

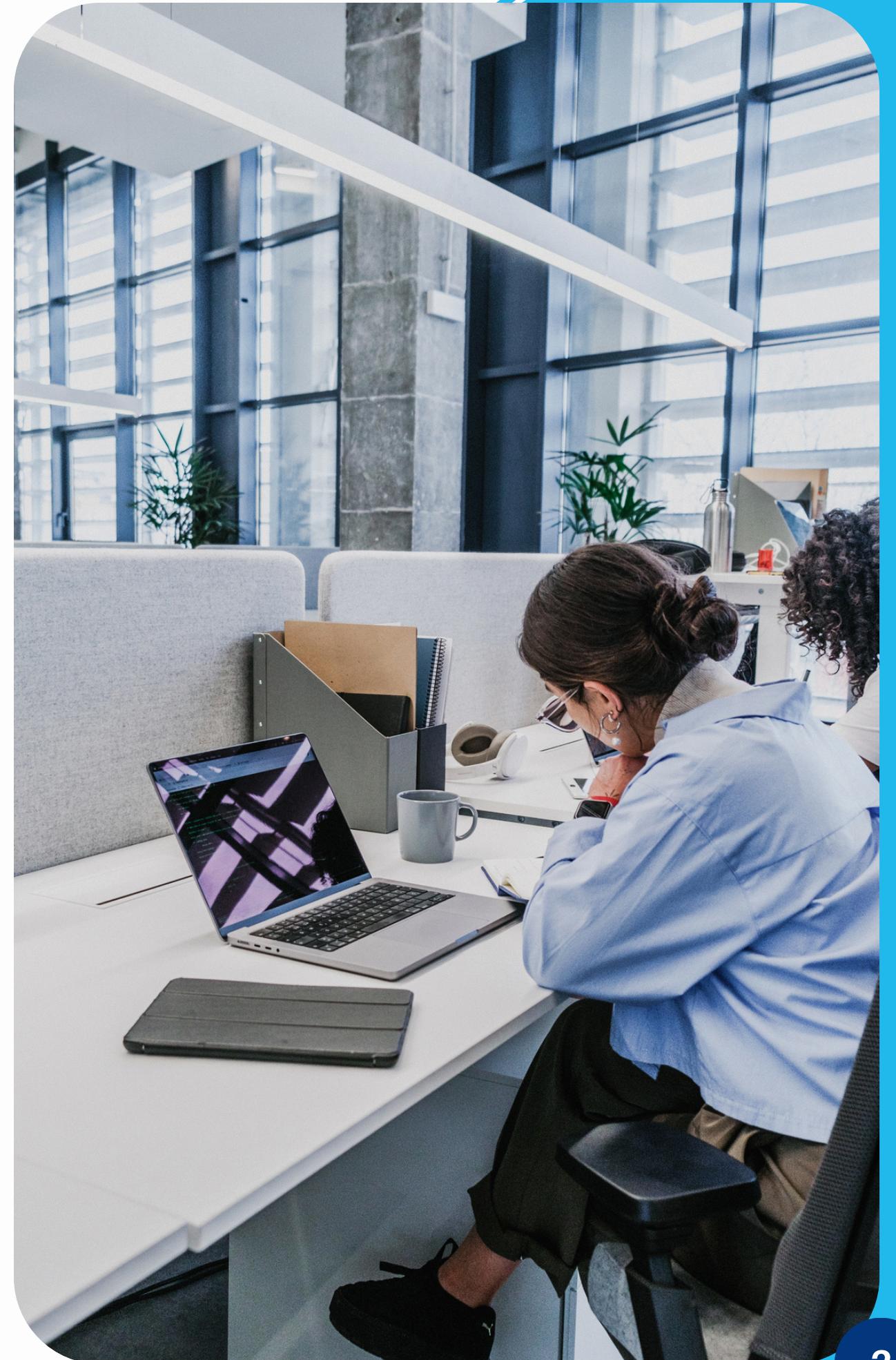
Understanding Software Development & Role of AI in SDLC

By SSS Team



Overview

- ▶ What is Software
- ▶ Why We Develop Software
- ▶ How Software is Developed
- ▶ What is SDLC
- ▶ Phases of SDLC
- ▶ What is Artificial Intelligence (AI)
- ▶ Before vs After AI in Requirement Gathering
- ▶ AI Tools for Requirement Gathering



What is Software

- Definition: A set of instructions or programs that tell a computer what to do.
- Types: System Software, Application Software, Utility Software.
- Examples: Windows OS, Microsoft Word, Google Chrome, ERP software.

Why We Develop Software

- Automate Tasks
- Solve Problems
- Improve Productivity
- Enhance Communication



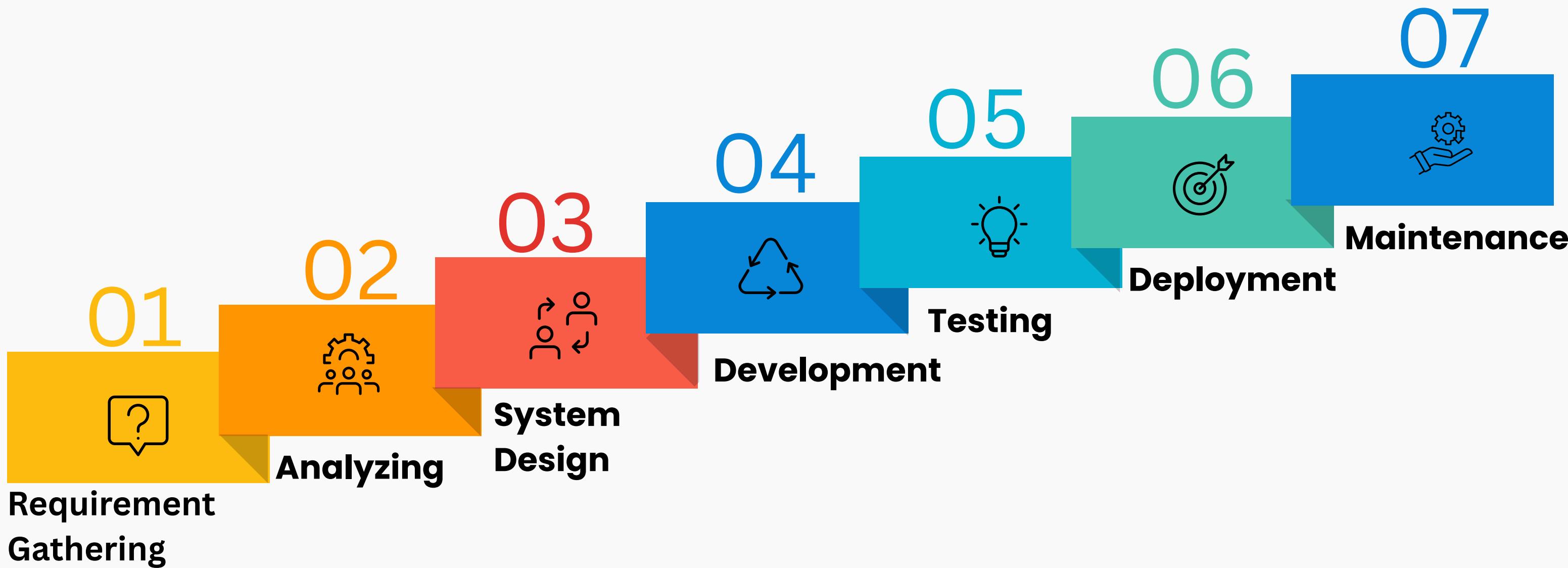
HOW TO DEVELOP SOFTWARE

What is SDLC?

- Definition: SDLC is a process used by the software industry to design, develop, and test high-quality software.
- Objective: Deliver software that meets or exceeds customer expectations.

SDLC Steps

The Software Development Life Cycle (SDLC) is a crucial framework for building high-quality software, ensuring it meets user needs and expectations.



REQUIREMENT GATHERING

- Understand what users need.
- Conduct meetings, surveys.
- Prepare requirement documents (PRD).



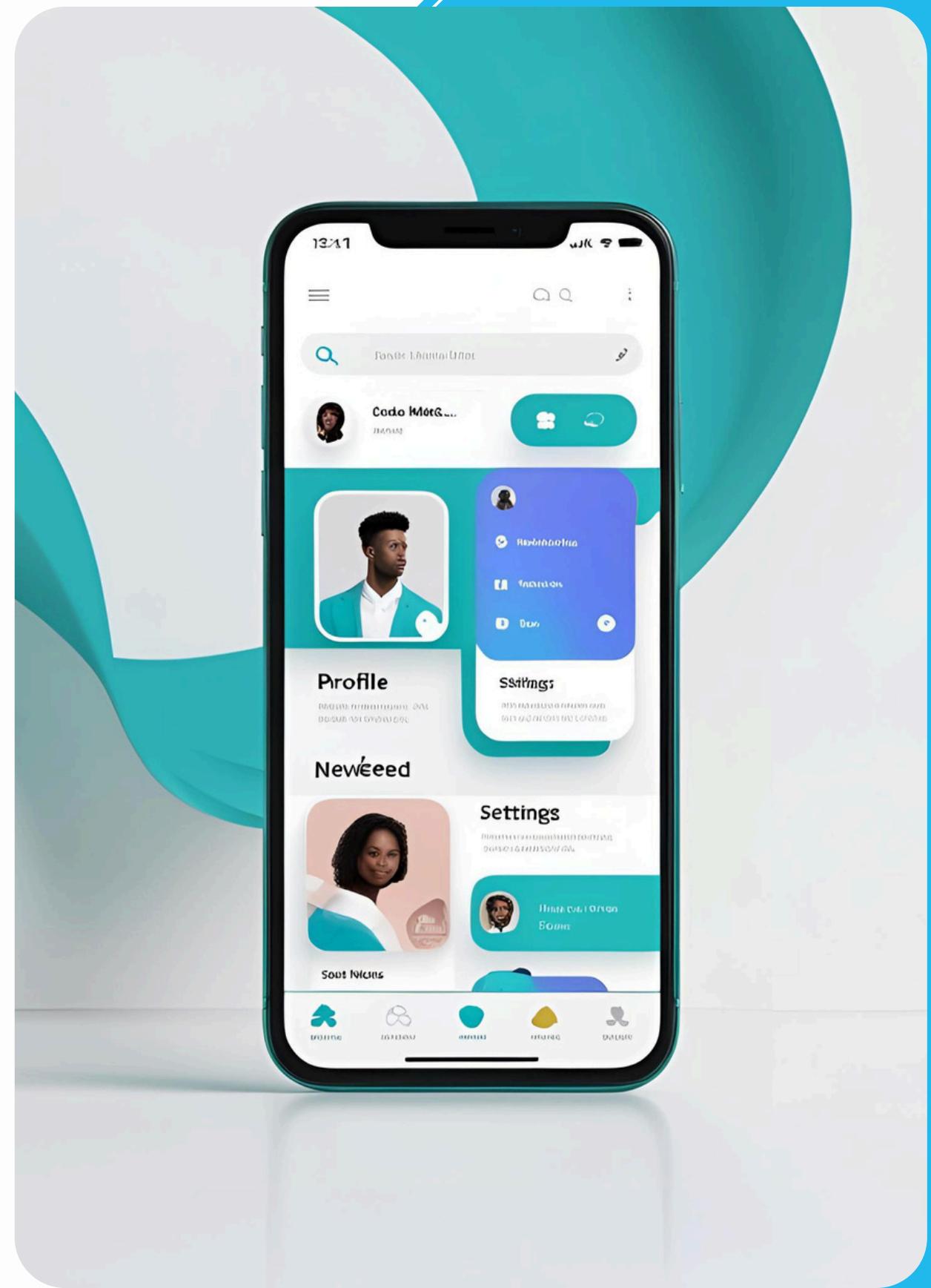
ANALYZING (PLANNING)

- Analyze if the project is technically and financially possible.
- Types: Technical, Operational, Economic, Legal.



SYSTEM DESIGN

- Create software architecture and design.
- UI/UX, database, system design diagrams (DFD, ERD).



DEVELOPMENT

- Write actual code based on design.
- Use programming languages, frameworks, and tools.
- Follows coding standards and best practices.



TESTING

- Verify and validate the software.
- Types: Unit Testing, Integration Testing, System Testing.



DEPLOYMENT

- Make the software live for users.
- Can be done in stages (pilot, full deployment).



MAINTENANCE

- Fix bugs, make updates, improve performance.
- Ensure long-term functionality and user satisfaction.



WHAT IS AI?



How AI Works?

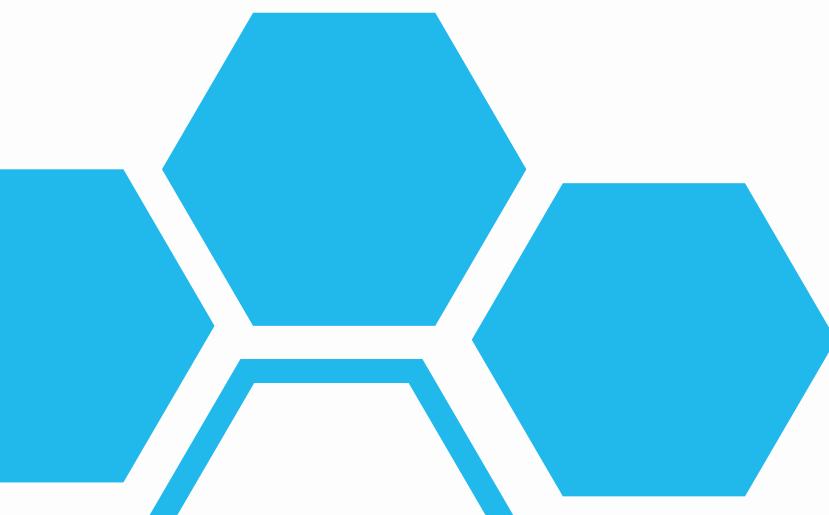
How AI Works?

- Works through Machine Learning, Natural Language Processing.
- Trained on data to learn patterns and make decisions or predictions.



How AI Helps in SDLC

- **Requirement Gathering** : Auto-generate requirement docs
- **Design** : Generate UI wireframes
- **Coding** : Code generation & suggestions
- **Testing** : Auto test case generation
- **Deployment** : Predict best time for release
- **Maintenance** : Auto bug detection from logs



Before vs After AI Tools in Requirement Gathering

Phase	Before AI	After AI
Time	Manual writing, long time	Instant generation
Accuracy	Human errors	High accuracy
Collaboration	Limited, document sharing	Real-time, interactive
Updates	Manual revisions	AI-suggested changes
User Stories	Written by analysts	AI-generated user-centric stories

AI TOOLS FOR REQUIREMENT GATHERING



UserDoc

What it is :

AI-based tool for writing user stories
and mapping user journeys.



Use in Requirement Gathering :

Generates complete, editable user stories.
Helps product teams visualize user needs early.
Assists in backlog creation and refinement.



Notion AI

What it is :

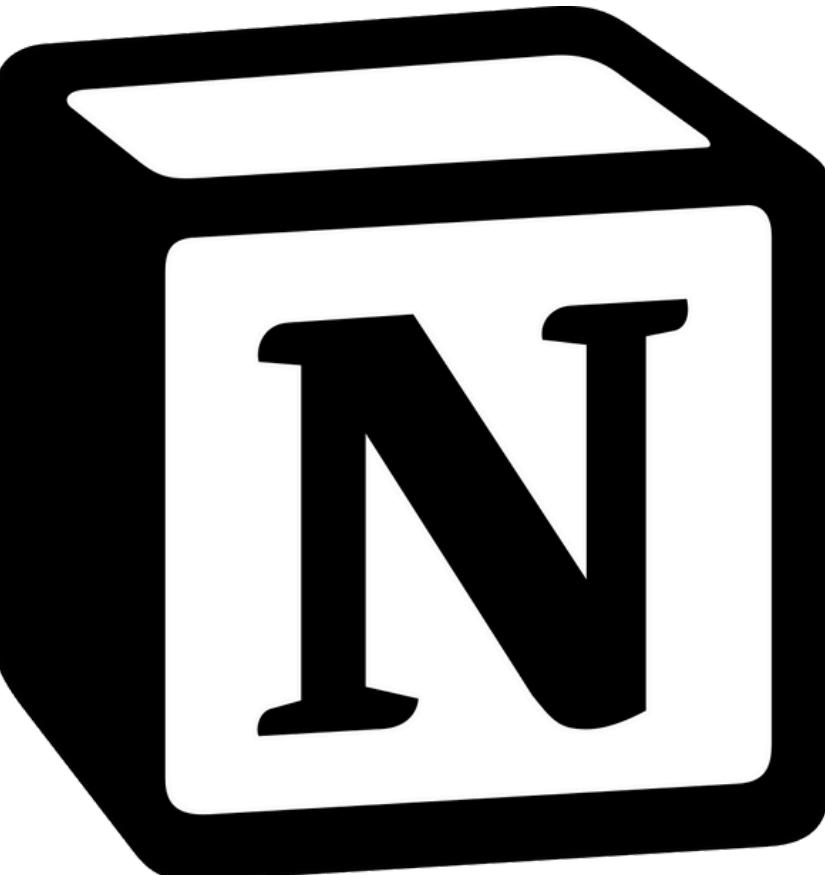
An AI-powered workspace that helps with writing, organizing, and summarizing.

Use in Requirement Gathering :

Automatically summarizes stakeholder discussions.

Generates structured meeting notes.

Converts bullet points into user stories or requirements.



WriteMyPRD

What it is :

AI tool to generate Product Requirement Documents (PRDs).

Use in Requirement Gathering :

Converts ideas into detailed PRDs.

Saves time on writing documentation.

Helps ensure clarity and standard formatting.



Visure

What it is :

Enterprise-level Requirements Management tool.

Use in Requirement Gathering :

Manages and tracks requirements.

Provides traceability and compliance reports.

Supports collaboration and approval workflows.





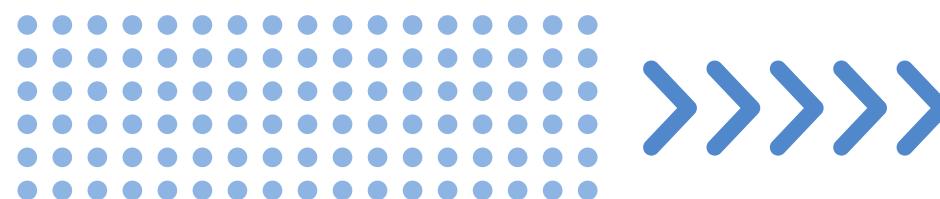
ChatGPT

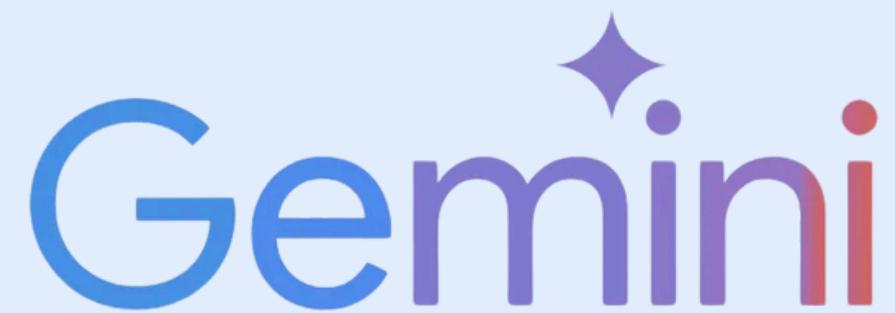
What it is :

AI chatbot with natural language processing.

Use in Requirement Gathering :

Helps brainstorm product features.
Rewrites and refines requirements.





Gemini

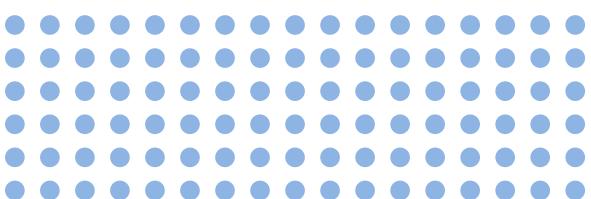
What it is :

Google's AI assistant similar to ChatGPT.

Use in Requirement Gathering :

Summarizes Gmail, Docs, and Meet notes.

Helps write early drafts of specifications.



Copilot



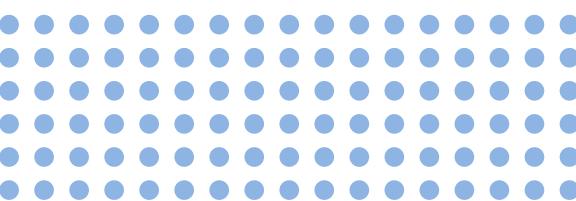
What it is :

AI assistant mainly for developers.

Use in Requirement Gathering :

Helps convert user stories into early code templates.

Assists in early validation of technical feasibility.





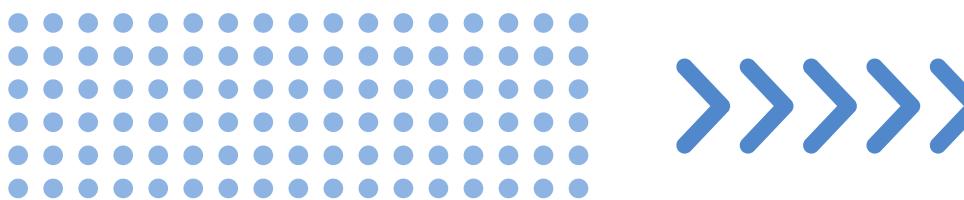
Jama Software

What it is :

Platform for managing complex system requirements.

Use in Requirement Gathering :

Enables real-time requirement tracking.
Ensures traceability across teams.
Used in highly regulated industries (health, aerospace, etc.)



Eraser

What it is :

AI-based diagram and documentation tool.

Use in Requirement Gathering :

Generates flowcharts and system diagrams from plain text.

Visualizes requirements quickly.

Good for collaboration during ideation.



Miro

What it is:

Online collaborative whiteboard platform.

Use in Requirement Gathering:

Teams brainstorm and map user journeys visually.

Templates for requirement workshops.

AI helps with summarizing sticky notes and diagrams.



miro

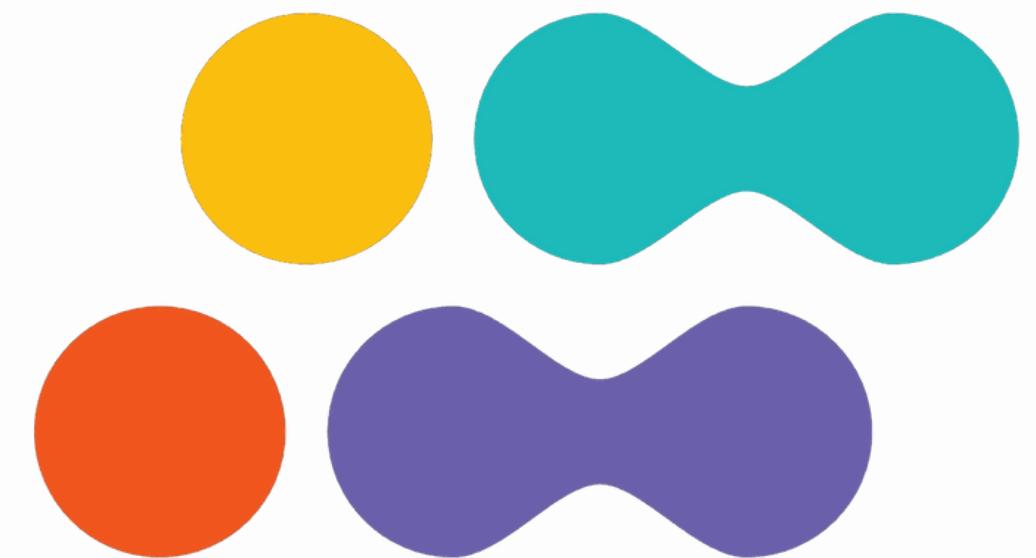
Sembly.ai

What it is :

AI assistant for product teams.

Use in Requirement Gathering :

enhance meeting productivity and collaboration by automating meeting note-taking, providing summaries, and generating insights



SEMBLY AI

Fireflies.ai

What it is :

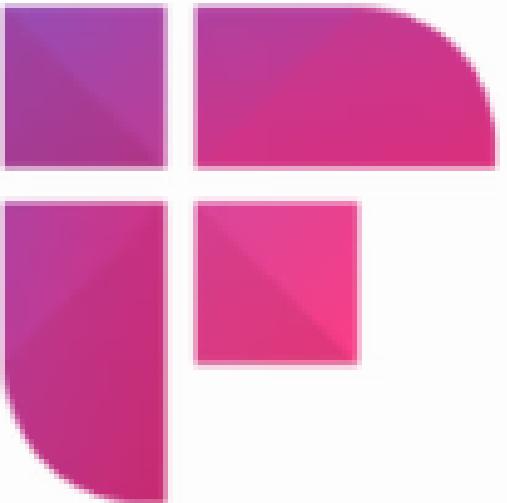
AI tool for recording, transcribing, and summarizing meetings.

Use in Requirement Gathering :

Records stakeholder interviews.

Transcribes voice to text.

Summarizes key points into requirement format.



Fireflies

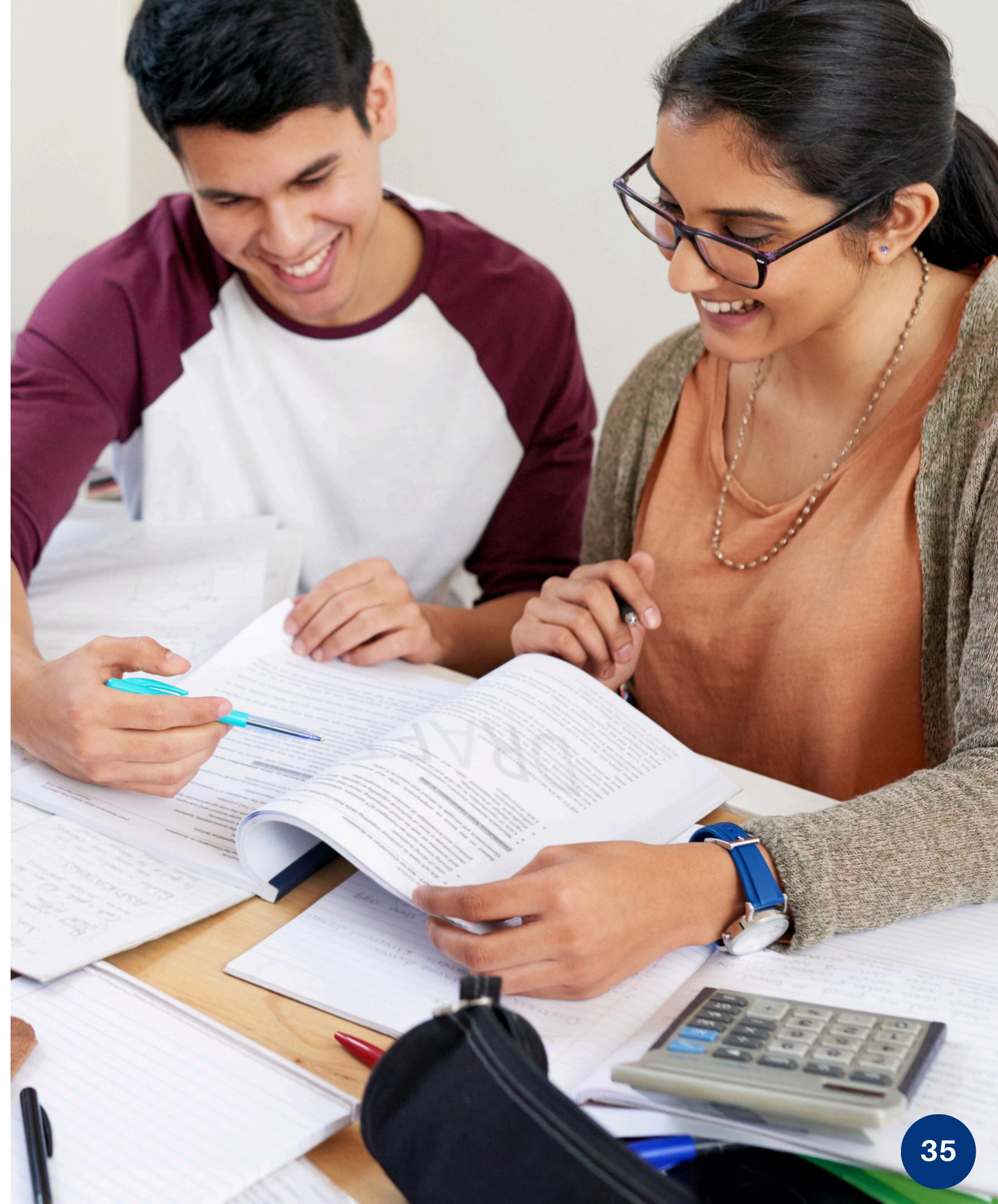
Thank
You



Any Question ?

Assignment

Choose a simple software idea – like an attendance app, hostel management system, or shopping app. For this project, you have to use an AI tool to gather the requirements. From the AI-generated response, write down 5–6 important points. Also mention which software idea you chose and which AI tool you used.





SHARE ASSIGNMENT



aklesh@singaji.in



pinki@singaji.in



archna@singaji.in