

Langcode Inc.

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# Langcode Concierge

AI Chatbot-based Integrated Work Environment  
for Software Development

# 01. Background

SW development capabilities are key to the business in all industrial fields

**“Every company is a software company”**

by Microsoft CEO Satya Nadella



**Developer Velocity = Business Velocity**


Software development is at the core of how organizations run

**ZDNet**

Demand for developers is soaring - and employers are struggling to hire

And without much surprise, one of the most in-demand jobs across the UK is software developer, for which there were nearly 10,000 vacancies ...

2021. 6. 17.




**Forbes**

Is There A Developer Shortage? Yes, But The Problem Is More Complicated Than It Looks

The reality, though, is more complicated than just a shortage of developers. The problem also has a lot to do with how most companies hire ...

2021. 6. 8.

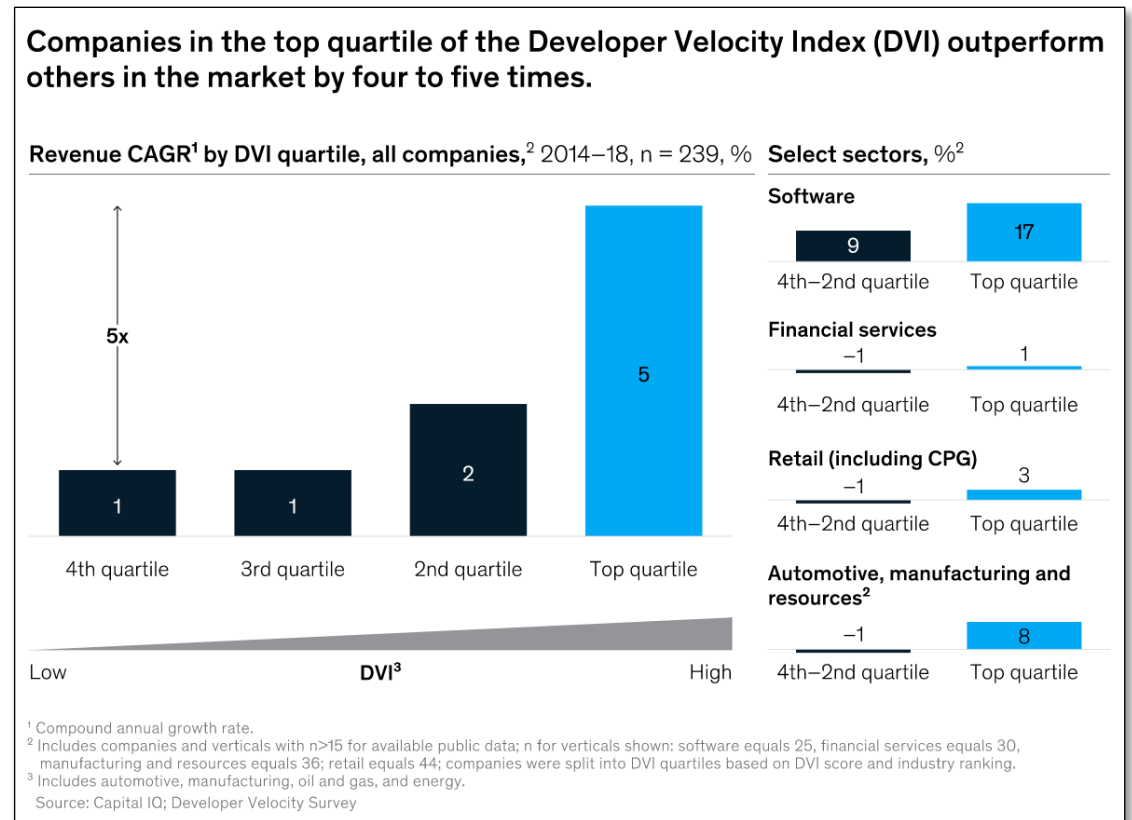


**TNW TechNewsWorld**

Software Business Driving US Jobs, GDP Growth

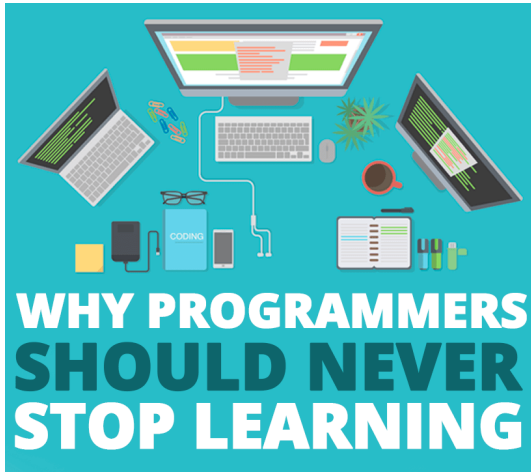
Developer shortages have been a problem in the software industry for ... a professional programmer, but can use tools to create simple apps.

2021. 5. 5.



# 02. Problem

SW development capabilities are affected from problems in various fields such as HRD, communication, management and etc



## High necessity of learning

1,393 new modules and package flooding in daily

47.8% of developers study on their own during off-work hours

On-the-job training is necessary, but there are time and cost issues

lang {code}



## Knowledge fragmentation

*"Collaboration with developers has a strong resemblance to conversation with foreigners."*

Fragmentation of knowledge, terminology, and concepts between developers, planners, designers, PMs, and marketers

## HOW TO MEASURE PERFORMANCE OF SOFTWARE DEVELOPERS

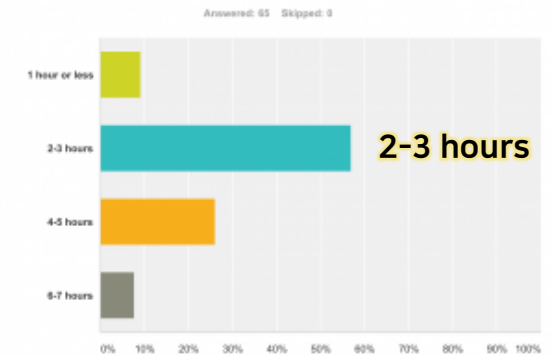


## Difficulty of data analysis

Need to collect and analyze a data in real time to measure individual and team performance.

The cost of aggregation, monitoring, utilizing increases exponentially with the volume and variety of data

About how much time do you spend coding per work day? This DOESN'T include research, googling, reading, or anything other than just typing code.



## Burden of non-dev tasks

Developers spend only 3 hours for writing code out of 8 hours per day

High burden of reporting, meetings, and documentation causes a massive drop in developer productivity

# 03. Solution: SW Development Concierge

AI chatbot-based all-in-one collaboration solution, which provides an integrated work environment for SW development team

## Training

- Group & self-paced learning
- Lightweight LMS

## Guide

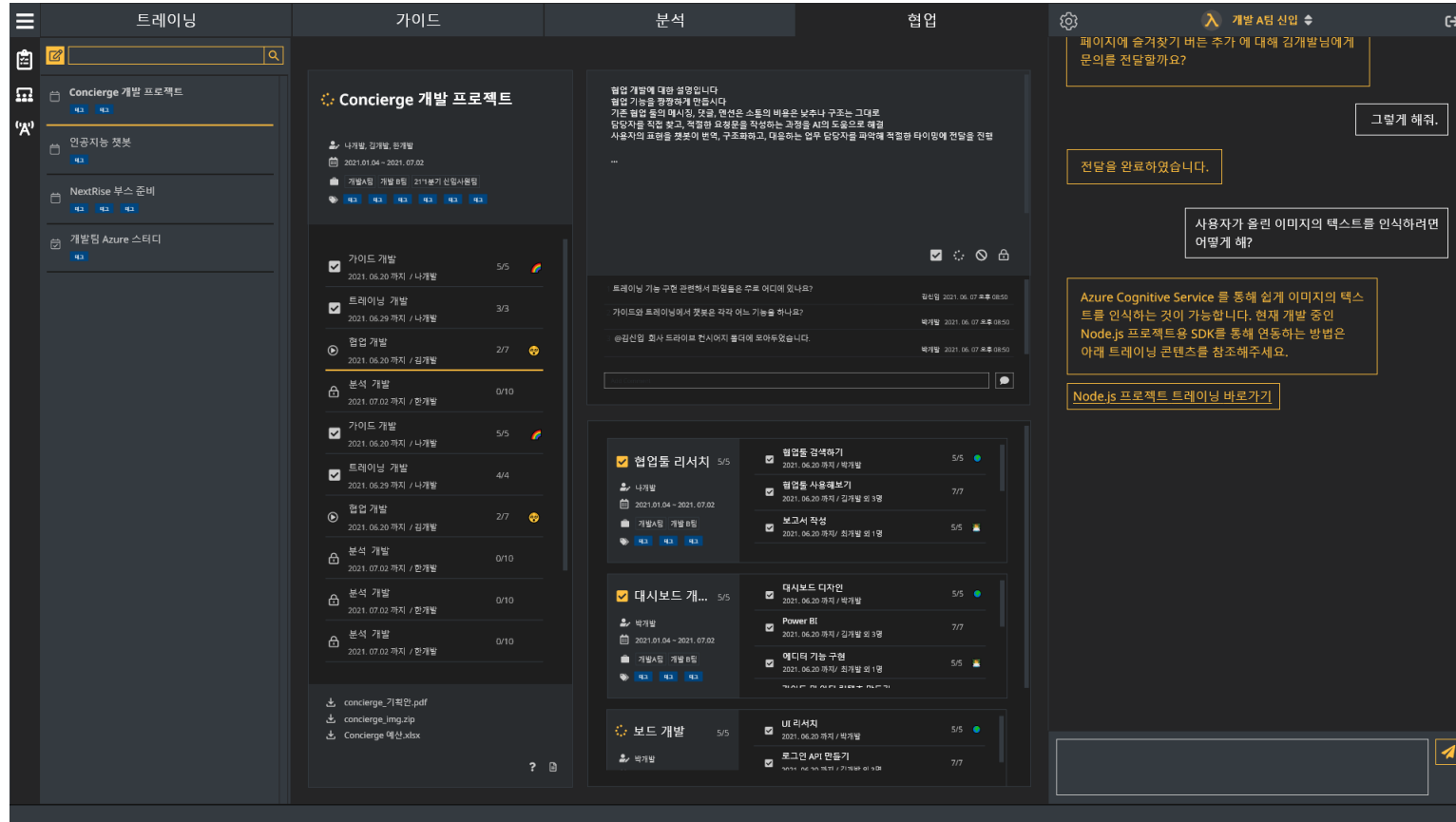
- Integrated Q&A hub
- Reference storage (documents, links, ...)

## Analysis

- Metric hub for team (work records, KPI, ...)
- Custom dashboard

## Collaboration

- To-do based project Management
- Command center



## AI Chatbot

- Built-in chatbot out of the box
- Notification, alarm
- Task automation
- Personalized Q&A

## All-in-One

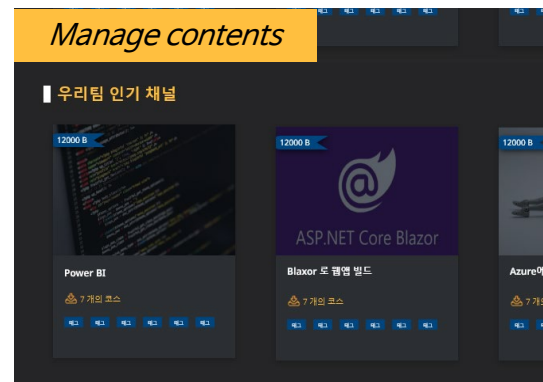
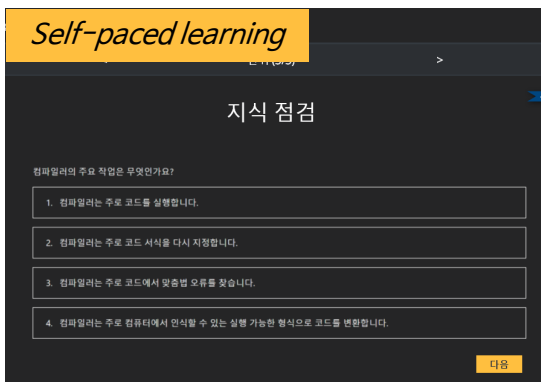
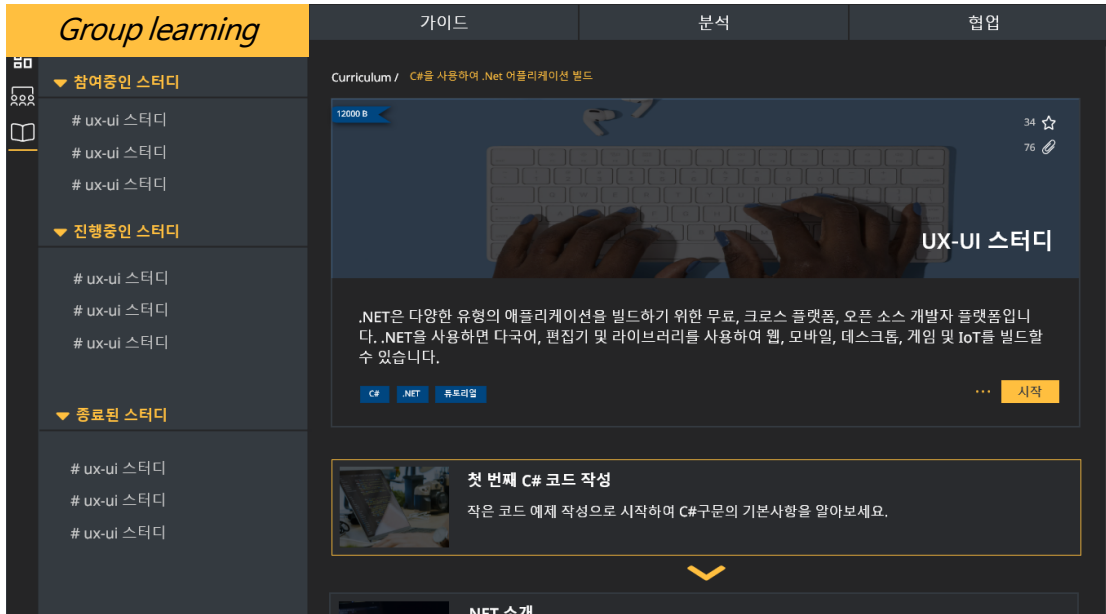
- Minimize context switching
- Developer-friendly UI/UX
- Provides powerful search features

## Integrated Work Environment for SW development

boost SW development capabilities, minimize context switching, powered by AI chatbot

# 04. Training

AI chatbot provides personalized learning experience and automate L&D (Learning & Development)



## Main Functions

Group & self-paced learning  
online learning hub at workplace

Lightweight LMS  
author, manage learning contents

Personalization with AI  
chatbot as an instructor

## Expectations

Improvement  
of organizational learning culture

Accumulation  
of learning contents for team

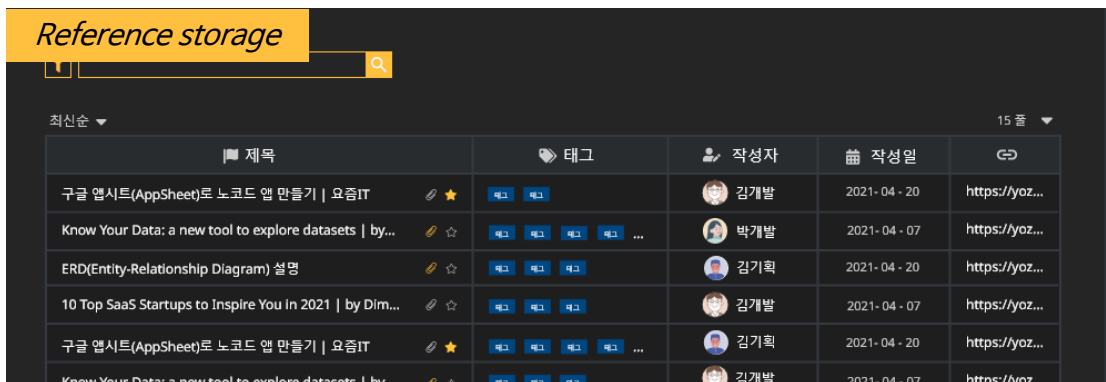
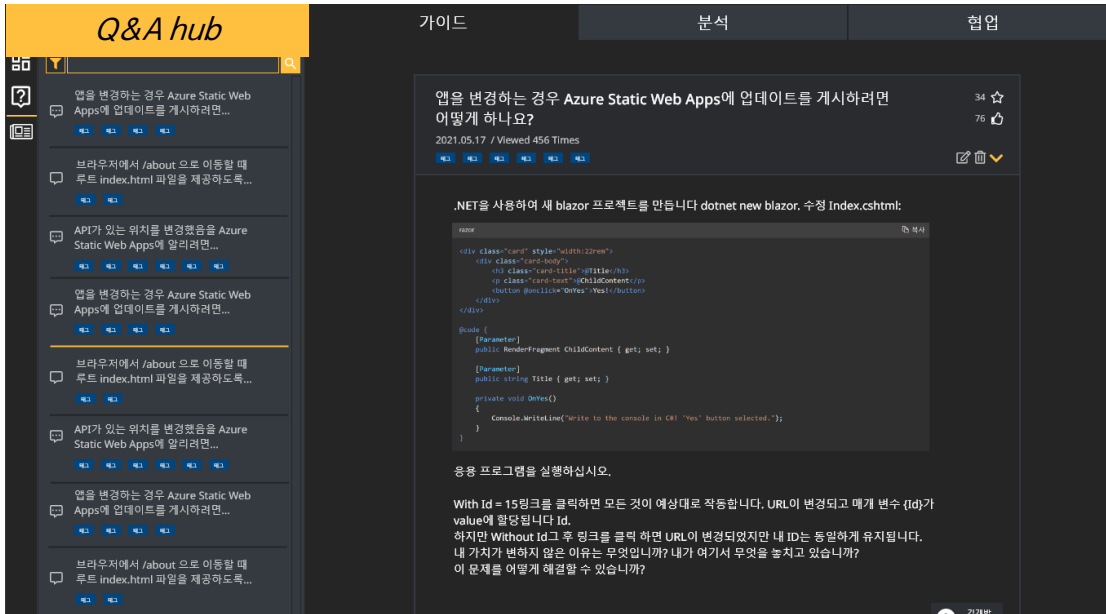
Automation  
of L&D (Learning & Development)

**94%** *Percentage of employees who said they would stay longer if company invests in L&D\**

*\* LinkedIn Learning 2019 Workplace Learning Report*

# 05. Guide

AI chatbot provides up-to-date information by automated tagging and keyword extraction to prevent knowledge fragmentation



## Main Functions

Integrated Q&A hub  
open, shared communication hub

Reference storage  
SSOT for documents, links, ...  
(Single Source Of Truth)

KMS with AI  
chatbot as a knowledge organizer  
(Knowledge Management System)

## Expectations

Broadcasting  
of knowledge and information

Minimization  
of search cost and duplication

Digitalization  
of Knowledge processing tasks

11%

Percentage of time a knowledge worker spends  
searching or rewriting materials daily\*

\* Spiceworks Ziff Davis

# 06. Analysis

AI chatbot supports real-time aggregation, visualization, monitoring of diverse data (work records, KPI, 3<sup>rd</sup> party platform, ...)



Data Type	Description
Service Data	Service access, usage status, contents creation, etc.
Work Records	File upload, telemetry data from Office, Visual Studio, etc.
KPI, OKR	Integration with Notion, Excel, Google Sheet, etc.
3 <sup>rd</sup> party platforms	GitHub, Google Analytics, etc.
In-house API, logs	Support Open API and webhooks for custom integration.

## Main Functions

**Metric hub for team**  
track team's work records, KPI, ...

**Custom dashboard, reports**  
no-code visualization experience

**Monitoring & Querying with AI**  
chatbot as a data analyst

## Expectations

**Unification**  
of performance measurements

**Acceleration**  
of data-driven decision making

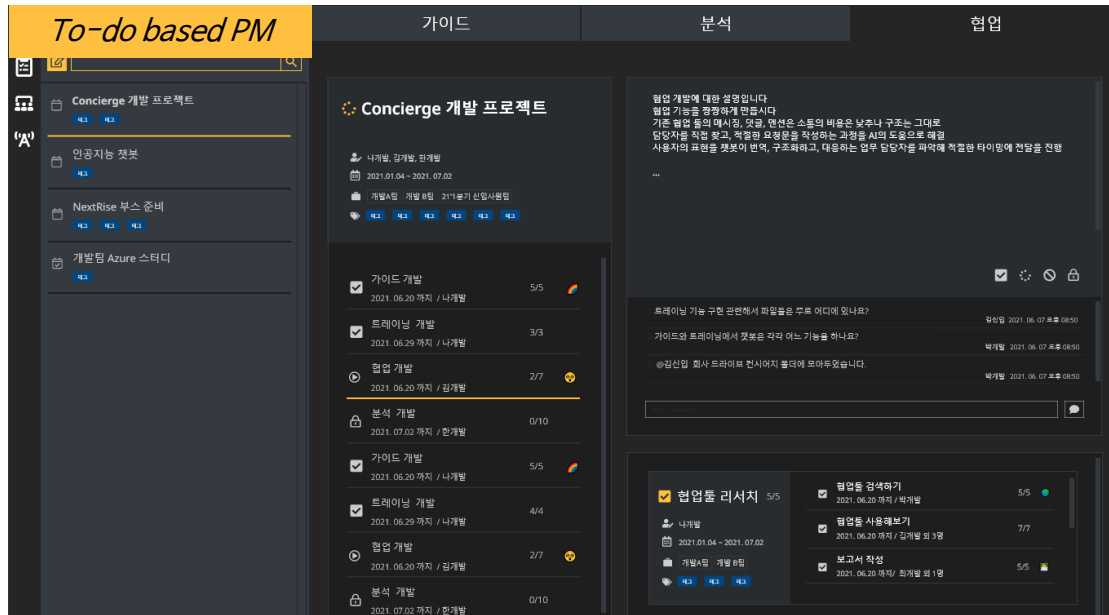
**Boosting**  
of team's data literacy

**41%** *Data leading companies accelerated time to market for new services. (Compared to data recognition stage companies)\**

\* IDC InfoBrief 'Reasons to be Interested in Data Culture' ; April 2020

# 07. Collaboration

AI chatbot works as a mediator, managing projects and delivering work requests without interrupting team members' work



## Main Functions

To-do based project management  
start easy, scale with automation

Command center  
real-time status view & messaging

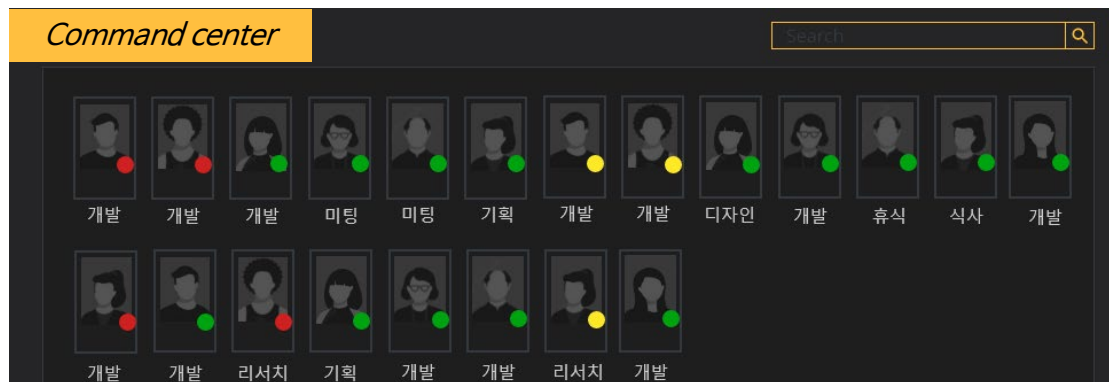
Mediation with AI  
chatbot as a virtual secretary

## Expectations

Digitalization  
of project managing tasks

Minimization  
of distraction from work

Facilitation  
of flexible collaboration



60%

Percentage of 'work about work'  
out of the total work \*

\* Asana, Anatomy of Work Index 2021

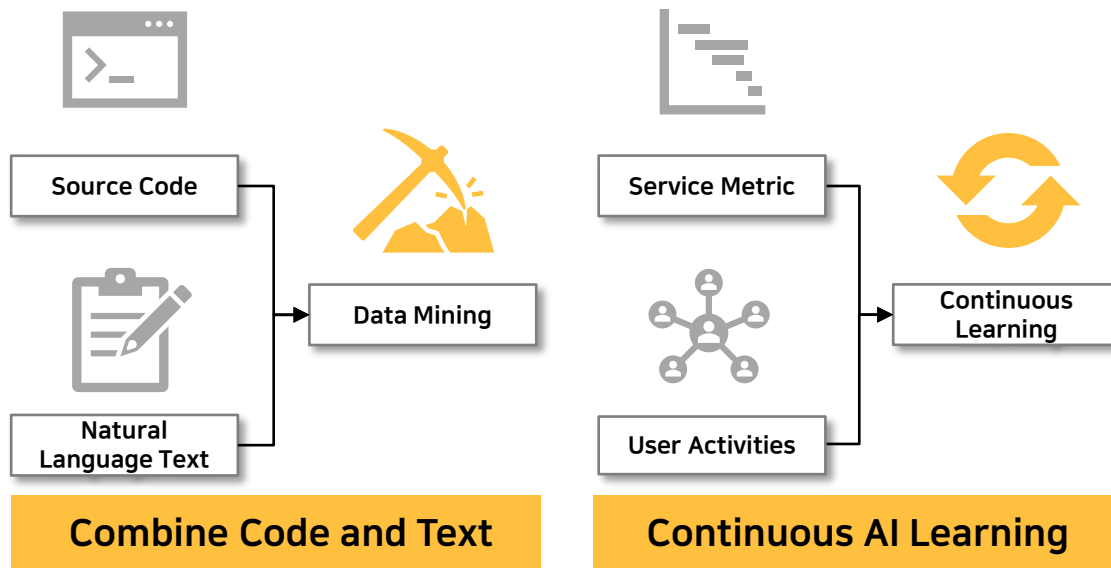


# 08. Customized AI Chatbot

Langcode AI chatbot provides customized Q&A for SW development teams through combination of code and text data

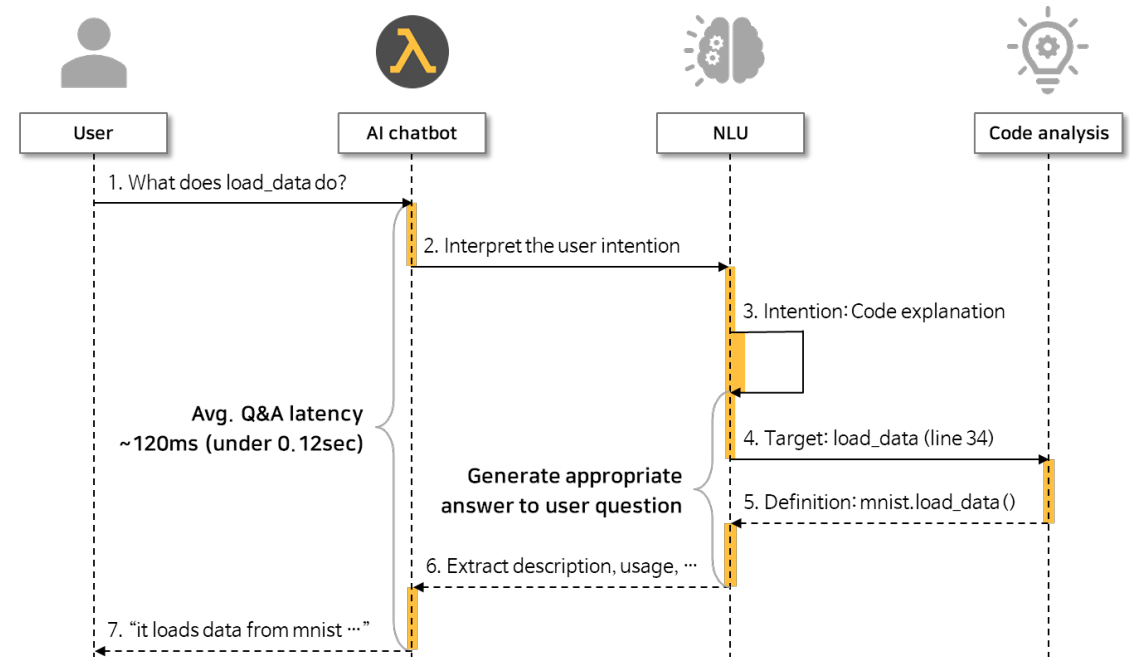
**AI chatbot constantly learns different skills, concepts, and knowledge from each client**

overcomes existing chatbots' limitation by utilizing both natural language text data and source code data



Extract team's unique concepts and proper nouns by combining source code and natural language text data

Chatbot constantly learns from service metrics and user activities to provide customized Q&A

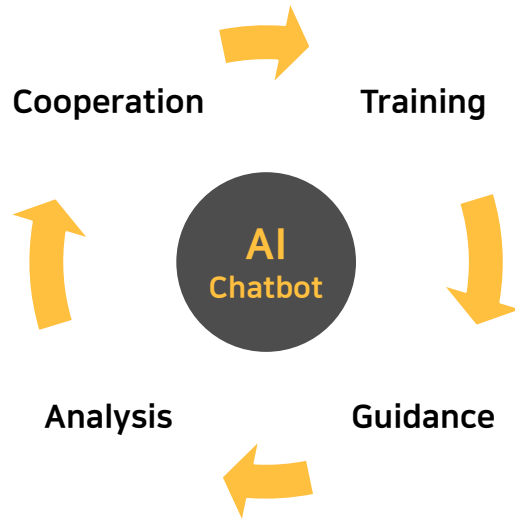


- Existing chatbots have limitations in interpretation of codes and proper nouns referred to by users
- Langcode Concierge provides customized Q&A by analyzing terms, relation, and structure of the source code

# 09. Competitive Advantage

🔗 The only AI-chatbot based, all-in-one collaboration solution, which minimize context switching and provide customized Q&A

All-in-One & AI-chatbot based



**All-in-One**

Minimize context switching  
Prevent knowledge fragmentation



**AI chatbot-based**

Provide customized Q&A  
Real-time notification & automation

Area	Langcode Concierge	Jira	Asana	Pluralsight	Stack Overflow	Classum
Training	Group learning					Available
	Self-paced learning			Available		
Guidance	Q&A hub				Available	Available
	SSOT of files, links, ...				Available	
Analysis	Metric hub	Available	Available			
	Custom dashboard (no-code)	Available (pro-code)	Available (pro-code)			
Collaboration	To-do based Project management	Available	Available			
	Team status, messaging	Available	Available			
AI chatbot	Customized chatbot Q&A					