

The role of AI in Application Development

4-9-2024 – Previder Techfuse Event
Hans de Visser – Chief Product Officer Mendix



十六景 神奈川沖
波裏



Some big investment going on in AI...

- **83% of companies claim using AI in their business strategies is a top priority**
- By 2025, global AI investment is projected to reach **\$200 billion**
- Tech giants secured two-thirds of the **\$27 billion raised by emerging AI companies**. OpenAI tops other AI companies with a **\$14 billion investment**

Criminals betting on AI too...



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Finance worker pays out \$25 million after video call with deepfake 'chief financial officer'



By Heather Chen and [Kathleen Magramo](#), CNN

🕒 2 minute read · Published 2:31 AM EST, Sun February 4, 2024





Kunstmatige intelligentie beschuldigt onschuldige journalist van kindermisbruik



Joey Frankhuisen

Redacteur online

Een Duitse journalist is onterecht beticht van kindermisbruik door AI-chatbot Copilot. Hij gaat de strijd aan met AI-chatbots, maar het is onduidelijk wat burgers kunnen doen als kunstmatige intelligentie desinformatie over hen verspreidt.

Martin Bernklau uit de stad Tübingen werkte jarenlang als rechtbankverslaggever en deed verslag van honderden rechtszaken, waarvan de artikelen nog te vinden zijn op het internet.

How to navigate the storm?

Relate AI investments to your vision and mission & focus on value add for your customers.

**A world where ideas
become outcomes.** 

The pressure to deliver compelling software solutions continues to **accelerate**.

76%

of CIOs report increased demand for new digital products and services.

BUSINESS
DEMAND

IT GAP

IT
SUPPLY

Traditional software delivery methods **aren't keeping up.**

1/3

of software projects are delayed by more than 6 months


Low code
application
development
keeps gaining
momentum

APPLICATIONS BUILT ON LOW-CODE:

2021 25%

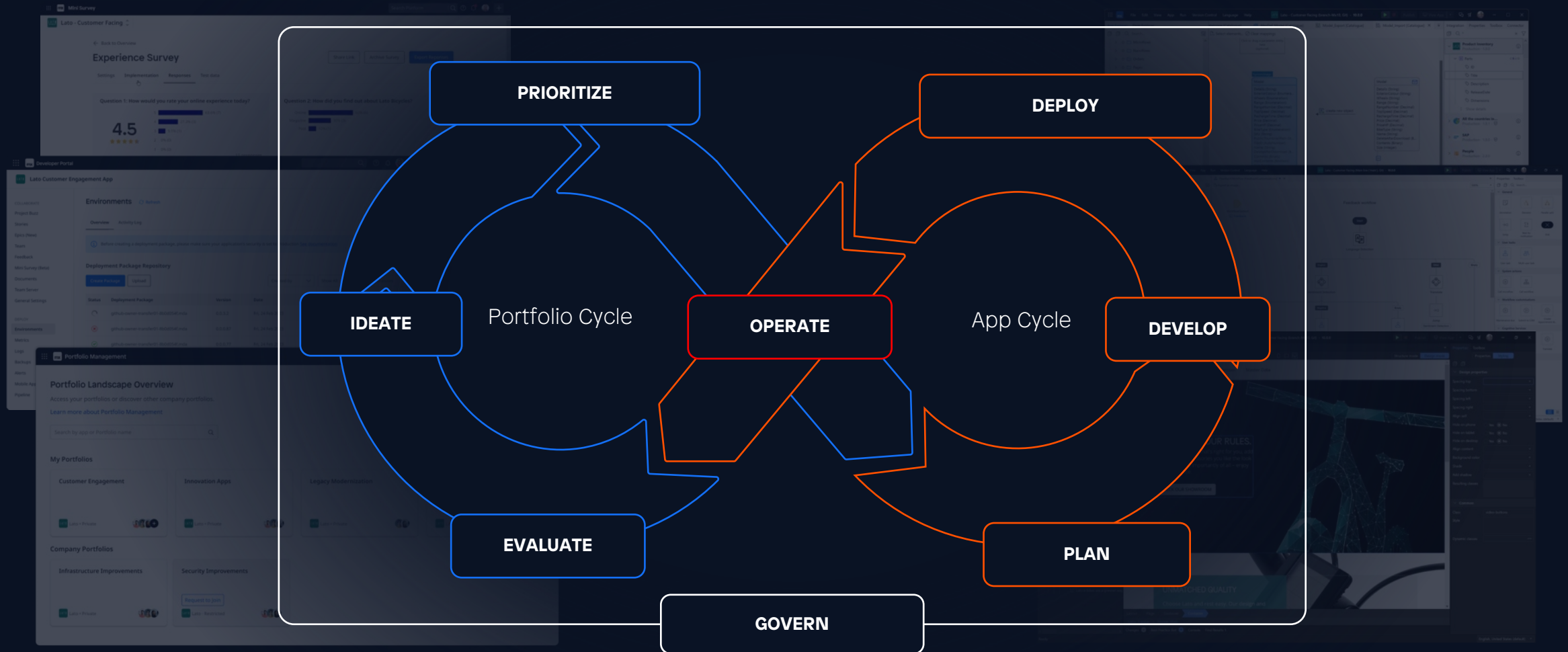


2026 75%

Our mission is to **mobilize**
organizations to make
better software, **faster**. 

A single platform to build better software faster

Collaboration throughout the entire SDLC



Mendix is THE low-code development platform for building digital solutions that make an impact

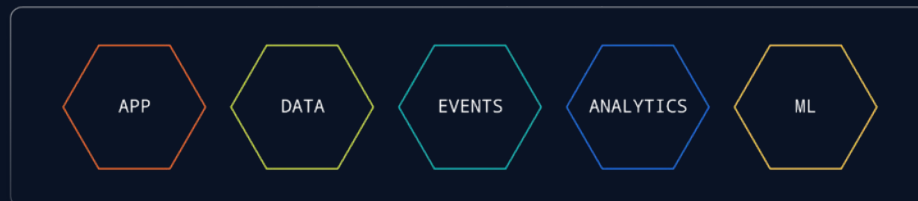
TAILORED EXPERIENCES
TARGETED USERS
SPECIFIC OUTCOMES



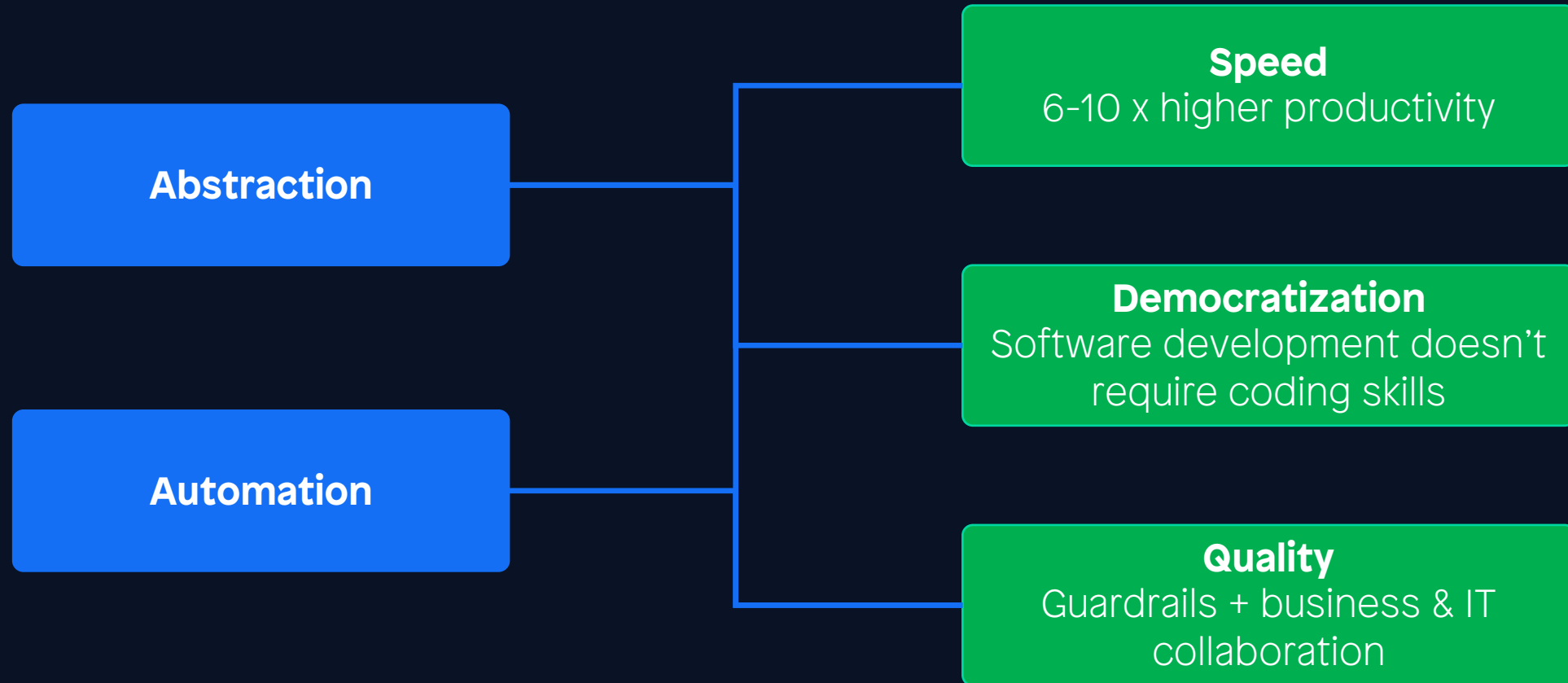
IDEATE
BUILD
OPERATE



BUILDING BLOCKS
DIFFERENT TYPES
CUSTOM & COTS



Key principles and benefits



So what's the role of AI at Mendix?

Further boost productivity by applying the same principles of abstraction & automation.

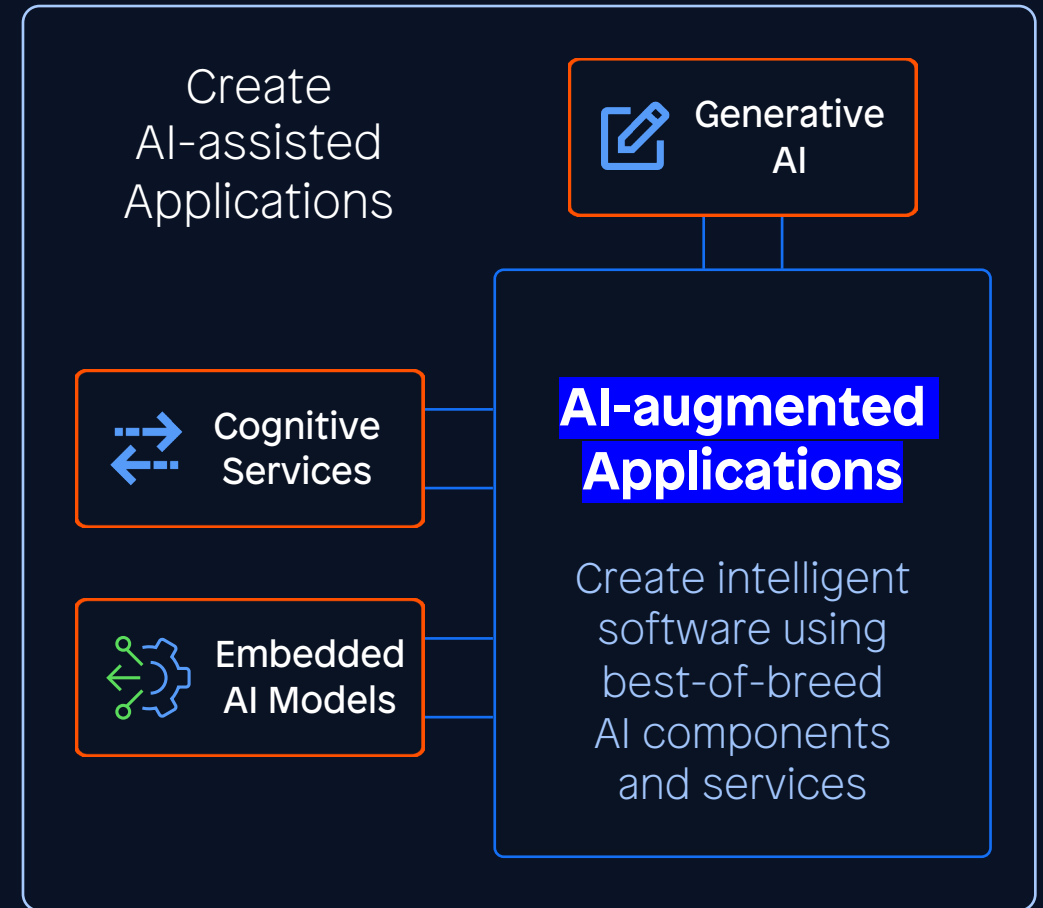
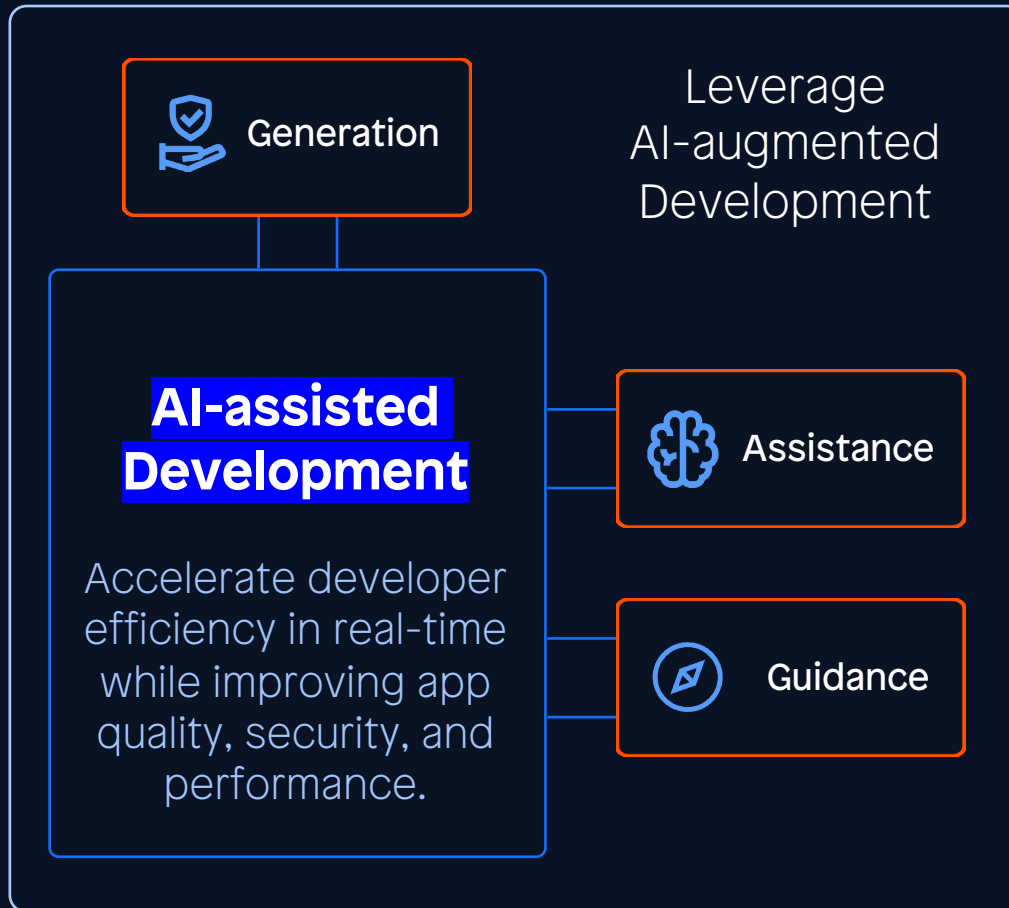


By 2027, 70% of professional developers will use AI-powered coding tools, up from less than 10% today.

Gartner®

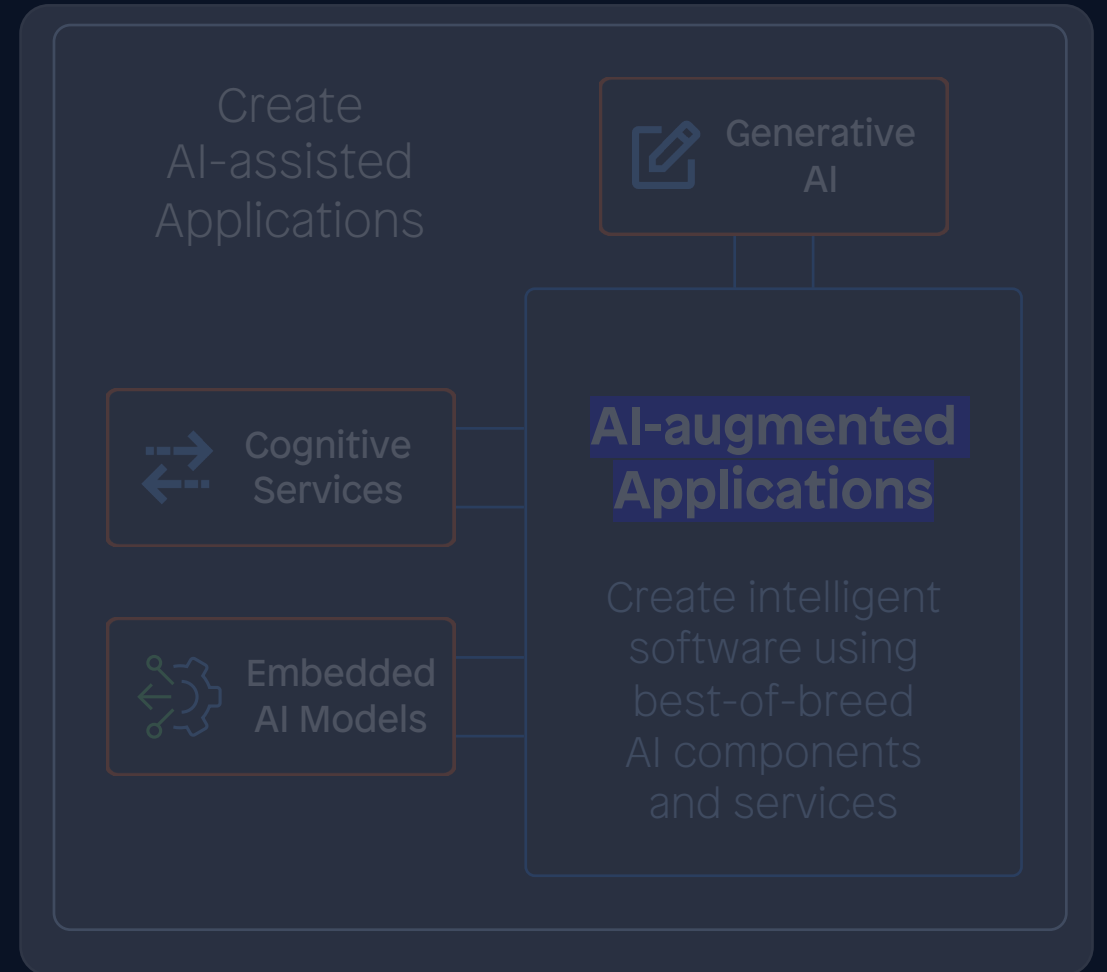
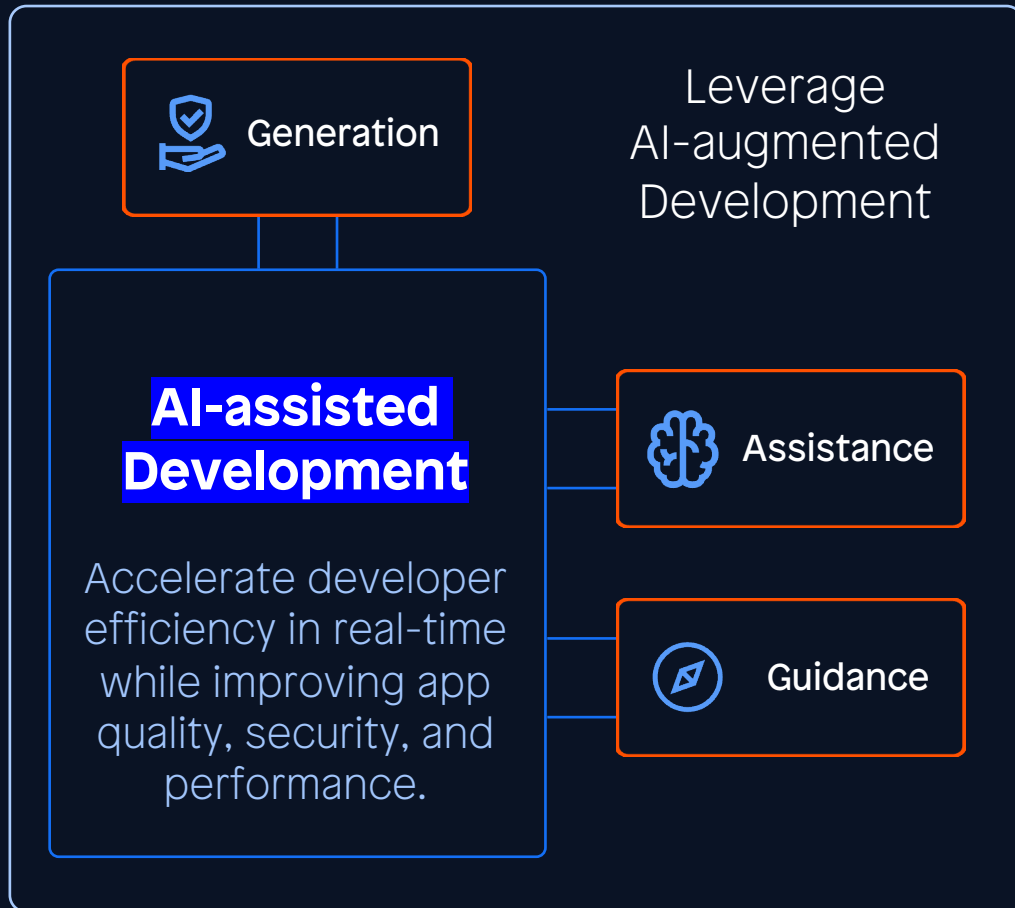
How Can Mendix Help?

Mendix is **the** low-code platform for harnessing the power of AI



Mendix AI Assisted Development

Mendix is **the** low-code platform for harnessing the power of AI

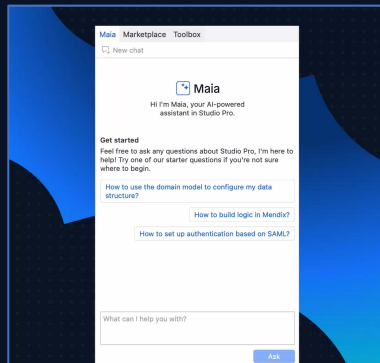


Mendix AI Assistance (Maia)



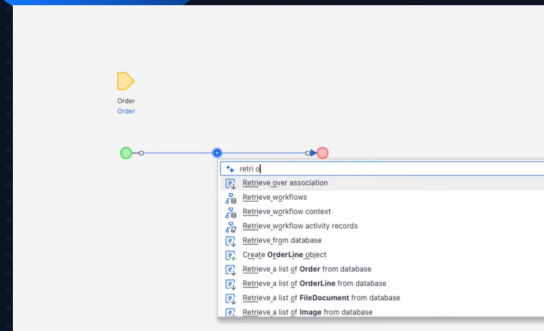
Levering **GenAI**, Mendix is delivering the **future of low-code** by **transforming the conversation** between developer and Mendix into something **more natural, intuitive and powerful**.

GUIDANCE



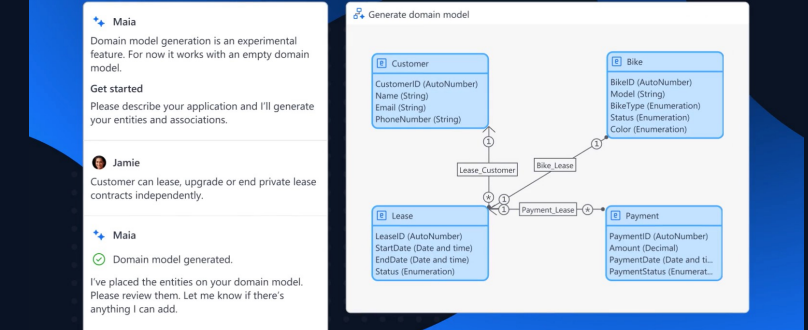
AI-powered chatbot provides developers with contextual advice and support.

ASSISTANCE



Real-time, context-driven recommendations assist with the creation of application logic, workflows and pages.

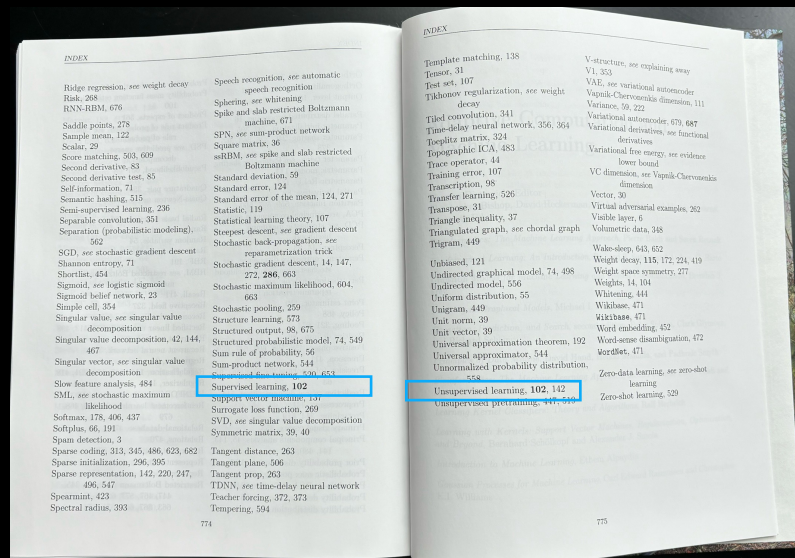
GENERATION



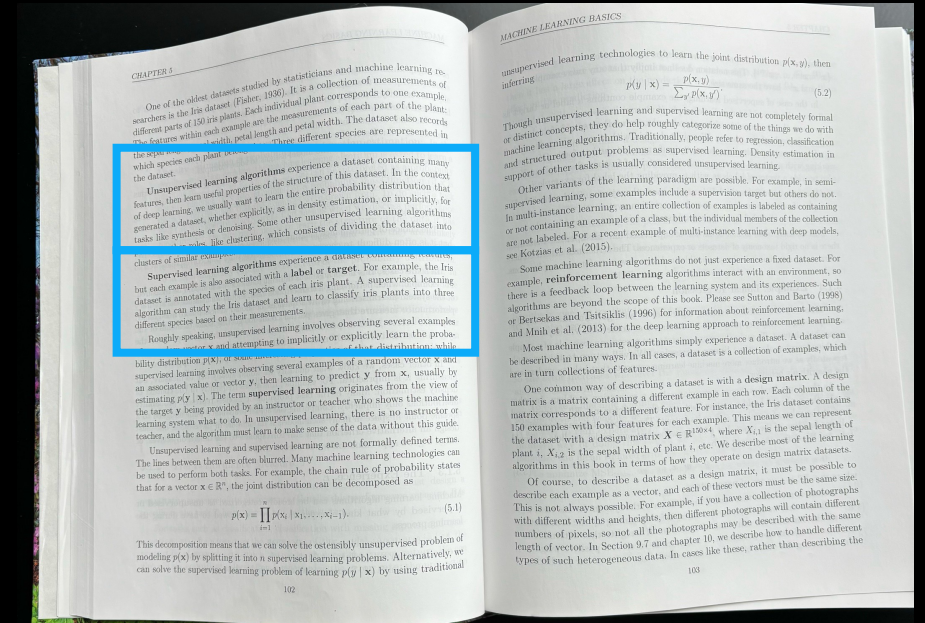
Automate tasks and generate app components to accelerate the development process and enhance consistency and quality.

Retrieval Augmented Generation in a nutshell:

What is the difference between supervised and unsupervised learning algorithms?

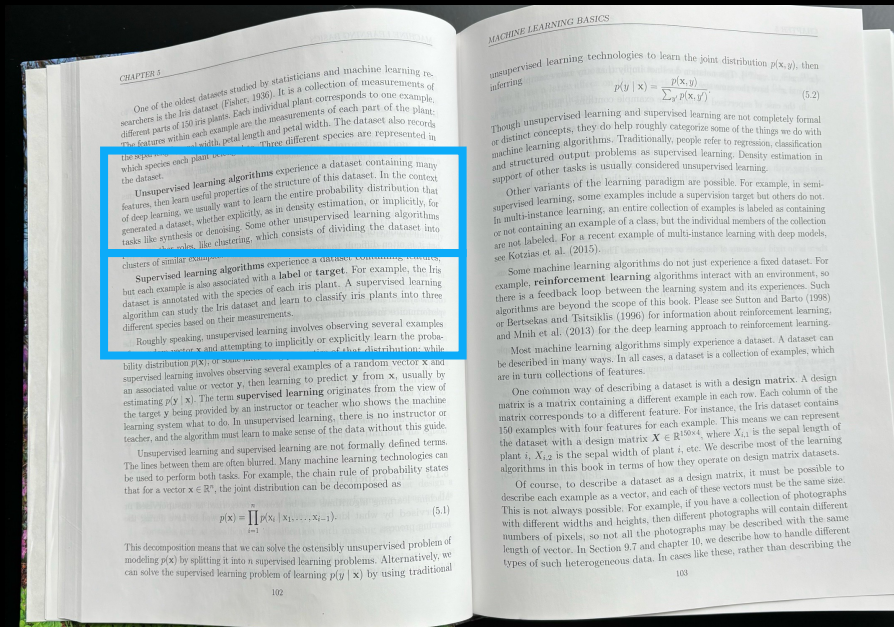


Search Agent
→
navigate to 2 chunks



RAG in a nutshell:

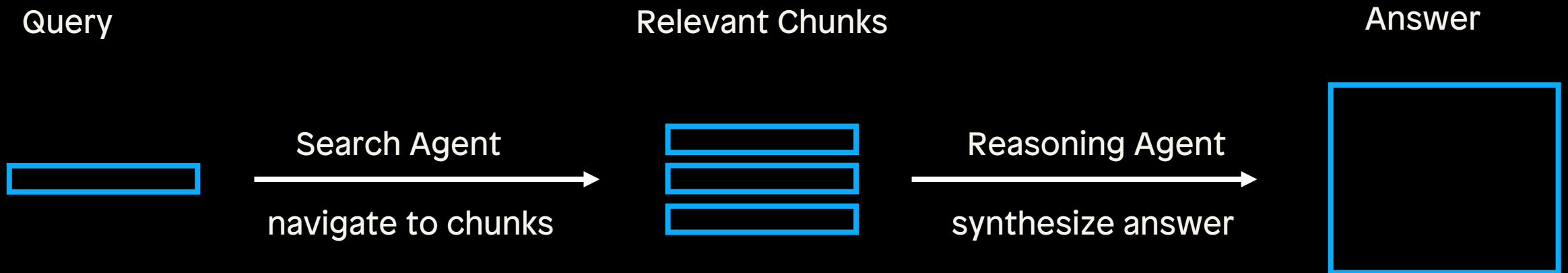
What is the difference between supervised and unsupervised learning algorithms?



Reasoning Agent
→
synthesize answer

Supervised learning uses labeled data with known outputs, while unsupervised learning finds patterns in unlabeled data without predefined outputs.

RAG in Maia Chat



Guidance: Maia Chat



ChatGPT-like chatbot
for developer guidance
in Mendix Studio Pro



Powered by Generative AI



Trained on data from
**Mendix Docs, Support,
Forums and Academy**



Transitioning into an
AI automation agent



Developer productivity



Developer learnability

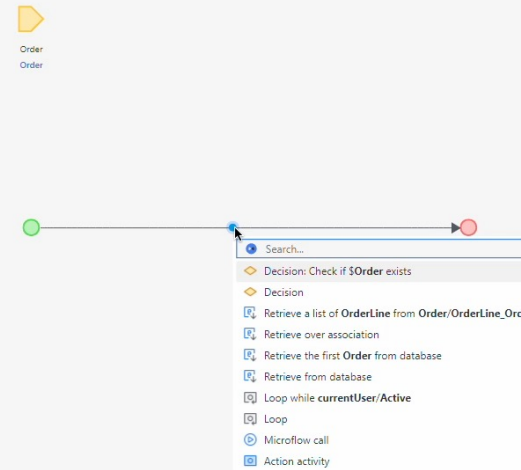
Assistance: Maia Logic Recommender

Real-time, context-driven recommendations for building logic

Build logic up to 30% faster.

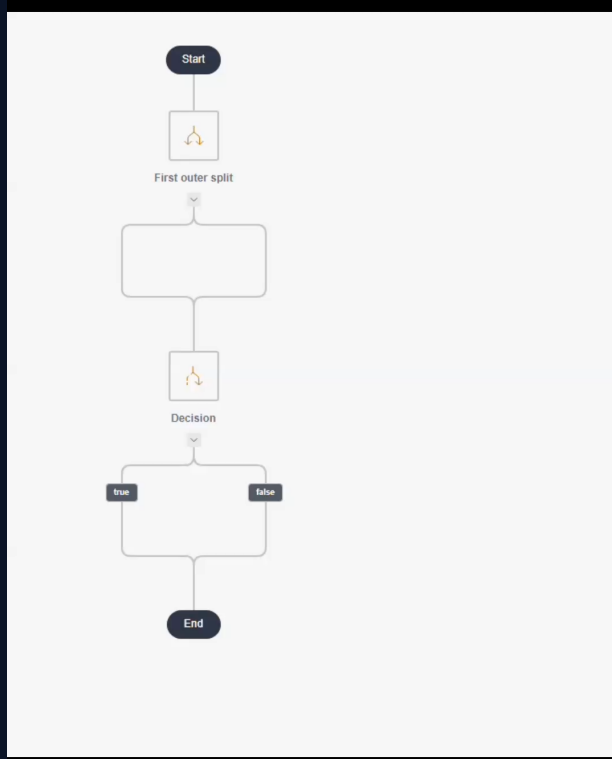
Trained on over 12 million examples with a 95% accuracy rate

Automate and streamline development with AI pre-populating parameters for actions.



Assistance: Maia Workflow Recommender

Real-time, context-driven recommendations for building workflows

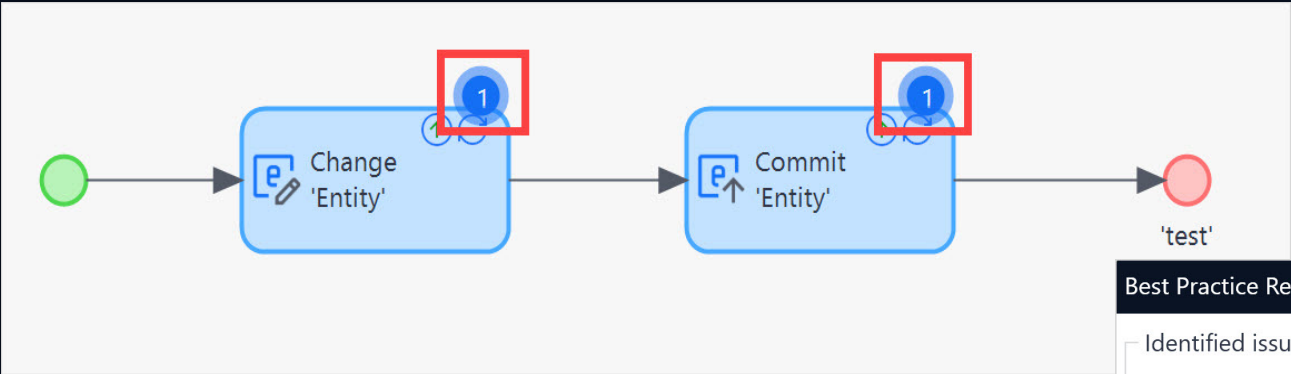


Similar user experience to the Logic Recommender

Workflow Recommender suggests:

- user tasks
- workflow elements (like timer events, decisions, splits, etc.).
- Microflows that are applicable
- Valid activities the workflow can jump to

Assistance: Maia Best Practices Recommender



Automatic detection of anti-patterns in the app model, identifying and pinpointing what's causing the issue.

Best Practice Recommendation

Identified issue

MXP002: Calculated attribute 'MyFirstModule.Entity.Name' is not used anywhere in the app.

Potential impact

This may affect the time taken to retrieve and change object activities in microflows.

How to fix

Consider deleting the attribute 'MyFirstModule.Entity.Name' from the domain model.
[View documentation](#)

Note

This is a general recommendation. We suggest to conduct performance testing to measure the impact on your app.

Would you like Best Practice Bot to fix the issue?

Fix

Close

Automatically implement the best practice and fix the issue in just one click.

Generation: Maia Generators



Use **Maia Chat** to build parts of your applications



Powered by Generative AI



- Domain Model Generator
- Translations Generator
- Summarize & Rewrite
- Many more planned for 2024

Maia

Domain model generation is an experimental feature. For now it works with an empty domain model.

Get started

Please describe your application and I'll generate your entities and associations.

 **Jamie**

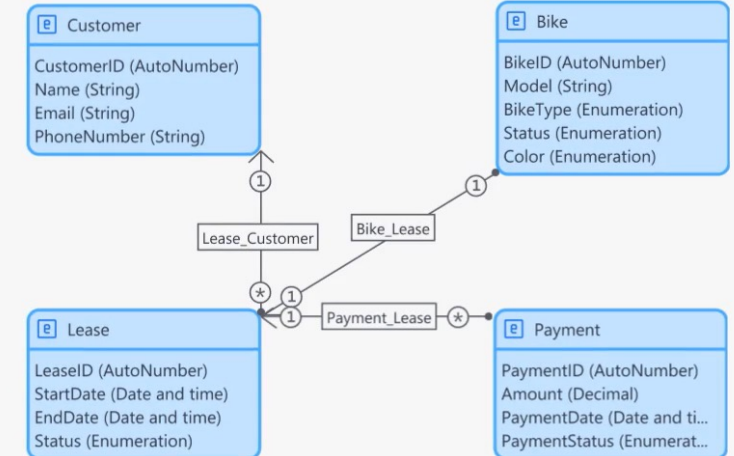
Customer can lease, upgrade or end private lease contracts independently.

Maia

✓ Domain model generated.

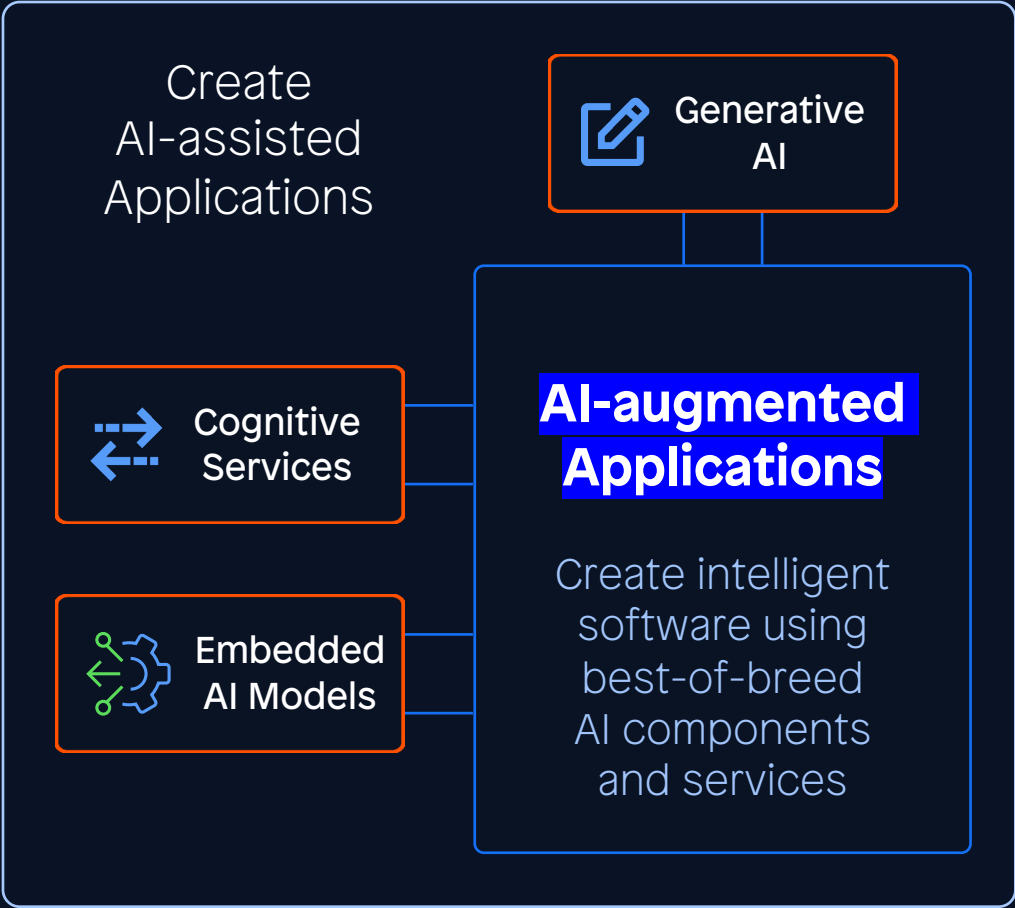
I've placed the entities on your domain model. Please review them. Let me know if there's anything I can add.

Generate domain model



AI Augmented Applications

Mendix is **the** low-code platform for harnessing the power of AI





By 2026, 80% of enterprises will have used GenAI APIs and models and/or deployed GenAI-enabled applications in production environments up from less than 5% early 2023.

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Build Conversation Experiences with Mendix



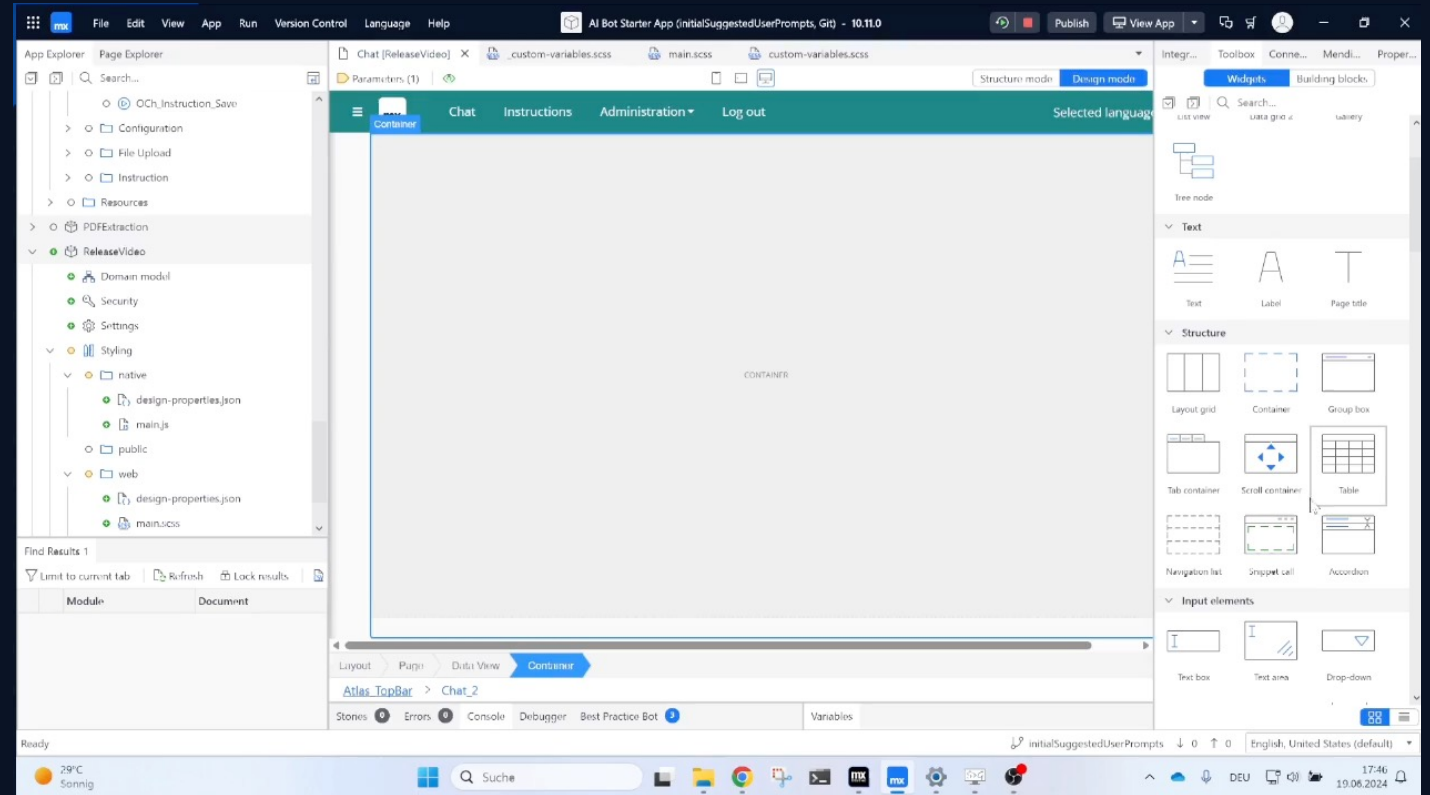
Conversational UI provides reusable components for chat-based interfaces



Powered by any supported LLM and integrate knowledge bases for better accuracy.



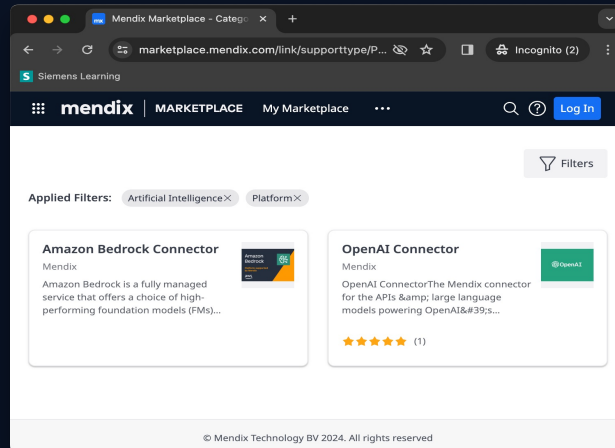
Jumpstart building your own private ChatGPT-like solution with the **AI Bot Starter App**.



AI-Enhanced Application Capabilities

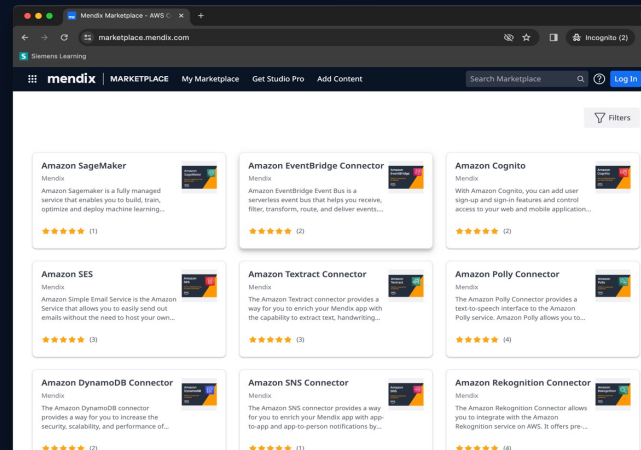
GEN AI CONNECTORS

Platform-supported connectors for Generative AI services from AWS & Azure/OpenAI to enable integration of natural language experiences in Mendix apps



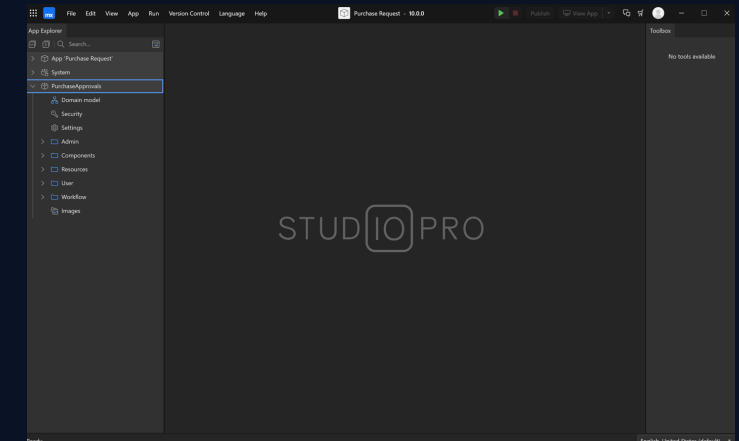
AWS CONNECTORS

Connectors provide a secure and integrated developer experience integrating AWS AI Services like Rekognition, Textract, Polly, SageMaker, IoT TwinMaker, etc.



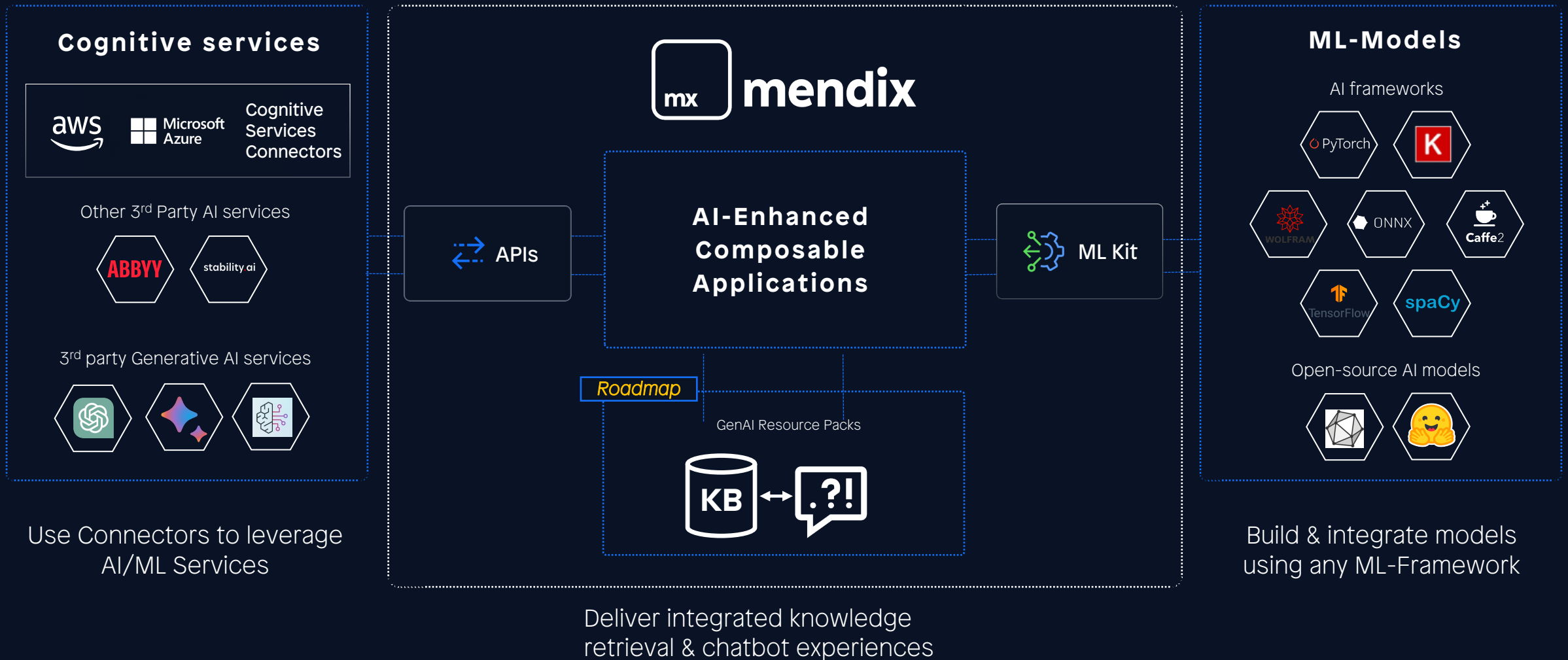
ML KIT

Embed custom trained ONNX-compatible models securely and locally inside Mendix runtime for when cost, data privacy, and performance are paramount



Build AI-Enhanced Solutions

Compose applications from best-in-breed components & services





vivix

VIDROS PLANOS

AWS Bedrock

25

Mendix apps
integrated with
SAP and more

5x

Faster resolution
for customer
complaints

99%

Fix production
issues in minutes
versus 4-5 hours



mendix
A Siemens Business

Key takeaways

- **AI is real and here to stay**
- **Application Development will radically transform in the next 5 years**
- **Applications will become smarter by infusing AI services**
- **Look for AI use cases in your business that can contribute to better outcomes**
- **Don't invest in AI like a headless chicken...**



Thank you.

mx