### **Google's Al Agent Bake Off 2025**

The moment we've all been waiting for is finally here! On behalf of the entire Google team, we are incredibly excited to welcome you to the Al Agent Bake-Off. We were so impressed by your background and can't wait to see you in action.

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# The challenge: Reinventing retail banking with multi-agent systems

#### Context

Today's retail banks face a critical dilemma. Their digital engagement often feels stuck in the past, creating two major problems:

- A Fractured Customer Experience: When customers need help, they are often met
  with chatbots that don't understand their real needs, provide irrelevant links or are
  funneled into call centers only to repeat their story to multiple people. This is not only a
  manual workflow with inefficiency but leads to deep customer frustration.
- A Surface-Level Relationship: Most interactions are purely transactional—checking a balance or paying a credit card bill. Banks are missing the opportunity to build deeper, proactive relationships and become true partners in their customers' financial lives.

#### Your mission

#### Create a multi-agent system that builds the future of personal finance.

Your agents should:

- Offer seamless human-like interactions: Craft a delightful user interface where
  users can engage with agents most naturally. Follow the user journey, for example,
  inviting one-time setup at login to simple, accessible controls for managing the agent's
  permissions.
- 2. Offer Proactive Guidance: Go beyond basic queries by analyzing a user's spending patterns to offer proactive guidance on major life goals, like budgeting for a home or saving for a vacation.
- 3. **Automate with Intelligence:** Perform actions and automate workflows vs a chatbot. For example, use intelligent automation to build trust by proactively applying discounts and resolving complex support issues with speed and efficiency.

# Three agents: Example questions should these agents answer and example actions should they perform?

- 1. Daily Spending Agent: This agent will help the user to identify opportunities to save and automate their daily expenses. It has access to your frequent purchases like coffee, grocery shopping, monthly subscriptions. Example questions and actions:
  - a. How am I tracking my 'dining out' budget for this month?
  - b. I want to save an extra \$100 this month. Where can I cut back?
  - c. Based on my spending and income, how much can I realistically save each month?
  - d. Are there any cashback offers for my recent purchase at [Retailer]?
  - e. I'm going to the supermarket. Are there any relevant coupons or discounts on my credit cards? Great, apply to my credit card.
  - f. Can you find any subscriptions I might not be using?
  - g. Remind me before my free trial for [Service Name] ends.
  - h. Are there any family plans available for my current subscriptions that could save me money?
- 2. **Big purchases Agent:** This Agent will help the user in budgeting and planning for big purchase items. Think about buying a home, buying a car, planning how much to spend for rent. Example questions and actions:
  - a. How much house can I realistically afford based on my income and savings?
  - b. What would my estimated monthly mortgage payment be for a \$400,000 house with a 20% down payment?
  - c. How much do I need to save for a 10% down payment and closing costs in []?
  - d. Create a savings plan to have a down payment ready in 3 years.
  - e. How much can I qualify for a home? What can I do for more money?
  - f. What other debts should I pay off before taking on a large loan?
- **3. Trip Budget Planning Agent:** This Agent will help the user in budgeting and planning for vacations and trips. Example questions and actions:
  - a. I want to go to Italy in 9 months. How much do I need to save each month?
  - b. Set up a vacation fund and let's track my progress.
  - c. Where can I cut my daily spending to save more for this trip?
  - d. Automate a transfer of \$150 to my vacation savings every payday.
  - e. Are there any hotel discounts or package deals for my travel dates?
  - f. Do any of my credit cards offer travel rewards or perks I can use for this trip?
  - g. Alert me if the price of a flight to [Destination] drops below \$500.

#### **Technical Requirements and Judging criteria**

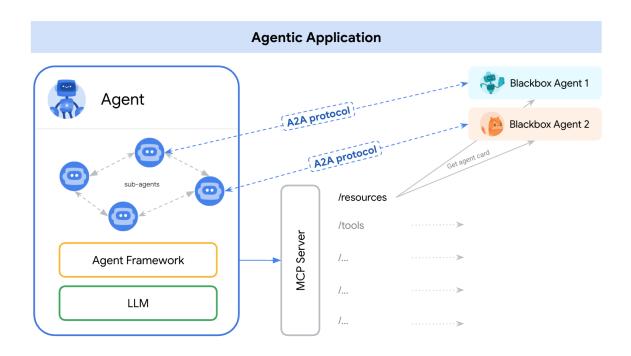
**Execution:** We'll be looking at how well your agent solves the problems for retail banking experience today, its ability to handle dynamic needs, how your Agent achieves the <u>mission</u> and successfully connects your Agent via A2A. We will ask you to submit your completed codebases / Github repo at the end of the bake-off.

**Creativity:** "Would your solution 'wow' the people to make them jump at the opportunity to use the agent today?". We essentially want to you treat the Agent from Cymbal Bank as a "blackbox" and build on "top of" or "around it".

Technical: Your agent must be built using the Agent Development Kit (ADK), Agent to Agent Protocol (A2A) and Gemini API. You're free to use other tools of your choice for development.

- Onboarding Signup Flow UI: As an initial task Cymbal bank will like you to onboard new
  users by allowing them to opt into and enable/disable which task your Agent will have
  access to. This will establish the A2A communication by leveraging the <u>Agent Card</u>
  <u>functionality</u>.
- At least two agents: You are being asked to create at least two agents as detailed in the
   Three agents: Example questions should these agents answer and example actions...

   section.
  - Yes, you can create your own agent use case outside of the three proposed.
  - You must use ADK for your Multi-Agent orchestration
- 3. **Automation:** Each Agent requires a form of automation. Automate at least one thing from a consumer experience and one from the bank's operation perspective.

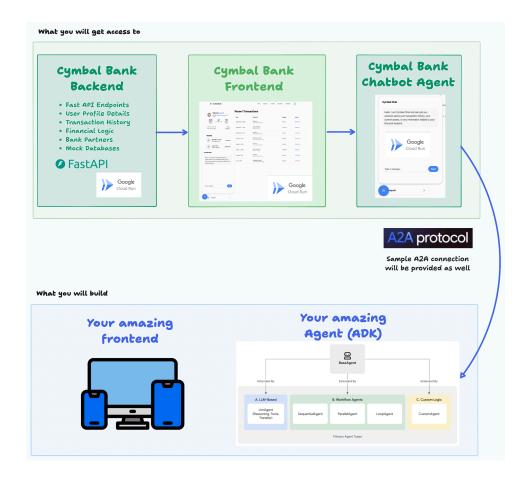


Key Concepts - Agent2Agent (A2A) Protocol

#### What you will be provided

#### Overview

- Mock Backend API and Frontend API for Cymbal bank
- Mock Agent for Cymbal bank
- Sample AI Agent you can use for A2A connection with Cymbal Bank Agent
- Gemini API Keys (Al Studio)



**Frontend mock bank Website:** This will act as Cymbal Bank's "current" frontend that shows a user's account details (recent transactions, savings, and credit information).

- The mock frontend will also contain the bank's mock AI Agent that connects to the backend.
- <u>Link to frontend</u> (work in progress)

**Backend Fast API:** This will act as the backbone of the Frontend and Agent created by Cymbal Bank. You are welcomed to add on top of this if needed, but treat this as a starting off point.

• <u>Link to docs here</u> or <u>redocs here</u> (work in progress)

**Cymbal Bank's AI Agent:** In order to showcase A2A communication we will provide you with a ready made Agent that is already connected to Cymbal Bank's backend. You can think of this as "grounding in finances".

• URL is TBD :p

#### **Milestones**

We have 3 main milestones we want to capture during shooting - wave me over so we can chat! You can think of milestones as something "TV worthy".

- Onboarding Signup Flow UI: The Signup flow is important as it's the initial moment you
  establish A2A communication <u>as mentioned here</u>. When this is working please wave
  Abraham over so we can document!
- Code Review: We are asking that sometime in the middle of your hackathon (2 4 hours in) you wave me over and do a quick Code Review where you can teach/walk Abraham through what you have built so far. Thin casual and certainly not a demo.
- The final "is it working?": We want to catch that moment when you press "run/build/deploy" and everything automagically works. Please wave Abraham over so that we can capture this moment as well.

To help you focus on building with the ADK, we've prepared a set of starter assets and will share the links by EOD Friday. While this provides a barebones foundation, you are highly encouraged to extend the front-end and back-end with additional tools—just be sure to manage your time carefully!

#### Rules

A Note on Fair Play: To keep the competition fair and fun for everyone, we ask that you do not write any code before the challenge officially begins on Thursday, August 14th.

Think of it like a real bake-off—no pre-baked cakes allowed! Adhering to this rule is essential to remain in the competition. However, we highly encourage you to plan your recipe! Brainstorming, sketching out ideas, and talking strategy with your partner is the perfect way to prepare.

#### Office hours and support

Office Hours: We will also set up an office hour on Monday, Aug 11, 2025 9:30-10:30AM PT to answer any questions you may have.

We will set up a Google Chatroom or reach out to <u>abrahamgomez@google.com</u> with any questions.

#### **Useful Links**

- Key Concepts Agent2Agent (A2A) Protocol
- https://github.com/a2aproject/a2a-samples/tree/main/samples/python/agents/helloworld
- Agent Discovery Agent2Agent (A2A) Protocol
- <a href="https://google.github.io/adk-docs/agents/">https://google.github.io/adk-docs/agents/</a>
- Frontend Pending
- Backend Pending
- Chatbot Pending
- Github Repo Pending

## Filming Day Logistics: All you need to know for Thursday, August 14th

Here are the key details for the big day.

#### **Location & Arrival**

- **Time:** Please arrive between 7:30AM and 8:30 AM. We will send you a call sheet the day before on the exact times we need you to come in. Please allow extra time for parking and building check-in. We recommend arriving 10 minutes ahead of your call time.
- Address: Three Embarcadero Center, Embarcadero Ctr, Lobby Lvl, San Francisco, CA 94111
- **Parking:** Paid parking is available in Embarcadero Center garages 1 through 4, all within a short walking distance.
- On-Site Contact: Brittain Noel, (530) 608-6930

#### What to Bring

- Your personal computer/laptop (fully charged!)
  - Please download OBS screen recording software before the shoot day (https://obsproject.com/download). Our DIT will set up the recording when you arrive in the morning but having the program ahead of time will help us avoid issues and stay on schedule.
- Your computer charger.
- One extra outfit option.
- A great attitude!

#### Hair, Makeup & Wardrobe:

- Please arrive "camera-ready" (hair and makeup done). We'll have a stylist for light touch-ups.
- Dress casually, as you would for a gathering with colleagues.
- Please avoid visible logos, branding, or tight/small patterns (like thin stripes or small checks).

#### Food & Drink:

- Coffee and a light breakfast will be waiting for you.
- Lunch will be catered. We will send out a menu the evening before (June 17th) for you to place your order.

• Snacks and beverages will be available all day.

#### **Support:**

Please reach out to Brittain directly if you have any questions or issues: 530-608-6930

#### **Run of show**

A Taste of the Day (Run of Show):

7:30 – 8:30 AM	Arrivals   Mic Up/HMU Touch-Ups		
8:30 – 9:00 AM	Run Through & Rehearsal		
9:00 AM	Cameras Rolling		
9:00 – 9:30 AM	Intro/Challenge Set Up		
9:30 – 12:30 PM	FIRST BLOCK Coding Challenge (3 hours)		
12:30 – 1:15 PM	Lunch		
1:15 - 1:45 PM	HMU Touch Ups		
1:45 PM	Cameras Rolling		
1:45 – 3:45 PM	SECOND BLOCK Coding Challenge (2 hours)		
3:45-4:00 PM	Reset for presentations		
4:00- 5:15 PM	Final Product Demos + Judges Feedback + Winner + Outro  Teams get 5 MINUTES per presentation + 10 minutes for judge questions		
6:00 - 7:00 PM	On-Cam Contestant Interviews / Wrap Contestants		