FLUTTERFEVER

FLUTTER WITH AI

Build intelligent Flutter apps with prompts, tools, streaming, RAG and safe architecture.

```
final ai = FlutterAiClient();
final answer = await ai.ask(
  prompt: userMessage,
  tools: [searchDocs, getOrders],
);

stream.listen((token) => render(token));
```

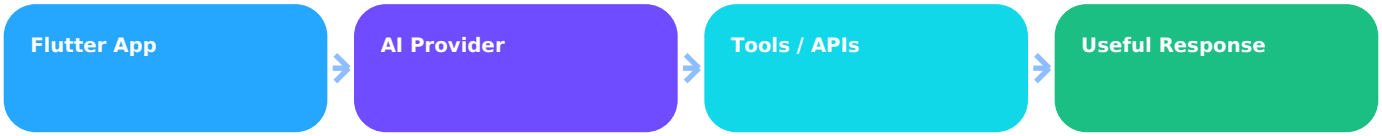
Prompts | Streaming | Tools | RAG | Agents | Safety

flutterfever.com

01. Why Flutter with AI matters

FOUNDATION

AI is not a chat bubble feature. In production apps, AI becomes an interaction layer over your UI, data, services and business workflows.



The best Flutter AI apps do not simply send a prompt and display text. They understand intent, stream partial responses, call approved tools, read trusted app data, and protect user privacy. Flutter is a strong fit because it already gives you fast UI rendering, predictable state management and cross-platform reach.

For beginners, start with one safe use case: summarize a note, generate a search query, explain a dashboard, or help the user fill a form. Then move to tool calling, RAG, voice, image input and agents once your architecture is clean.

What to remember

- AI feature = UI + State + Provider + Safety + Backend.
- Start small: one model call, one loading state, one fallback.
- Do not expose every app action to AI from day one.

EXAMPLE

```
User says: "Find my last order"
AI selects: getLatestOrder()
App validates: authenticated user
Backend returns: real order data
AI explains: friendly response
```

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

Create one screen that sends a prompt, shows streaming state, handles errors and logs a request ID.

AVOID THIS

Do not create a generic AI feature with no clear workflow. AI should solve a user problem, not just decorate the app.

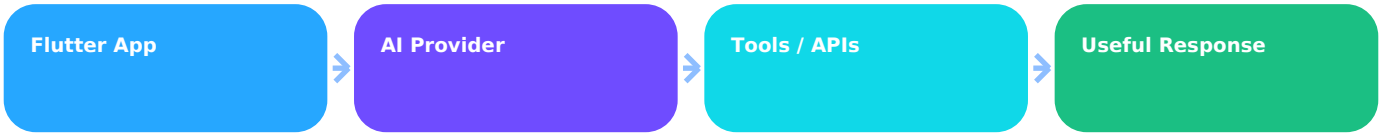
Real app example

Add an AI button to an existing screen: explain selected error, summarize selected note, or find the right setting.

02. The Flutter AI stack

ARCHITECTURE

Think in layers. A clean stack makes provider changes easier and keeps model logic away from widgets.



A production stack has at least five parts: chat or feature UI, state controller, AI provider, tool router and backend. The provider could use Gemini, OpenAI, Firebase AI Logic, a local model or a custom server. The UI should not know the provider details.

This separation also helps cost control. You can cache responses, test tools without a model, and swap providers when pricing or SDK support changes.

FLUTTER CONNECTION

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What to remember

- UI renders state, it should not build raw AI requests.
- Repository services should own REST calls and JSON parsing.
- Tool router decides which approved action can run.

EXAMPLE

```
Flutter UI -> Controller -> AiProvider
AiProvider -> ToolRouter -> Repository
Repository -> REST API -> Database
Result -> Model -> UI
```

Interview angle

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03. Choose the right first AI feature

PRODUCT

Good AI features reduce user effort. Bad AI features add cost without solving a workflow.

A strong first AI feature has clear input, predictable output and low risk. Examples: content summarization, search assistant, form helper, FAQ assistant, build-error explainer or report generator. Avoid payment, deletion or account-changing actions until your safety design is mature.

Ask one question before building: what action becomes easier because AI exists? If the answer is only "it feels modern", the feature is probably weak.

FLUTTER CONNECTION

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What to remember

- Low-risk: explain, summarize, suggest, classify.
- Medium-risk: search private data with authorization.
- High-risk: change money, delete data, update accounts.

EXAMPLE

```
Bad:  "AI chatbot" with no app context
Good: "Ask AI to explain this error log"
Best: "AI finds the broken dependency and suggests the exact fix
```

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04. Basic prompt design for Flutter developers

PROMPTS

Prompts should be treated like product requirements: clear role, task, data, constraints and output format.

A Flutter AI prompt is not just the user message. Your app often adds system instructions, screen context, selected user data and formatting rules. Keep prompts short but precise. Tell the model what it can do, what it cannot do, and how it should respond.

For UI features, define the desired response shape. If the output feeds a widget, prefer structured JSON or a small schema. If it is shown to humans, add tone and length constraints.

FLUTTER CONNECTION

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What to remember

- Use explicit output rules when UI needs predictable rendering.
- Separate developer instructions from user text.
- Never allow user text to override safety or tool rules.

EXAMPLE

```
System: You are a helpful Flutter app assistant.
Task: Explain the selected error in simple steps.
Context: User is a beginner.
Output: 3 bullets + one code fix.
User: {error_log}
```

Interview angle

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05. HTTP and JSON for AI apps

NETWORK

Most AI features eventually become HTTP requests with JSON bodies and JSON responses.

Flutter AI integration requires clean networking. You send messages, settings, tool definitions, context and metadata. You receive text, structured outputs, tool calls, tokens, errors or streaming chunks.

Keep API models typed. Do not pass raw maps through the whole app. Decode once, validate once, then give widgets clean objects.

FLUTTER CONNECTION

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What to remember

- Prefer typed request and response models.
- Handle 401, 403, 429 and 500 separately.
- Log request IDs, not sensitive prompt data.

EXAMPLE

```
class AiMessage {
  final String role;
  final String content;
  const AiMessage(this.role, this.content);

  Map<String, dynamic> toJson() => {
    'role': role,
    'content': content,
  };
}
```

Interview angle

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06. Safe API key architecture

SECURITY

API keys inside mobile apps should be treated as exposed. Production apps need a security boundary.

A compiled app can be inspected. If you put unrestricted AI provider keys in Flutter source code, assets or .env files shipped with the app, users can eventually extract them. The safer design is Flutter -> your backend -> AI provider.

Client-side SDKs can be useful for prototypes or controlled Firebase flows, but sensitive workflows, billing control and private tools usually belong behind your backend.

FLUTTER CONNECTION

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What to remember

- Use backend proxy for provider secrets and tool execution.
- Add rate limits, auth checks and usage quotas.
- Store only the minimum conversation data you need.

EXAMPLE

```
Flutter App
  -> Authenticated request
  -> Your Backend
  -> AI Provider
  -> Approved Tool
  -> Database / API
```

Interview angle

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Build practice

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07. Flutter AI Toolkit and provider abstraction

SDK

Official Flutter AI resources now focus on making chat and generative features easier to add while keeping providers swappable.

Flutter documents an AI Toolkit for adding intelligent chat experiences, including provider-oriented integrations. Google Firebase AI Logic also provides Flutter-friendly paths for Gemini-powered features. OpenAI supports tools/function calling for connecting models to app systems.

Even when a package gives ready widgets, keep business logic separate. Widgets display messages; services decide how prompts, tools and safety rules work.

FLUTTER CONNECTION

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What to remember

- Use toolkit widgets for speed, not for bypassing architecture.
- Wrap every provider in your own AiProvider interface.
- Keep UI independent from provider-specific response shapes.

EXAMPLE

```
abstract class AiProvider {
  Stream<AiChunk> streamReply(AiRequest request);
  Future<AiResult> complete(AiRequest request);
}
```

Interview angle

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08. State management for AI screens

STATE

AI screens have more states than normal forms. Model them explicitly.

A chat screen can be idle, sending, streaming, waiting for tool result, failed, cancelled or completed. If you model everything as a single boolean loading flag, bugs appear quickly.

Use Riverpod, Bloc, GetX, ValueNotifier or your preferred pattern, but keep states visible and testable. A predictable state model prevents duplicate sends and stale streaming text.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Use enum states instead of many unrelated booleans.
- Disable send only when the current flow cannot accept input.
- Always support cancellation for long model calls.

EXAMPLE

```
enum AiStatus {
  idle,
  sending,
  streaming,
  callingTool,
  failed,
  completed,
}

class AiState {
  final AiStatus status;
  final List<AiMessage> messages;
  final String? error;
}
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

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09. Streaming responses

STREAMING

Streaming makes AI feel fast. Instead of waiting for the full response, your UI renders tokens as they arrive.

Streaming is useful for long answers, code explanation, report generation and voice-like experiences. Flutter can render partial text smoothly, but you must avoid rebuilding the entire screen on every token if performance drops.

Buffer small token chunks and update at a controlled cadence. Keep the scroll position predictable and preserve copy/share actions even while text is streaming.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Use StreamBuilder carefully; avoid rebuilding heavy parents.
- Debounce UI updates if token frequency is high.
- Stop stream cleanly when the user leaves the screen.

EXAMPLE

```
await for (final chunk in aiProvider.streamReply(request)) {
  controller.appendToLastAssistantMessage(chunk.text);
  if (chunk.isDone) break;
}
```

Interview angle

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10. Structured output

OUTPUT

When AI output becomes UI data, ask for structure instead of paragraphs.

If you need to render cards, chips, filters, forms or charts, free-form text is fragile. Structured output gives your Flutter app predictable fields. Validate the response before showing it.

Use JSON schemas or your own strict parser depending on provider support. Keep the schema small. The bigger the schema, the more chances for mismatches.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Use structured output for UI components and workflows.
- Validate every field before trusting it.
- Show a fallback when parsing fails.

EXAMPLE

```
{
  "title": "Fix Gradle error",
  "steps": ["Check JDK", "Clean build", "Update plugin"],
  "severity": "medium"
}
```

Interview angle

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Build practice

Create one screen that sends a prompt, shows streaming state, handles errors and logs a request ID.

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Real app example

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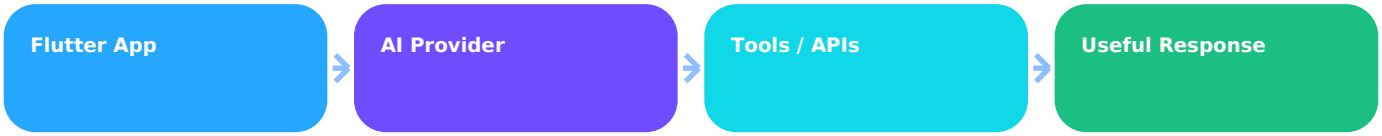
11. Function calling / tools

TOOLS

Tools let the model request approved app actions instead of only answering with text.



A tool is a safe, named capability: getOrders, searchDocs, checkInventory, openProfile, calculatePrice or createTicket. The model selects a tool and provides arguments; your app or backend validates and executes it.

Tool calling is powerful because it connects AI to real app data. It is also risky if you expose destructive actions without confirmation.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Read tools can often run after auth.
- Write tools require confirmation and stronger checks.
- Never trust AI-generated user IDs or permissions.

EXAMPLE

```
User: Show orders from yesterday
AI: getOrders(date: "2026-08-18")
App: validates date + user token
API: returns real orders
AI: explains results in app
```

Interview angle

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Build practice

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Real app example

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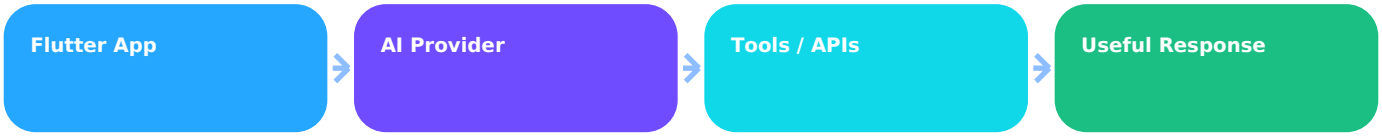
12. Designing a ToolRouter

TOOLS

A ToolRouter keeps AI actions organized and prevents random model output from reaching business logic.



Do not put tool execution inside the widget. Create a router that maps known tool names to repository methods. Unknown tools should fail safely. Sensitive tools should return a confirmation requirement.

Each tool should have input validation, authorization expectations, timeout behavior and structured errors.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- One router, many tools.
- Small tool names beat generic catch-all tools.
- Return errors as data so the model can recover.

EXAMPLE

```
Future<ToolResult> execute(ToolCall call) async {
  switch (call.name) {
    case 'searchDocs':
      return docs.search(call.args['query']);
    case 'getOrders':
      return orders.byDate(call.args['date']);
    default:
      return ToolResult.error('UNKNOWN_TOOL');
  }
}
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

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Real app example

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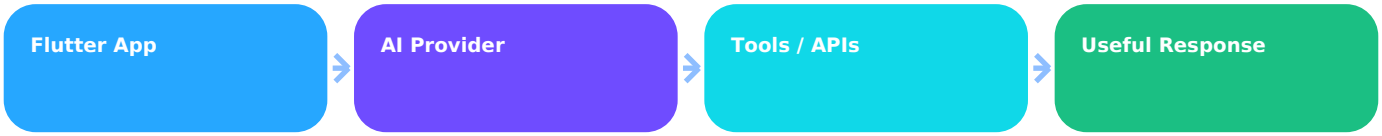
13. RAG for Flutter apps

RAG

RAG means retrieval augmented generation: find trusted content first, then let the model answer from it.



Use RAG when answers should come from your docs, policies, product catalog, app help center or uploaded files. Instead of putting every document into a prompt, retrieve the most relevant chunks and cite them in the response.

For mobile apps, RAG usually belongs on the backend because embedding search, indexing and document permissions need careful handling.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Chunk documents by meaning, not random length only.
- Filter results by user permissions before generation.
- Prefer citations or source labels in user-facing answers.

EXAMPLE

```
Question -> embedding search -> top chunks
Top chunks + prompt -> model answer
Answer -> citations -> Flutter UI
```

Interview angle

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Real app example

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14. Embeddings and semantic search

SEARCH

Embeddings turn text into vectors so similar meanings can be searched, not only exact words.

Semantic search lets users ask in natural language. A query like "payment not updated" can match documents about settlement delays, transaction reconciliation or payout status even if the exact words differ.

Keep metadata with each chunk: document ID, title, section, permission, updated date and URL. Without metadata, retrieved content becomes hard to trust.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Store chunk text and metadata together.
- Rebuild indexes when docs change significantly.
- Do not retrieve private chunks for the wrong user.

EXAMPLE

```
User query -> vector
Documents -> vectors
Nearest vectors -> context
Context -> model response
```

Interview angle

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Build practice

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Real app example

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15. AI memory in apps

MEMORY

Memory should be designed, not accidental. Decide what the app remembers and why.

There are different types of memory: current conversation context, user preferences, saved profile facts, recent app activity and long-term project data. Do not keep everything forever.

Give users control. Let them clear AI context, disable personalization or view important saved preferences. Sensitive data needs extra care and sometimes should not be stored at all.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Short-term memory: messages in this session.
- Long-term memory: stable user preferences.
- Never use memory to bypass privacy or consent.

EXAMPLE

```
Good memory: prefers concise code examples
Risky memory: stores private documents forever
Better: store preference + allow user deletion
```

Interview angle

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Real app example

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16. Multimodal Flutter AI

MULTIMODAL

AI features can read text, images, screenshots, voice and documents. Flutter is well suited for building these interfaces.

A user might upload an error screenshot, speak a prompt, scan a bill, attach a PDF or take a product photo. Your app should convert each input into a clean model request and show useful preview states before sending.

Large files should be compressed, resized or uploaded through your backend. Always explain what is being sent to the AI provider.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Show previews before upload.
- Compress images where possible.
- Ask permission before sending personal files to AI.

EXAMPLE

```
Image input: screenshot.png
Prompt: Explain this build error
Model: reads visual text + context
Output: exact fix steps
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

Create one screen that sends a prompt, shows streaming state, handles errors and logs a request ID.

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Real app example

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17. Voice AI in Flutter

VOICE

Voice features combine speech-to-text, model response and sometimes text-to-speech.

Voice is useful when typing is slow, users are working hands-free or the app is accessibility-focused. But it must be clear when the microphone is listening and what text was captured.

For production, add push-to-talk, transcript editing, interruption support and confirmation before important actions.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Show live transcript when possible.
- Let users edit before sending.
- Never execute risky tools from voice without confirmation.

EXAMPLE

```
Mic -> speech-to-text -> prompt
Prompt -> AI -> response text
Response -> optional text-to-speech
```

Interview angle

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Real app example

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18. AI UX patterns

UX

AI UX is not only a chat screen. Sometimes the best AI feature is a small button inside the existing workflow.

Common patterns include Explain, Summarize, Improve, Generate, Ask about this screen, Smart search, Fill form, Suggest next step and Troubleshoot. Choose the smallest UI that solves the problem.

When the AI response can be wrong, make the interface reviewable. Show source data, preview changes and keep users in control.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Inline AI buttons often beat generic chatbots.
- Use progress labels: thinking, searching, checking.
- Add copy, retry, regenerate and report issue actions.

EXAMPLE

```
Examples:
- Explain this error
- Rewrite this message
- Find matching products
- Summarize today dashboard
```

Interview angle

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Build practice

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Real app example

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19. Error handling and fallbacks

RELIABILITY

AI failures should feel like normal product states, not broken magic.

Your app must handle provider downtime, rate limits, bad JSON, tool errors, timeout, cancelled streams and safety refusals. Each needs a clear user message and a recovery path.

Never show raw stack traces to users. Log them with request IDs and show human-readable guidance.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- 429: ask user to retry later or reduce usage.
- Timeout: allow retry and keep draft prompt.
- Parse error: use fallback text response if safe.

EXAMPLE

```
try {
  final result = await ai.complete(request);
} on RateLimitException {
  showMessage('AI is busy. Try again soon.');
} on TimeoutException {
  showRetry();
}
```

Interview angle

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20. Cost control

COST

AI cost is a product engineering problem. Design before traffic arrives.

Costs grow through token usage, long prompts, repeated context, high model selection, image inputs, tool loops and retries. Start with limits and telemetry from day one.

Use cheaper models for simple classification, caching for repeated prompts and server-side quotas per user. Show usage feedback for premium features.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Cap max tokens and tool iterations.
- Cache stable answers such as help docs.
- Use model routing: simple task -> smaller model.

EXAMPLE

```
Cost drivers:
Prompt length + output length + model choice
+ image/audio inputs + retries + tool loops
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

Create one screen that sends a prompt, shows streaming state, handles errors and logs a request ID.

AVOID THIS

Do not create a generic AI feature with no clear workflow. AI should solve a user problem, not just decorate the app.

Real app example

Add an AI button to an existing screen: explain selected error, summarize selected note, or find the right setting.

21. Testing AI features

TESTING

AI features need normal tests plus scenario tests.

Unit test your prompt builders, JSON parsers, tool router, error mapping and state transitions. Use fake providers to simulate streaming chunks, tool calls and malformed outputs.

Also create scenario tests: beginner prompt, vague prompt, malicious prompt, long prompt, wrong language, empty response and network failure.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Fake the provider in tests.
- Test invalid tool arguments.
- Snapshot important prompt templates.

EXAMPLE

```
test('tool router rejects unknown tools', () async {
  final result = await router.execute(ToolCall('deleteAll', {}));
  expect(result.code, 'UNKNOWN_TOOL');
});
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

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Real app example

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22. Security checklist

SECURITY

AI does not reduce the need for normal security. It increases the importance of it.

Treat model output as untrusted input. Validate tool arguments. Keep secrets on the backend. Sanitize logs. Add permission checks inside business services, not only in prompts.

For write actions, show confirmation. For sensitive data, minimize what you send. For children, financial, medical or legal contexts, add extra review and policy controls.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- No raw SQL tools.
- No unrestricted URL fetch tool.
- No hidden destructive actions.
- No provider secrets in client code.

EXAMPLE

```
Tool request -> validation -> auth check
-> permission check -> confirmation if risky
-> execution -> structured result
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

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Real app example

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23. Local AI and on-device models

LOCAL AI

On-device AI can improve privacy and offline behavior, but it has tradeoffs.

Local models can be useful for classification, summarization, autocomplete and private offline helpers. However, mobile devices have memory, thermal and battery limits. Quality may be lower than cloud models.

A hybrid strategy often works best: local AI for simple/private tasks, cloud AI for complex reasoning or larger context.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Measure memory, latency and battery impact.
- Use background isolates for heavy work where suitable.
- Tell users when data stays on device.

EXAMPLE

```
On-device: privacy + offline + low network cost
Cloud: larger models + better reasoning + easier updates
Hybrid: route by task
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

Create one screen that sends a prompt, shows streaming state, handles errors and logs a request ID.

AVOID THIS

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Real app example

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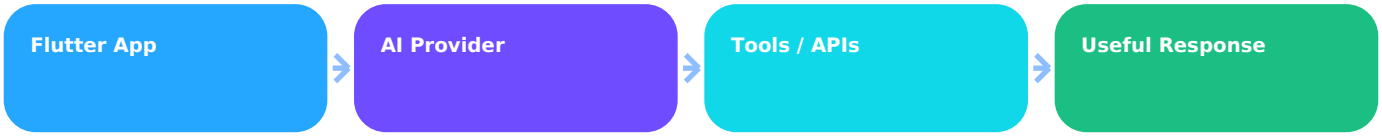
24. AI agents in Flutter

AGENTS

An agent is a model-driven loop that can plan, call tools and continue until a task is complete.



Agents can solve multi-step tasks: search docs, compare results, call an API, draft a response and ask for confirmation. But they need strict boundaries: maximum turns, approved tools, audit logs and user confirmations.

For most Flutter apps, start with tool calling before building autonomous agents.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Limit tool iterations.
- Show what the agent is doing.
- Pause before irreversible actions.

EXAMPLE

```
Goal -> plan -> tool call -> result
-> next step -> final answer
Guardrails: max steps + permissions + confirmation
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

Create one screen that sends a prompt, shows streaming state, handles errors and logs a request ID.

AVOID THIS

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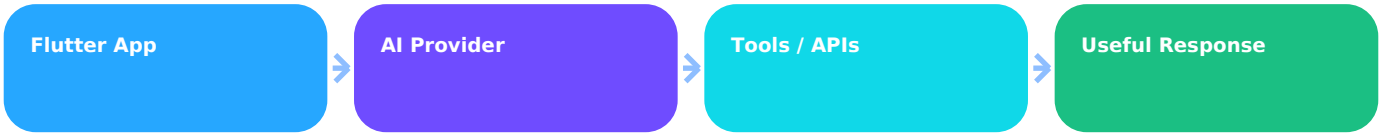
Real app example

Add an AI button to an existing screen: explain selected error, summarize selected note, or find the right setting.

25. Mini project: AI support assistant

PROJECT

Build a small AI assistant that answers app help questions and creates a support ticket when needed.



This project teaches the core production flow without dangerous actions. The assistant searches help docs, answers with a concise explanation and offers to create a ticket if the user still needs help.

The key is to separate UI, provider, retrieval and ticket tools.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Screen: chat + sources + create ticket button.
- Tools: searchHelpDocs, createSupportTicket.
- Safety: ticket creation requires confirmation.

EXAMPLE

```
1. User asks a help question
2. RAG searches help docs
3. AI answers with source labels
4. User taps Create ticket
5. Backend creates ticket
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

Create one screen that sends a prompt, shows streaming state, handles errors and logs a request ID.

AVOID THIS

Do not create a generic AI feature with no clear workflow. AI should solve a user problem, not just decorate the app.

Real app example

Add an AI button to an existing screen: explain selected error, summarize selected note, or find the right setting.

26. Flutter code structure for AI features

CODEBASE

A clear folder structure keeps the AI module understandable as it grows.

Group files by feature, not by generic type only. Keep presentation, domain and data layers separate. Repositories should not depend on widgets. Tool definitions should live near the AI domain layer.

Keep provider-specific code isolated so that changing Gemini, OpenAI or a local provider does not rewrite your screens.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- presentation: widgets and controllers.
- domain: models, tool definitions, states.
- data: provider implementation and repositories.

EXAMPLE

```
features/ai_assistant/
  presentation/
  domain/
    ai_state.dart
    ai_tool.dart
  data/
    ai_provider.dart
    tool_router.dart
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

Create one screen that sends a prompt, shows streaming state, handles errors and logs a request ID.

AVOID THIS

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Real app example

Add an AI button to an existing screen: explain selected error, summarize selected note, or find the right setting.

27. Production launch checklist

LAUNCH

Before release, test the boring parts: limits, permissions, failure states and monitoring.

A polished demo is not the same as a production AI feature. You need analytics, error reporting, prompt/version tracking, cost limits, feedback collection and a rollback plan.

Launch to a small percentage of users first. Compare task success, response quality and support issues before scaling.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Add kill switch for risky AI features.
- Monitor cost per active user.
- Track failure reasons and tool success rate.
- Keep prompt versions in source control.

EXAMPLE

```
Launch checklist:
[ ] auth checks
[ ] rate limit
[ ] abuse logging
[ ] fallback UI
[ ] feedback action
[ ] cost dashboard
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

Create one screen that sends a prompt, shows streaming state, handles errors and logs a request ID.

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Real app example

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28. Quick reference

CHEATSHEET

Use this page as a short mental checklist while building Flutter AI features.

A good AI feature has a clear user problem, small prompt surface, predictable state, validated output, safe tool execution, visible fallback and measurable value.

When in doubt, reduce scope. One reliable AI action is better than a chatbot that can theoretically do everything but fails in real use.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Prompt: role + task + context + output format.
- State: idle, sending, streaming, tool, failed.
- Tools: small, named, validated, authorized.
- Security: backend for secrets and sensitive actions.

EXAMPLE

```
Core formula:
Great AI Flutter app = useful workflow
+ clean architecture + safe tools
+ fast UI + honest fallbacks
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

Create one screen that sends a prompt, shows streaming state, handles errors and logs a request ID.

AVOID THIS

Do not create a generic AI feature with no clear workflow. AI should solve a user problem, not just decorate the app.

Real app example

Add an AI button to an existing screen: explain selected error, summarize selected note, or find the right setting.

29. References and further learning

REFERENCES

Use official sources as the baseline, then build your own architecture around them.

Flutter official AI documentation describes the Flutter AI Toolkit and approaches for adding intelligent chat experiences with Gemini/Firebase integrations. Firebase AI Logic documents Gemini-powered features for mobile and web apps, including function calling and grounding. OpenAI documentation explains function calling/tools as a way for models to interact with external systems and your app data.

Treat these docs as moving targets. AI SDKs and APIs evolve quickly, so always verify the current package and security recommendations before publishing a tutorial or production build.

FLUTTER CONNECTION

In Flutter, this concept becomes real through state management, async code, reusable services and careful UI feedback. Always design the app behavior before selecting a model.

What to remember

- Flutter AI docs: flutter.dev/ai
- Firebase AI Logic: firebase.google.com/docs/ai-logic
- OpenAI function calling: developers.openai.com/api/docs/guides/function-calling
- OpenAI tools: developers.openai.com/api/docs/guides/tools

EXAMPLE

```
Official docs to check before production:
- Flutter AI Toolkit
- Firebase AI Logic / Gemini
- OpenAI Responses API and tools
- Your platform privacy and app store rules
```

Interview angle

Explain not only the package or API. Explain the production concern: state, safety, cost, testing and user control.

Build practice

Create one screen that sends a prompt, shows streaming state, handles errors and logs a request ID.

AVOID THIS

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Real app example

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KEEP BUILDING SMARTER

Flutter with AI is not only about prompts. It is about building fast, useful, safe and understandable mobile experiences where intelligence supports real user workflows.

Core promise

Build AI features that feel native to Flutter: responsive UI, streaming state, clean services and safe actions.

Next step

Start with one reliable use case, measure it, then add tools, RAG, voice, image input and agents gradually.

flutterfever.com

Scan for more Flutter learning resources