Worked Example

Worked Example Booklet

A realistic project walkthrough, start to finish. When you get stuck, flip to the matching step.

Important Notes

This is a realistic-style demonstration, not a real standard case.

It is not an answer key and should not be copied.

Demo project: Clear Sight, helping older neighbors with weak eyesight read small print on phones and notices.

Worked Example

Initial Observation

At first, Lin Xiao's team also wanted to make an AI mini-app. The teacher pushed them to stop thinking about what to make and first look at who was struggling in the real world.

On the way home and around the neighborhood, they watched for a few days and noted several scenes.

What They Saw

Grandma Zhang stood at the parcel locker, squinting at a pickup code and waiting for help.

A water-shutoff notice had tiny print; several elders leaned close and still could not read smoothly.

Phone font size was already maxed out, but text inside notice images still would not enlarge.

What They Learned

A project does not start from a feature. It starts from one specific scene in the real world.

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Interview Record 1

They interviewed 3 people. This is one record. Notice that they wrote exact words.

Field	Notes
Interviewee and role	Grandma Zhang, 72, lives alone
Date and place	Saturday morning, by the neighborhood parcel locker
Observed	Held phone far away, squinted, checked again and again, finally asked a passerby
Core pain point	Cannot read small print, especially text inside images
Exact words	Those pickup-code numbers are too small. I keep misreading them.
How often	Pretty much every time I pick up a parcel.
Initial finding	The problem is not cannot use phone; it is text too small to see.

What They Learned

Interviews turn guesses into evidence. A real quote often carries the project's power.

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Interview Record 2

The second interview showed that the problem hurts both elders and community volunteers.

Field	Notes
Interviewee and role	Aunt Li, community volunteer
Date and place	Saturday afternoon, community activity room
Observed	Often stopped by elders asking what a notice says
Core pain point	Elders cannot read notices and repeatedly ask for help
Exact words	For a posted notice, seven or eight elderly folks a day come ask me to read it.
How often	Every time a new notice goes up.
Initial finding	Both sides feel the pain: elders cannot read it, volunteers read it again and again.

What They Learned

Before interviewing, they assumed elders could not use phones. After asking, they saw the real issue was small print.

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How Quotes Become Findings

How do you turn one sentence into a useful finding? Compare the lazy summary with the useful finding.

Quote	Lazy Summary	Useful Finding
Pickup-code numbers are too small; I keep misreading.	Elders have trouble with phones.	The pain is reading small print or image text, not basic phone operation.
Seven or eight elders a day ask me to read it.	Elders like to ask questions.	The same notice gets repeatedly asked about, so a read-it-to-me tool is missing.

What They Learned

A good finding digs the specific trouble out of the quote.

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The 5 Whys

They took Grandma Zhang's repeated misreading of pickup codes and dug down.

Step	Answer
Problem	Grandma Zhang keeps misreading the parcel pickup code.
Why 1?	The code text is too small.
Why 2?	It is in an image or SMS, and zooming blurs it.
Why 3?	Her eyesight has declined and small print is hard.
Why 4?	There is no simple tool to enlarge and read text inside images.
Root cause	Elders with weak eyesight need a simple tool that reads out and enlarges small print.

What They Learned

The first layer is text too small; by the fifth why, the missing tool becomes visible.

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Revising the Problem Statement

The first version is usually weak. See how they revised it.

Version 1: too broad

Elders find smartphones inconvenient. Problem: no specific person, cause, or focus.

Version 2: solution sneaks in

Elders in the neighborhood need a text-reading app. Problem: the app is a solution, not the problem.

Version 3: solid

Elders with weak eyesight, because many notices and pickup codes are small print that blurs when zoomed, struggle with understanding everyday information on their own, causing misreading, repeated requests for help, and anxiety.

What They Learned

A problem statement takes rounds to get right. If app or make a appears, cross it out.

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How Ideas Diverged

In 5 minutes they wrote 10 ideas without judging.

No.	Idea
1	Take a photo; AI reads out the text.
2	Show photo text huge and high contrast.
3	Read the pickup code aloud.
4	Turn small-print notices into a big-text list.
5	Teach elders how to adjust font size.
6	Translate notices into plain words.
7	Voice-broadcast today's community notices.
8	Big-print community notice board.
9	One tap to call a volunteer.
10	Use icons instead of text.

What They Learned

AI helped fill in some ideas, but circling the direction was their decision.

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How Features Were Traded Off

Core action: point at hard-to-read small print, take one photo, and immediately hear or see the enlarged content.

Must-have (max 3)	Later
Take a photo or choose an image	History, favorites
AI recognizes the text	Multi-language, dialect read-out
Big-text display and read aloud	Call volunteer, notice subscription

What They Learned

Without a help button, elders can still read the text. Without recognize + read aloud, nothing stands.

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How the MVP Was Decided

The first version does one thing: take one photo of hard-to-read print, then hear it and see it enlarged. History, favorites, help, and subscription all wait.

Step 1	Step 2	Step 3
Take a photo of small print	AI recognizes the text	Show big text and read it aloud

What They Learned

An MVP is not a watered-down version; it is the smallest version that validates the idea.

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Prototype Sketch

The same MVP could go three ways. Tight on time, they combined AI-demo and paper.

Path	What They Did
AI-demo	Sent a parcel-locker photo to image-reading AI and asked for big text and plain speech.
Build-it	Listed as a next step: a phone page with one-tap photo recognition and read-aloud.
Paper	Drew one big Take Photo button, then a big-text plus speaker result screen.

What They Learned

The key is not fancy technology; it is whether people understand it and can try it.

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Test Record

They had Grandma Zhang and 2 other elders each photograph a notice they could not read, while the team watched without explaining.

Who tried	Stuck where	Quote	Change
Grandma Zhang	Could not find Take Photo	Which one do I press?	Make the button bigger and center it
Grandpa Wang	Succeeded on first try	Hey, it really read it out!	Keep it
Grandma Chen	Read too fast	Can it read it again?	Add a big Read Again button

What They Learned

A button that seems obvious to you may not be obvious to a real user.

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Iteration

They fixed the biggest blocker first: the photo button. They made it as large as possible and placed it in the center. Read Again was useful, but it did not block the core action, so they logged it for later.

Try Again

After the fix, Grandma Zhang found the button right away and completed the task herself.

What They Learned

Feedback is not do everything. Fix the blocker to the core action first, change a little, and test again.

Worked Example

Final Showcase Storyline

They did not open with we made a text-reading app. They told a story.

Section	What They Said
Opening · a person	Grandma Zhang, 72, gets anxious every time she cannot read a parcel code.
Problem + evidence	They interviewed 3 people and showed quotes from Grandma Zhang and the volunteer.
Solution + demo	Clear Sight: take one photo, enlarge the text, and read it aloud.
Reflection + next steps	Testing showed the photo button was hidden; they centered it. Next: Read Again and call volunteer.

What They Learned

Open with a specific person, use quotes as evidence, and dare to name shortcomings.

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What AI Helped With vs What They Decided

This page echoes the handbook habit: stay in the driver's seat.

Step	AI Helped With	They Decided
Empathize	Suggested interview questions	Whom to ask, how to follow up, which quote to record
Define	Smoothed the problem statement	Choosing small print as the issue and confirming the root cause
Ideate	Added extra ideas	Circling photo -> read out
Prototype	Read text inside an image	What v1 does and which path to take
Test	Made a test log sheet	Real people trying, noticing the hidden button, deciding the fix
Showcase	Outlined the talk	Using their own words and opening with Grandma Zhang

What They Learned

AI saved time, added ideas, and read image text. The important judgments were theirs.