application Submission Date - The date and tim	DateTime	<b>✓</b>
Case ID	Unique identifier for this individual case instance	Text	<b>✓</b>
Case Label	Label for this individual case instance	Text	<b>✓</b>
Loan Amount	Loan Amount - The amount of money the	Currency	<b>✓</b>
Urgency	Priority/urgency of the case	Decimal	<b>✓</b>

Field Name	Description	Туре	Primary
Work Status	Work status of the case	Text	<b>✓</b>
Created by	User that created the case	Text	
Created	Date/time case was created	DateTime	
Credit Score	Credit Score - The credit score of the loan	Text	
Debt-to-Income	Debt-to-Income Ratio - The ratio of the	Decimal	
Decision	Decision Outcome - The final decision on the lo	Text	
Description	Description for this individual case instance	Text	
Resolved by	User that resolved the case	Text	
Resolved	Date/time case was resolved	DateTime	
Risk Level	Risk Level - The categorization of the applicant's	Text	

## **Dynamic Decision Rules Management**

Dynamic Decision Rules Management: This case type focuses on the management of dynamic decision rules, enabling the system to handle diverse lending policies and update rules dynamically for different types of loans such as personal, home, or auto loans. It ensures that the decision-making process aligns with the latest regulations and business policies.

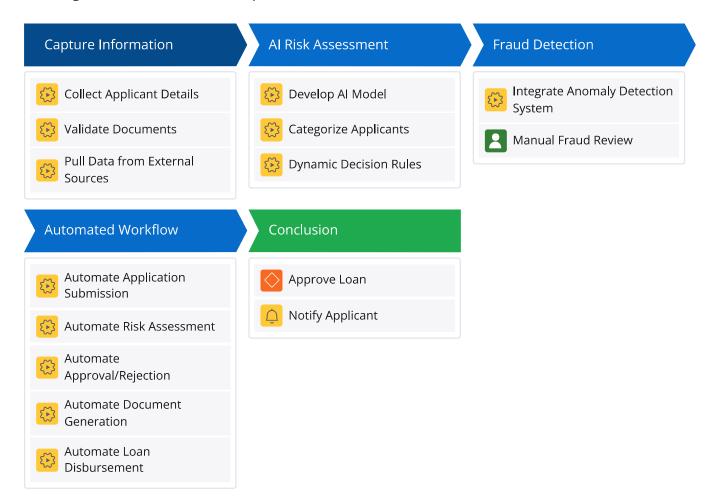


Field Name	Description	Туре	Primary
Applicant Email	Applicant Email: The email address of the	Text	<b>~</b>
Applicant Name	Applicant Name: The full name of the loan	Text	<b>✓</b>
Applicant Phone	Applicant Phone: The contact number of th	Text	<b>~</b>
Application	Application Submission Date: The date and	DateTime	<b>✓</b>
Case ID	Unique identifier for this individual case	Text	<b>✓</b>
Case Label	Label for this individual case instance	Text	<b>✓</b>
Loan Amount	Loan Amount: The requested amount of the	Text	<b>✓</b>
Urgency	Priority/urgency of the case	Decimal	<b>~</b>
Work Status	Work status of the case	Text	<b>✓</b>

Field Name	Description	Туре	Primary
Approval/Rejection	Approval/Rejection Date: The date and time	DateTime	
Created by	User that created the case	Text	
Created date/time	Date/time case was created	DateTime	
Credit Score	Credit Score: The applicant's credit score	Text	
Debt-to-Income	Debt-to-Income Ratio: The ratio of the	Text	
Description	Description for this individual case instance	Text	
Income	Income: The monthly income of the loan	Text	
Resolved by	User that resolved the case	Text	
Resolved date/time	Date/time case was resolved	DateTime	
Risk Level	Risk Level: The categorized risk level of the	Text	

#### **Fraud Detection & Review**

Fraud Detection & Review: This case type involves the integration of an anomaly detection system to flag potential fraud for manual review. It ensures that the system can identify suspicious activities or discrepancies in application data, triggering manual intervention for thorough fraud assessment and prevention.



Field Name	Description	Туре	Primary
	Applicant Name: The full name of the loan applica	Text	<b>✓</b>
	Applicant ID: Unique identifier for the loan	Text	<b>✓</b>
	Application Submission Date: The date when the	Text	<b>✓</b>
Case ID	Unique identifier for this individual case instance	Text	<b>✓</b>
Case Label	Label for this individual case instance	Text	<b>✓</b>
Urgency	Priority/urgency of the case	Decimal	<b>✓</b>
Work Status	Work status of the case	Text	<b>✓</b>

Field Name	Description	Туре	Primary
	Applicant Address: The current residential addres	Text	
	Credit Score: The credit score of the loan applicant	Text	
	Income Details: Details of the applicant's income,	Text	
	Loan Amount: The requested amount for the loan.	Text	
	Risk Level: The risk category assigned to the loan	Text	
	Fraud Flag: Indicates if potential fraud has been	Text	
	Decision Notes: Comments and notes related to t	Text	
Created by	User that created the case	Text	
Created	Date/time case was created	DateTime	
Description	Description for this individual case instance	Text	
Resolved by	User that resolved the case	Text	
Resolved	Date/time case was resolved	DateTime	

#### **Workflow Automation & Orchestration**

Workflow Automation & Orchestration: This case type focuses on the automation and orchestration of various workflows within the loan approval process, including application submission, risk assessment, approval/rejection, document generation, and loan disbursement. It streamlines the entire process to improve efficiency and reduce processing time.



Field Name	Description	Туре	Primary
	Applicant Name: The full name of the loan applican	Text	<b>✓</b>
	Applicant Email: The email address of the loan	Text	<b>✓</b>
	Loan Amount: The requested amount of the loan	Text	<b>✓</b>
	Application Submission Date: The date when the	Text	<b>✓</b>
	Risk Level: The risk category assigned to the loan	Text	<b>✓</b>
Case ID	Unique identifier for this individual case instance	Text	<b>✓</b>
Case Label	Label for this individual case instance	Text	<b>✓</b>
Urgency	Priority/urgency of the case	Decimal	<b>✓</b>
Work Status	Work status of the case	Text	<b>✓</b>
	KYC Documents: The type and status of Know Your	Text	
	Approval/Rejection Reason: The reason for approv	Text	
	Disbursement Date: The date on which the	Text	
	Fraud Flag: Indicates whether the application has	Text	
	Notification Status: Records the status of	Text	
Created by	User that created the case	Text	
Created	Date/time case was created	DateTime	
Description	Description for this individual case instance	Text	
Resolved by	User that resolved the case	Text	
Resolved	Date/time case was resolved	DateTime	

## **⊘** Data Objects & Integrations

## **Loan Application**

Represents Loan Application Data Object to capture applicant details, documents, and external data retrieved from credit bureaus via APIs. It connects to the Credit Bureau APIs for real-time data synchronization.

#### **Risk Assessment**

Represents Risk Assessment Data Object for Al-driven creditworthiness evaluation based on income, credit score, debt-to-income ratio, and loan amount. It integrates with Python-based machine learning models for dynamic risk categorization (Low, Medium, High).

#### **Decision Rules**

Represents Decision Rules Data Object for handling diverse lending policies and dynamically updating rules for different loan types (e.g., personal, home, auto). It connects to the Pega rules engine for rule management and execution.

#### **Fraud Detection**

Represents Fraud Detection Data Object for anomaly detection and flagging potential fraud cases for manual review. It integrates with anomaly detection systems and fraud databases for real-time monitoring.

#### **Workflow Automation**

Represents Workflow Data Object for automating the end-to-end loan application process including submission, risk assessment, approval/rejection, document generation, and loan disbursement. It connects to the Pega platform for workflow automation.

## **Communication Management**

Represents Communication Data Object for real-time status updates, notifications, and communication via SMS, email, and dashboards for applicants and loan officers. It integrates with communication platforms for seamless messaging and updates.

## **Compliance Management**

Represents Compliance Data Object for managing KYC, AML regulations, and generating audit trails for regulatory reporting. It integrates with compliance management systems for automated compliance checks and reporting.

#### **Customer Portal**

Represents Customer Portal Data Object for enabling applicants to track application status, upload documents, and communicate with loan officers through a self-service portal. It connects to the customer portal for self-service functionalities.

### **Personas**

#### **Loan Officer**

The Loan Officer who reviews and approves loan applications, utilizes the Al-powered risk assessment, and communicates decisions to applicants.

### **Customer Service Representative**

The Customer Service Representative who assists applicants with the application process, provides support in document submission, and communicates application status updates to customers.

## **Applicant**

The Applicant who submits loan applications, tracks application status, uploads required documents, and communicates with loan officers through the self-service portal.

## **Compliance Officer**

The Compliance Officer who ensures adherence to KYC and AML regulations, generates audit trails for regulatory reporting, and monitors the system for compliance with data protection standards.

## **Fraud Analyst**

The Fraud Analyst who reviews flagged potential fraud cases, conducts manual review of suspicious applications, and provides feedback to enhance the fraud detection mechanism.

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