Preparing for Software Development in the AI era

Nicolas Melo / October 22, 2026

Agenda

Software development is more than code

How AI is changing the work

Software fundamentals + AI fluency

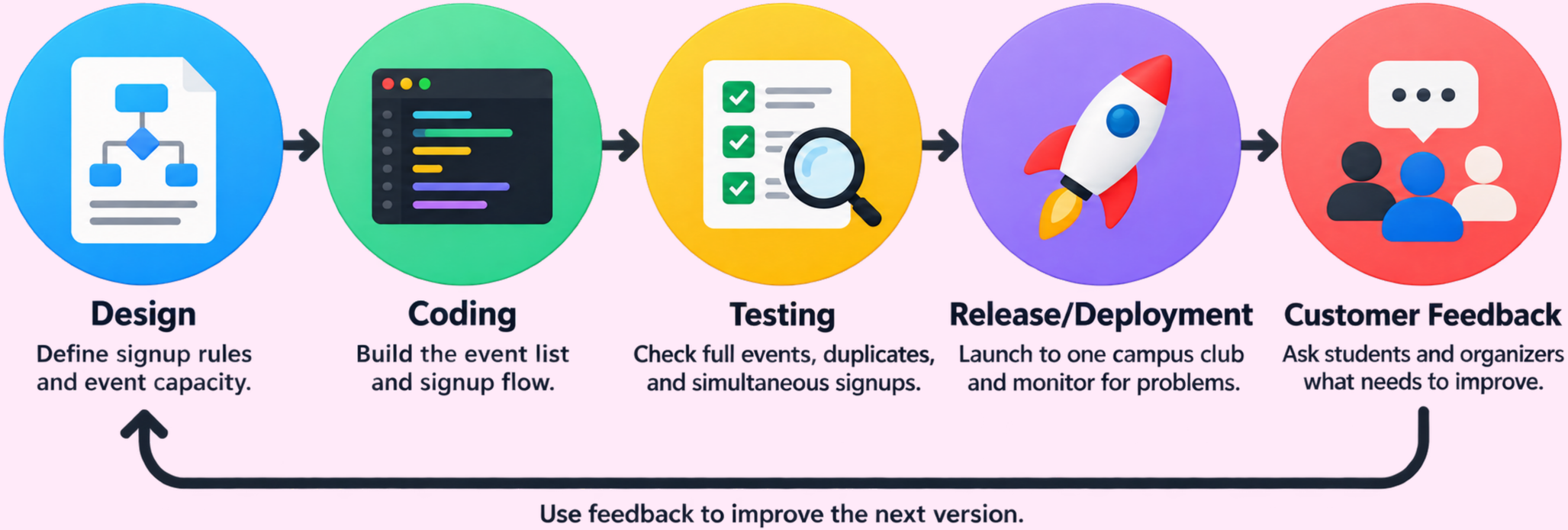
Ways to practice both

Questions / discussion

Software development is more than code

Basic development cycle

App: “Present!”



Key roles

How does the system work?

- **Software Engineer**
- Software Test Engineer (QA, SDET)
- Product/Program/Project Manager
- Designer
- Release Engineer
- Leadership



Coding

Build the solution

Key roles

Where could this fail?

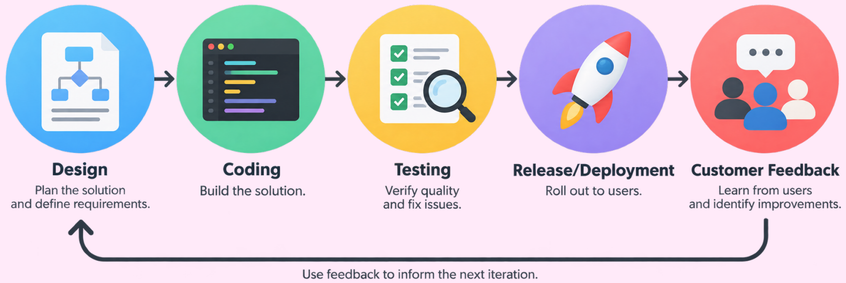
- Software Engineer
- **Software Test Engineer (QA, SDET)**
- Product/Program/Project Manager
- Designer
- Release Engineer
- Leadership



Key roles

Solving the right problem / coordinating the work

- Software Engineer
- Software Test Engineer (QA, SDET)
- **Product/Program/Project Manager**
- Designer
- Release Engineer
- Leadership



Key roles

Can people understand and use this?

- Software Engineer
- Software Test Engineer (QA, SDET)
- Product/Program/Project Manager
- **Designer**
- Release Engineer
- Leadership



Design

Plan the solution
and define requirements

Key roles

How do we deliver changes safely?

- Software Engineer
- Software Test Engineer (QA, SDET)
- Product/Program/Project Manager
- Designer
- **Release Engineer**
- Leadership



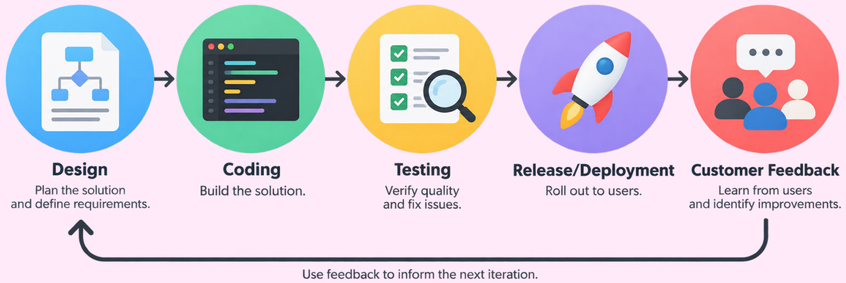
Release/Deployment

Roll out to users

Key roles

What deserves our time and resources?

- Software Engineer
- Software Test Engineer (QA, SDET)
- Product/Program/Project Manager
- Designer
- Release Engineer
- **Leadership**



Key roles

- **Software Engineer**
- Software Test Engineer (QA, SDET)
- Product/Program/Project Manager
- Designer
- Release Engineer
- Leadership



Coding

Build the solution

The work behind the code

What a software engineer actually does

- **Software Engineer**
  - Understand an unfamiliar system
  - Design a change
  - Write and review code
  - Investigate failures
  - Test behavior
  - Explain decisions



Coding

Build the solution

The work behind the code

UNDERSTAND

A bug report

“The signup page crashes when there are no events.”

Reproduce the failure.
Read the existing code.

CHANGE

A small fix

```
if no events:
  show empty state
```

Choose the behavior.
Explain the decision.

VERIFY

Evidence

- ✓ Empty list works
- ✓ Existing events still work
- ✓ Another person reviews it

Then release and observe.

How AI is changing the work

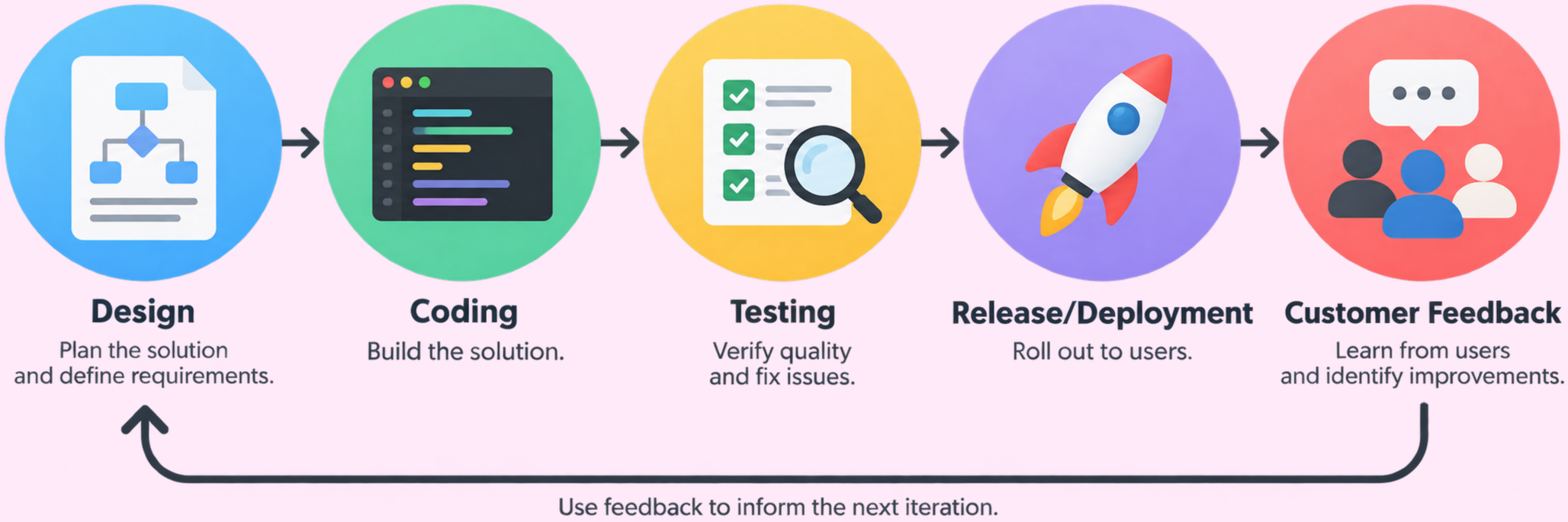
How AI is changing the work

AI across the development cycle

What I mean by “AI-native”

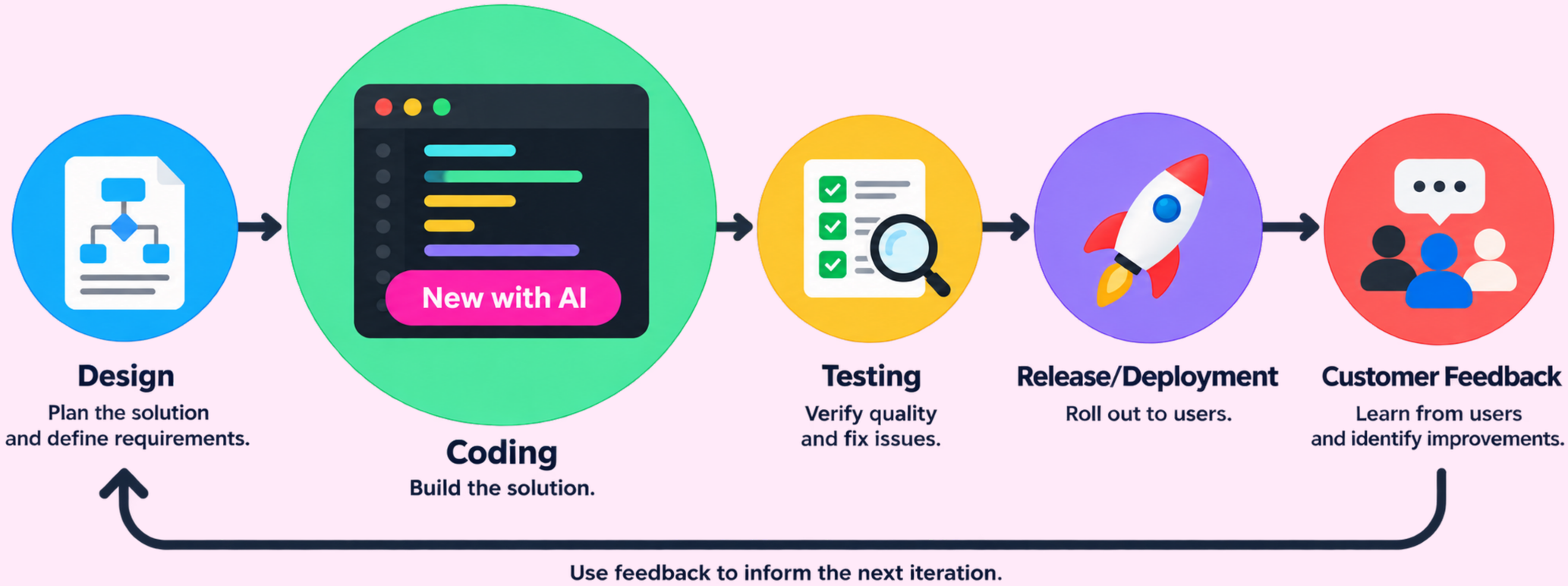
Nothing!

What’s changed?



Sometimes it feels like this …

What's changed?



Everything!

What’s changed?



The responsibilities remain. How we carry them out is changing.

What is “AI-native?”

Someone who can give AI useful context, guide its work, and evaluate the result.

What I’m seeing at work

- More work includes AI assistance
- Small tools are easier to prototype
- Reviewing generated changes takes judgment
- Teams are learning new workflows
- Hiring expectations are evolving

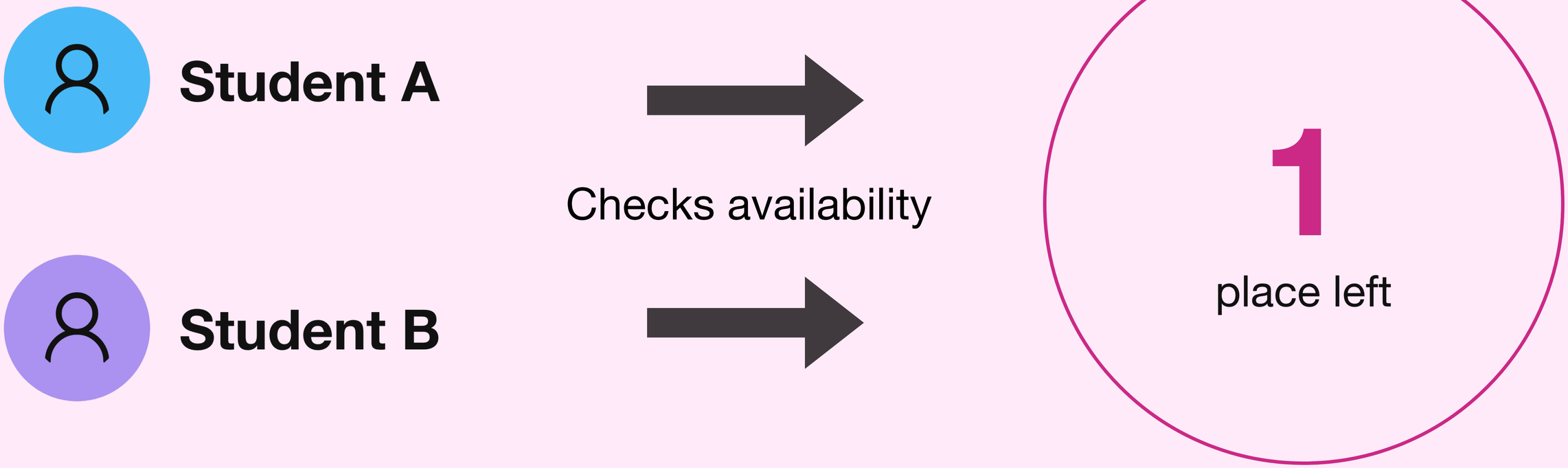
Software fundamentals + AI fluency

What fundamentals help you do

Foundation	Engineering question
Program execution and state	What happens as this program runs?
Data structures and algorithms	How should we represent and process this information?
Abstraction and interfaces	Where should this behavior belong?
Testing and correctness	What evidence would show this works?

Two students try to book against 1 remaining spot

The app works when you're testing it … now what?



Learn both together

Thoughtful AI practice gives you more material to dig deeper

Software fundamentals	Practice with AI
Understand the problem	Provide relevant context
Recognize possible failures	Ask for targeted help
Evaluate the reasoning	Review and test the result

The key is to ask: ***What am I trying to accomplish—and what capabilities do I need to get there?***

Ways to practice both

Three habits for learning and working with AI

Give useful context

Check the result

Practice regularly

One small project this week / weekend

Give useful context

Practice both

- Starting request: “Fix this crash with <error log>”
- More useful request: “The signup page crashes when the event list is empty. Here’s the error log <error log> and relevant code. Help me reproduce the failure and identify a small fix.

Check the result

Practice both

- Read the change
- Test the reported failure and nearby cases
- Explain why the fix works

Practice regularly

Practice both

- Choose a real task you can evaluate
- Try, ask for help, then explain the result
- Record one thing you learned

One small project

- Try one small project this coming week
- ChatGPT / Codex Dot
- Meta Muse

Questions!