

The Thinking Canvas

Group no. _____ Startup _____

Members _____

12 min Fill the boxes in order, 1 → 4. No AI tools yet. Each box uses one thinking lens. **Box 4 becomes your build prompt.**

1 • SYSTEM systems thinking • 3 min

What keeps the problem in place? Who else is involved?

2 • USER design thinking • 3 min

Point of view, then “How might we...?”

POV

How might we...?

3 • HYPOTHESIS Lean UX • 2 min • the key box

Your riskiest assumption, written so a test can prove it wrong.

Signal we'll see in the peer test: _____

4 • SLICE computational thinking • 4 min

Break the core job into steps. Circle the 3 that test box 3.

①	_____	④	_____
②	_____	⑤	_____
③	_____	⑥	_____

Rule: If _____ then _____

NO IDEA YET? PICK ONE, THEN MAKE IT YOURS

Quick-start idea bank

25 starting points in 10 problem areas. Choose one, then change at least one thing to fit a real user you know. Names are placeholders.

Campus life & facilities

BilikKu · Find and book a free discussion room before you travel in.

RosakReport · Report a broken facility with a photo and track the repair.

Food & cafés

RehatKu · Pre-order café food so it's ready when your 10-minute break starts.

BajetMakan · Find meals near you that fit today's budget.

Gerai Live · See which stalls are open and how crowded they are.

Transport & parking

TumpangUKM · Match off-campus students with drivers going the same way.

ParkirKu · See which car park still has space before you drive in.

BasTrack · Live campus bus arrival times at every stop.

Study & assignments

DeadlineKu · Every assignment deadline from every course on one screen.

GroupFair · Split group-assignment tasks so everyone sees who does what.

TutorRakan · Book a 30-minute session with a senior who aced the subject.

Health & wellbeing

Giliranklinik · Take a clinic queue number online and wait anywhere.

GymBuddy · Find a workout session and someone to go with.

Money & part-time jobs

GigKampus · Short part-time gigs near campus that fit your free hours.

DuitCukup · Log spending in seconds and see what's left this month.

BukuRakan · Buy and sell used textbooks with seniors.

Kolej / hostel living

DobiQ · Laundry-machine queue for your kolej block, with a "your turn" alert.

AduanKolej · Report a room problem with a photo and see the repair status.

Clubs & events

AcaraKu · Campus events matched to your interests, with one-tap sign-up.

KalendarKelab · A shared calendar so clubs stop booking the same night.

Environment & Tasik Chini

ChiniStay · Book Tasik Chini homestays and guided tours in one place.

TongBetul · Search any item and see which recycling bin it goes in.

BersihBersama · Join cleanups and see what everyone collected together.

Local community & small businesses

KedaiOnline · A one-page order list for a small stall, so no phone order is missed.

KhidmatBangi · Find and book trusted local services rated by students.

Option bank

1 • SYSTEM It keeps happening because...

☐ there is no shared schedule or live status · ☐ information only spreads by word of mouth · ☐ rules are walk-in, first come first served · ☐ everyone arrives at the same peak hour · ☐ payment is cash only

Who else is involved?

☐ other students · ☐ kolej staff · ☐ the faculty office · ☐ lecturers · ☐ student representatives (MPP) · ☐ café or stall owners · ☐ security / transport unit

2 • USER [User] needs a way to [need] because [why it's hard today].

User: ☐ first-year · ☐ final-year · ☐ off-campus · ☐ international · ☐ OKU (with disabilities) · ☐ commuting · ☐ postgraduate · ☐ kolej residents

Need: ☐ save time on a daily task · ☐ find information quickly · ☐ coordinate with other people · ☐ book or reserve something · ☐ keep track of something

Why it's hard: ☐ the current way is slow and manual · ☐ information is scattered in many places · ☐ nobody knows what is happening right now

HMW: "How might we help [user] [need] without [today's hassle]?"

3 • HYPOTHESIS We believe [user] will [behaviour] because [reason]. We'll know when [signal].

Behaviour: ☐ use the app instead of the current way · ☐ come back the next day · ☐ recommend it to a friend · ☐ pay a small fee for it

Reason: ☐ it is faster than the current way · ☐ everything is in one place · ☐ they can see what is happening right now

Signal (pick one you can see in 2 minutes):

☐ 2 of 3 testers complete the core task in under 30 seconds · ☐ 2 of 3 say they would use it again this week · ☐ 2 of 3 pick our app over the way they do it now · ☐ at least 1 tester taps the paid or premium option · ☐ all testers find the main button without help

4 • SLICE Steps most MVPs share (circle 3 that test box 3)

Open the app → choose what they need → see the options → confirm their choice → see a confirmation → see their history

Rule patterns:

If it is full or already taken, then suggest the next free one.

If no one responds within 10 minutes, then notify the user and show a backup option.

If the total goes over the user's budget, then warn them before they confirm.

If it starts in 10 minutes, then send a reminder.

Prompt card A • look & data

Colours: ☐ teal and purple · ☐ UKM red and blue · ☐ orange and navy · ☐ green and earth tones · ☐ pastel pink and mint · ☐ black and white, high contrast

Language: ☐ English · ☐ Bahasa Melayu

1 • SYSTEM systems thinking**ASK**

What happens again and again? What rule, habit or set-up causes it? Who else gains or loses?

STARTER

It keeps happening because _____. _____ and _____ are also involved.

EXAMPLE • BILIKKU

Rooms are walk-in only and there is no shared schedule, so groups hold rooms. Lab staff and other student groups are part of the system.

2 • USER design thinking**ASK**

Who exactly? What are they trying to get done (a verb, not a feature)? Why is it hard today?

STARTER

_____ needs a way to _____ because _____.
How might we help them _____ without _____?

EXAMPLE • BILIKKU

Off-campus final-year students need a way to secure a room before travelling in, because walk-ins at 2 pm fail. How might we help them book from home without racing to the faculty?

3 • HYPOTHESIS Lean UX**ASK**

What must be true, or the idea dies? If it were true, what would a tester do in 2 minutes?

STARTER

We believe _____ will _____ because _____.
We'll know we're right when _____.

EXAMPLE • BILIKKU

We believe students will book online instead of walking in, because they can see free slots. We'll know we're right when 2 of 3 testers book a slot in under 30 seconds.

4 • SLICE computational thinking**ASK**

List every step of the core job. Which familiar app works like this? Which 3 steps test box 3? What rule must the app follow?

STARTER

Steps: 1 _____ 2 _____ 3 _____ 4 _____ 5 _____.
Circle 3. If _____, then _____.

EXAMPLE • BILIKKU

Open → see free slots → tap a slot → enter name → see My bookings. Circled: see slots, reserve, My bookings. If a slot is taken, grey it out and suggest the next free one.

The 4-part build prompt

Fill each bracket from your Thinking Canvas, then paste the whole prompt into **aistudio.google.com** → **Build**. Short, specific prompts generate faster.

1 • ROLE & GOAL

← canvas box 2

Build a working web app MVP called [NAME] for [USER] who needs to [NEED].

2 • CORE FLOW

← box 4 steps + rule

The user opens the app, [STEP 1], then [STEP 2], and finally sees [OUTCOME]. Rule: if [CONDITION], then [BEHAVIOUR].

3 • FEATURES

← box 4, circled

Only these 3, nothing else: 1. [FEATURE 1] 2. [FEATURE 2] 3. [FEATURE 3]

4 • LOOK & DATA

← box 1

Mobile-first, clean and friendly, colours [X]. Pre-fill with 15 realistic sample records for [PEOPLE IN THE SYSTEM] (names, kolej, prices in RM). Do not ask for real personal data. Language: [EN / BM].

Box 3 is not prompted. It becomes your peer test at 11.50: did the signal happen?

WORKED EXAMPLE • THE LIVE DEMO

ROLE & GOAL: Build a working web app MVP called BilikKu for off-campus final-year FTSM students who need to secure a discussion room before travelling in.

CORE FLOW: The student opens the app, sees today's free slots by room, taps one to reserve it with their name, then sees it under "My bookings". Rule: if a slot is taken, grey it out and suggest the next free slot.

FEATURES (only these 3): 1. Availability grid for 6 rooms, 8 am-6 pm 2. Reserve a 1-hour slot with a name 3. "My bookings" list with cancel

LOOK & DATA: Mobile-first, teal and purple. Realistic sample bookings by student groups. Language: English.

One change per prompt



→ repeat. While it generates, do your role’s job.

FIX	When I click [X], [Y] happens. It should [Z]. Fix only this.
CHANGE	Simplify [SCREEN]: keep [A] and [B], remove [C].
ADD	Add one feature: [FEATURE]. Change nothing else.
WOW	Use Gemini inside the app so that [AI FEATURE]. (Sprint 2 only · submit by 11.59)
POLISH	Add a landing screen with the tagline “[TAGLINE]”.

WOW IDEAS

- ...suggests a weekly meal plan from the user’s budget in RM.
- ...summarises a pasted lecture note into 5 points in BM.
- ...reads a receipt photo and fills in the expense form.
- ...recommends the best free slot from a timetable.

WHEN IT MISBEHAVES

- Over 5 min: refresh, resend a shorter prompt.
- Fails twice: same prompt in a backup tool.
- Same error 2 loops: undo, split the change.
- Out of credits: next member signs in.

SCRIBE · END OF SPRINT · PASTE INTO ANY CHAT ASSISTANT

Here is our app: [3 FEATURES]. Write a 20-second demo script a student can read while clicking through it, ending with one sentence on what is real and what uses sample data.

OUR PROMPT LOG

Peer-test sheet

Our group _____

Tester from group _____

The tester gets 2 minutes and **no explanation**. The team stays silent, watches, and writes down every hesitation.

Moment	What the tester did or said	Where they hesitated
First 10 seconds		
Trying the core job		
Got stuck at		
What surprised us		

ASK THE TESTER AT THE END

1. What do you think this app is for? _____
2. Could you do our 30-second test? ☐ Yes ☐ With help ☐ No
3. Would you use it again? Why? _____

Team only • did the canvas box 3 signal happen? ☐ Confirmed ☐ Rejected ☐ Unclear

What we saw _____

Our #1 fix for Sprint 2 _____

REFLECT • 12.25 • ONE LINE EACH

System

What did the tester show us about the system?

User

Did they behave the way we believed?

Hypothesis

Confirmed, rejected or unclear, and why?

Next • Double Diamond

Diverge (redefine the problem) or converge (build the next slice)?

Mentor card

~3 min per group per lap
11.12 - 12.10

ASK EVERY GROUP

1. Who exactly is your user, and what one job does the app do for them?
2. What can that user do in the first 30 seconds?
3. What is real, and what is faked (sample data, manual, mocked)?

WATCH FOR

Staring at the progress bar → point to the roles.
Prompt longer than the template → split it.
More than 3 features by 11.32 → back to box 4.
Real names, phone or IC numbers → stop, use sample data.

SCAFFOLD, THEN FADE

Answer a question with a question: “Which step of box 4 isn’t working?” “Does that help test box 3?”
Ask before you hand out a hint card; take it back after.
Name the lens they used: “that was abstraction”.

SPEED-DEMO VERDICT • 12.10 • 0-2 EACH, 8 = STRONG

Criterion	0	1	2
Problem in 10 s	Unclear	Clear but generic	One specific user and pain
Core job works live	Breaks	Works with help	Start to finish
Honest scope	Pretends	Vague	States real vs mocked
User evidence	None	Opinion only	Peer-test result

SCORE SHEET

Group	Problem	Works	Scope	Evidence	Total	One strength • one judge question