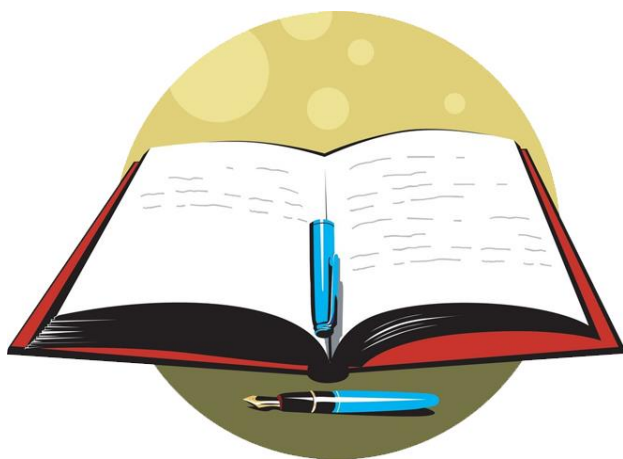


TRƯỜNG ĐẠI HỌC KHOA HỌC TỰ NHIÊN

Môn Phát triển ứng dụng cho thiết bị di động nâng cao



PROJECT REPORT



Sinh viên thực hiện:

- 21127162 - Lê Nguyên Thái
- 21127648 - Nguyễn Nhật Nam



Contents

1. Project Overview	3
JARVIS AI Assistant Platform	3
2. Introduction	3
Project Scope	3
3. System Architecture and Design	4
Architecture Overview	4
Technologies Used	5
Design Principles	6
4. Feature Implementation	6
4.1 General Overview	6
4.2 Authentication and Authorization	7
4.3 AI Chat	9
4.4 AI Bot Management	11
4.5 Knowledge Dataset Management	15
4.6 Prompt Management	21
4.7 Pro Account and Monetization	22
4.8 Image & File Q&A	27
4.9 AI-Powered Email Drafting	29
5. Self-Assessment	36
Contribution:	41
6. Conclusion	41
7. References	42

1. Project Overview

JARVIS AI Assistant Platform

Advanced Mobile Application Development - Final Project

Course: Advanced Mobile Application Development

Instructors:

- Phạm Hoàng Hải
- Nguyễn Huy Khánh

Students:

- 21127162 - Lê Nguyên Thái
- 21127648 - Nguyễn Nhật Nam

Submission Date: 10/5/2025

Git Repository: https://github.com/nnam24/advanced_mobile.git

Demo Videos:

- Phase 1: <https://youtu.be/Up0f0xoU7Dc>
- Phase 2: https://youtu.be/JFa60vW_n-s
- Phase 3:
https://drive.google.com/file/d/1HAMFUazJ2_wxUNo_GREOFVEcrwkDPOko/view?usp=sharing

2. Introduction

The **JARVIS AI Assistant Platform** is a mobile application developed using **Flutter** that provides users with a comprehensive AI assistant experience. The app integrates with backend services to deliver features like **AI chat**, **custom bot creation**, **knowledge management**, **prompt libraries**, and **email drafting assistance**.

Project Scope

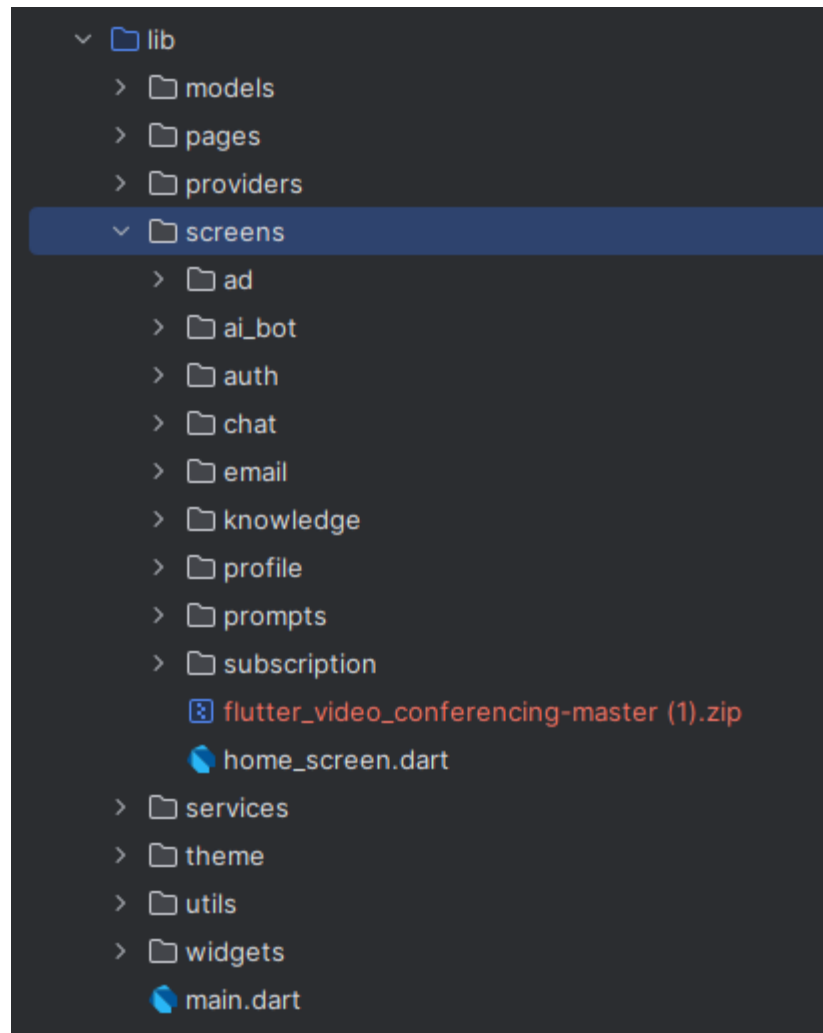
- Implementing UI for all required features

- API integration with backend services
- Proper state management and data flow
- Responsive and intuitive UI/UX
- Error handling and loading state management
- Following best practices in mobile app development

3. System Architecture and Design

Architecture Overview

- **UI Layer:** Flutter widgets and screens
- **State Management:** Provider pattern
- **Service Layer:** Handles API integration
- **Model Layer:** Represents application entities



Technologies Used

- Flutter
- Provider
- HTTP
- Shared Preferences
- Image Picker
- URL Launcher
- Google Fonts
- Animations

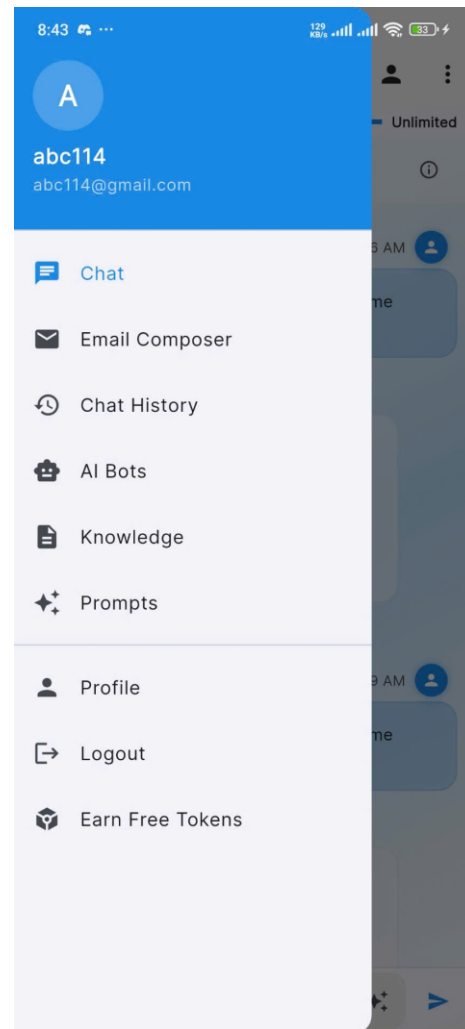
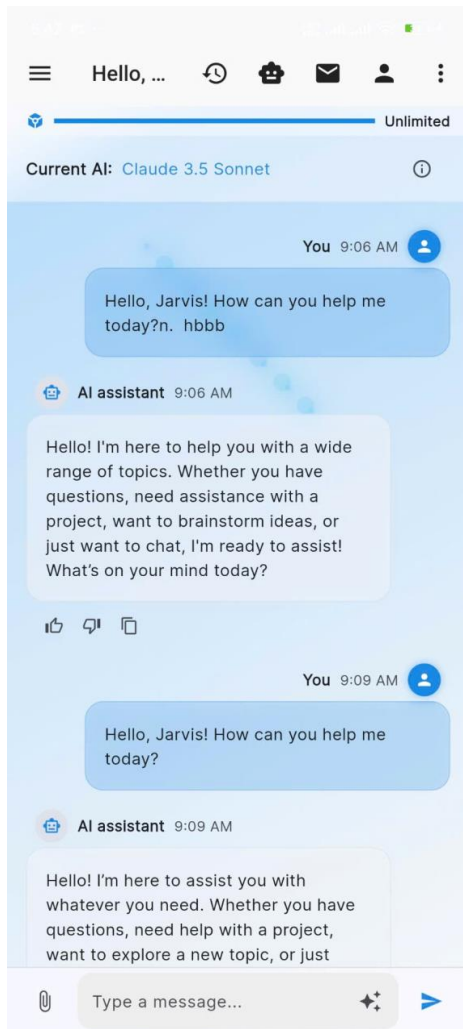
Design Principles

- Clean and minimalist UI
- Consistent design language
- Intuitive navigation
- Responsive layouts
- Visual feedback
- Accessibility considerations

4. Feature Implementation

4.1 General Overview

- Bottom navigation & side drawer
- Card-based content design
- Floating action buttons
- Animated screen transitions
- Loading indicators



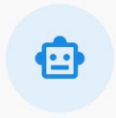
4.2 Authentication and Authorization

- Email/password login
- Email registration & validation
- Google sign-in
- Password recovery & reset
- Secure session management
- Logout

0:46


55%
all full



55%
all full



Jarvis AI

Your personal AI assistant


 Email


 Password 

☐ Remember me [Forgot Password?](#)

Login

Or continue with

 Google


 Apple

Don't have an account? [Register](#)

0:46


55%
all full


55%
all full







Create Account

Sign up to get started with Jarvis AI

 Full Name

 Email

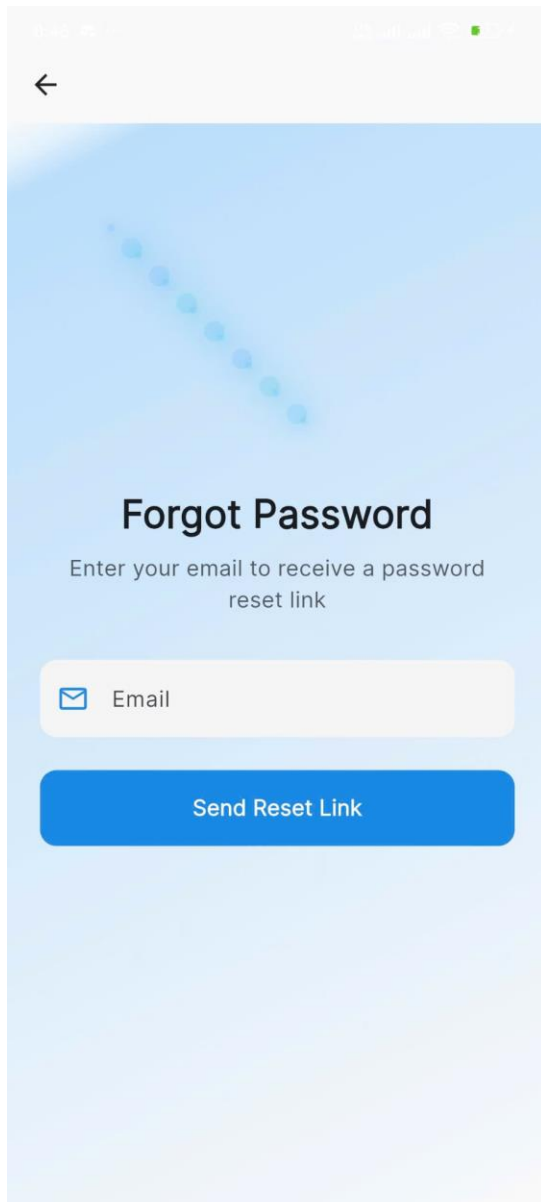
 Password 

 Confirm Password 

☐ I agree to the [Terms of Service](#) and [Privacy Policy](#)

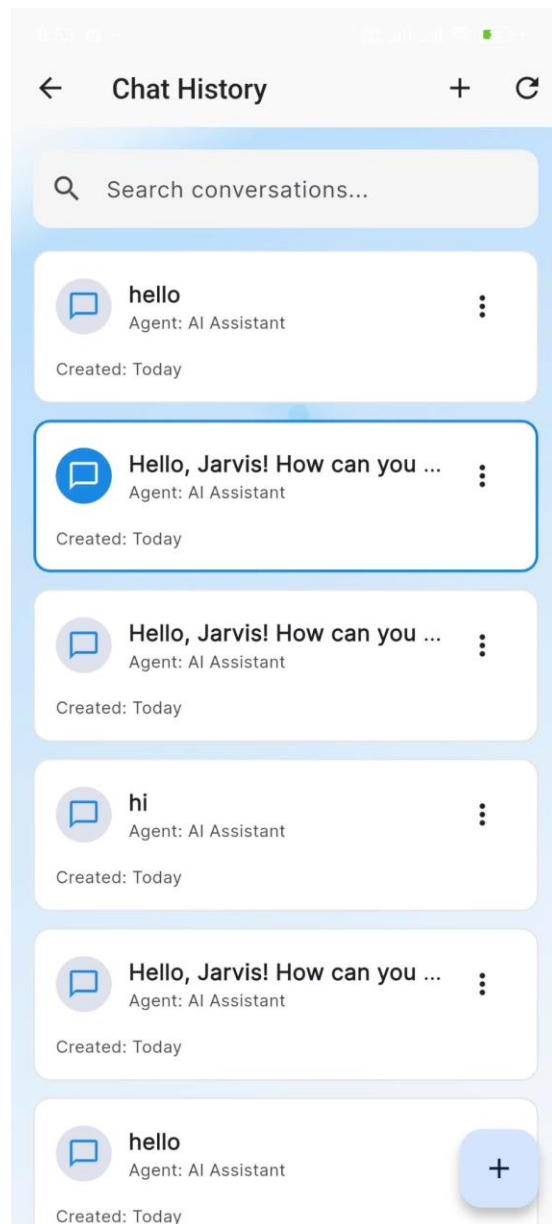
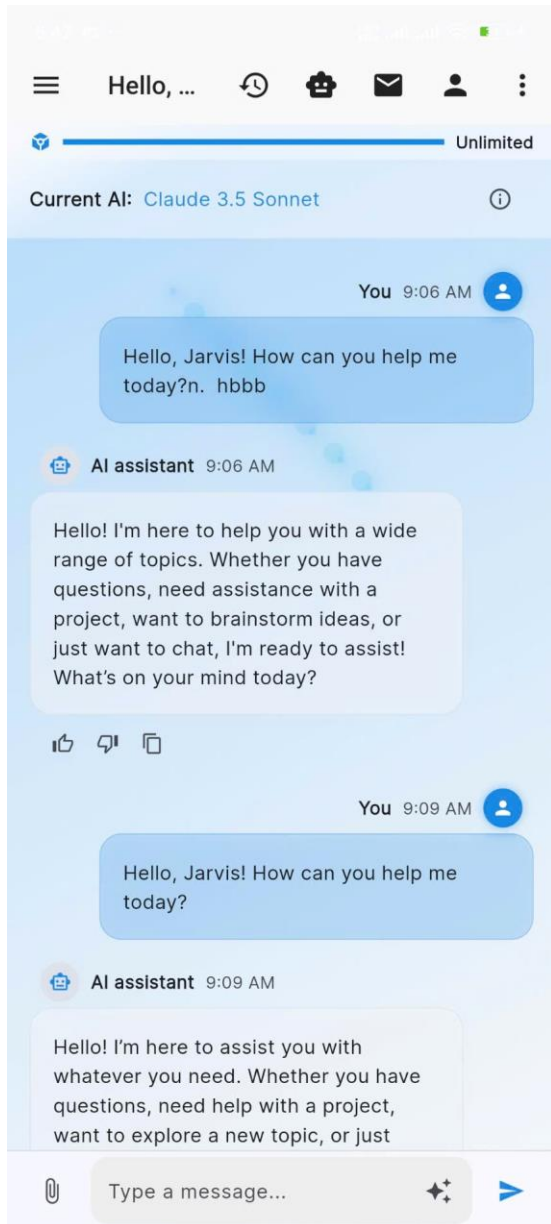
Create Account

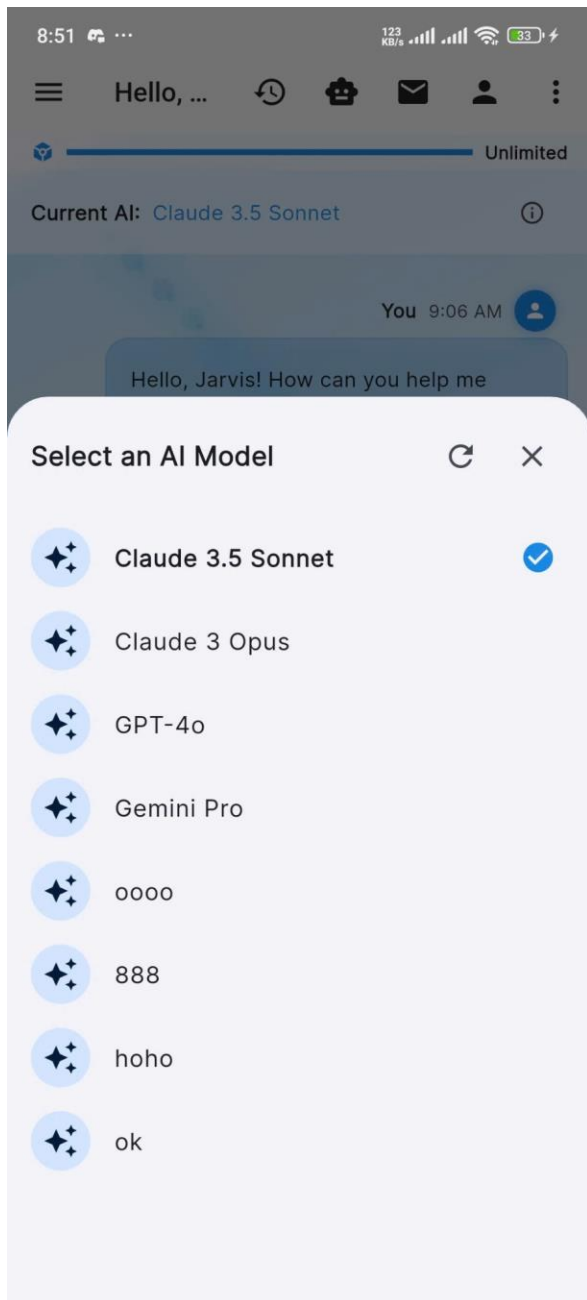
Already have an account? [Login](#)



4.3 AI Chat

- Display of conversations
- Message input & send
- AI model selector
- Token usage tracker
- Conversation history management

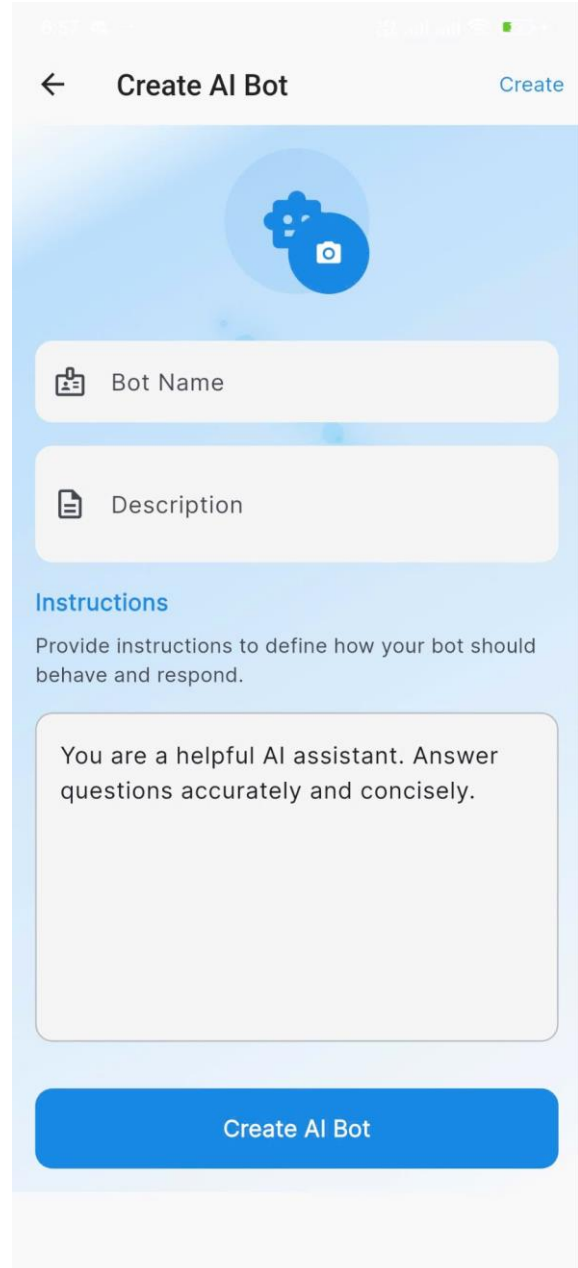
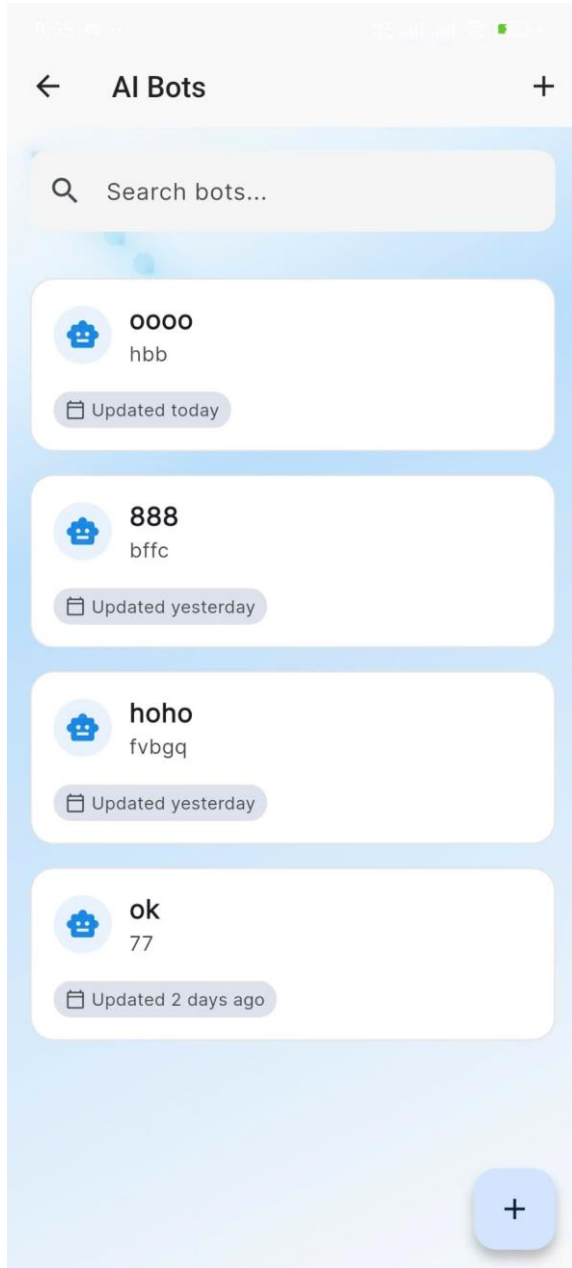


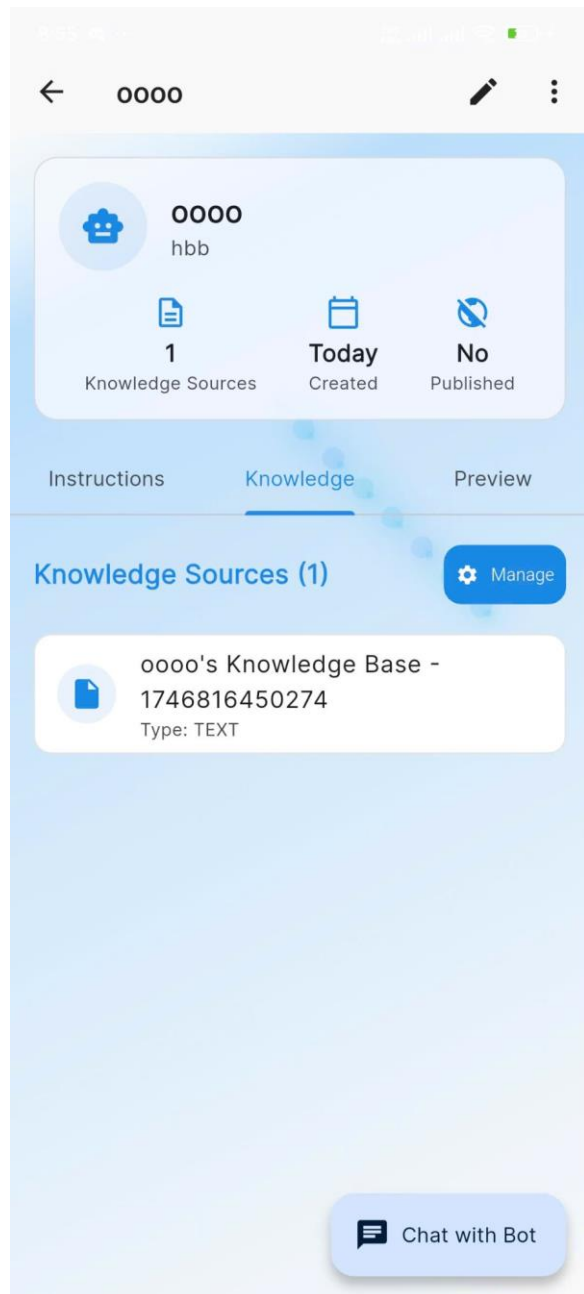
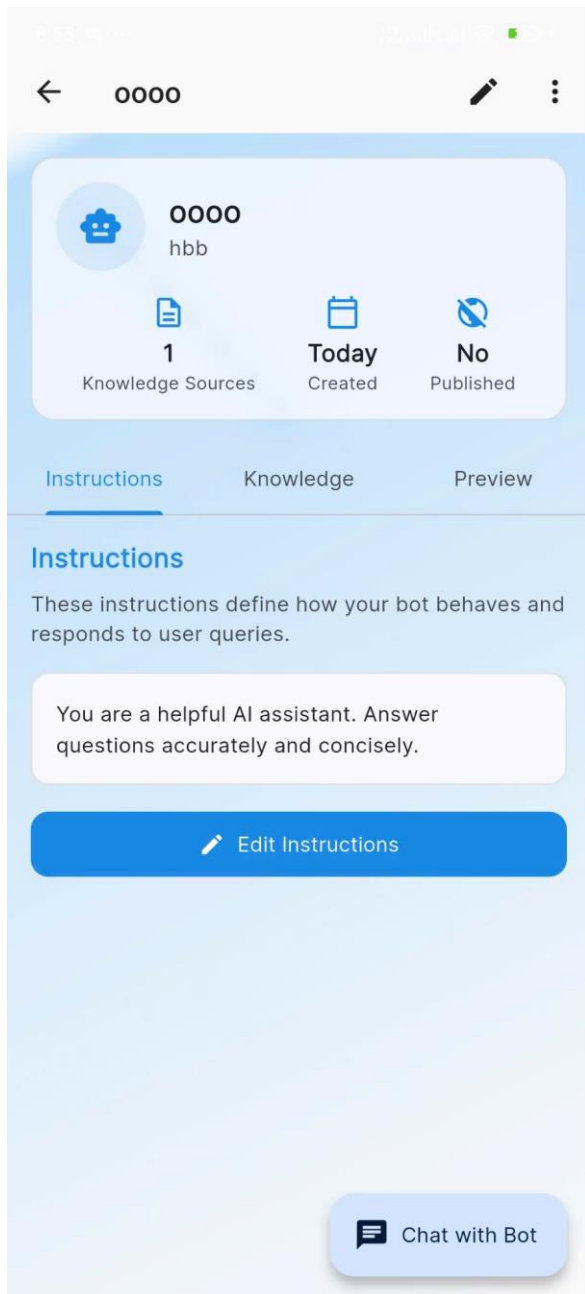


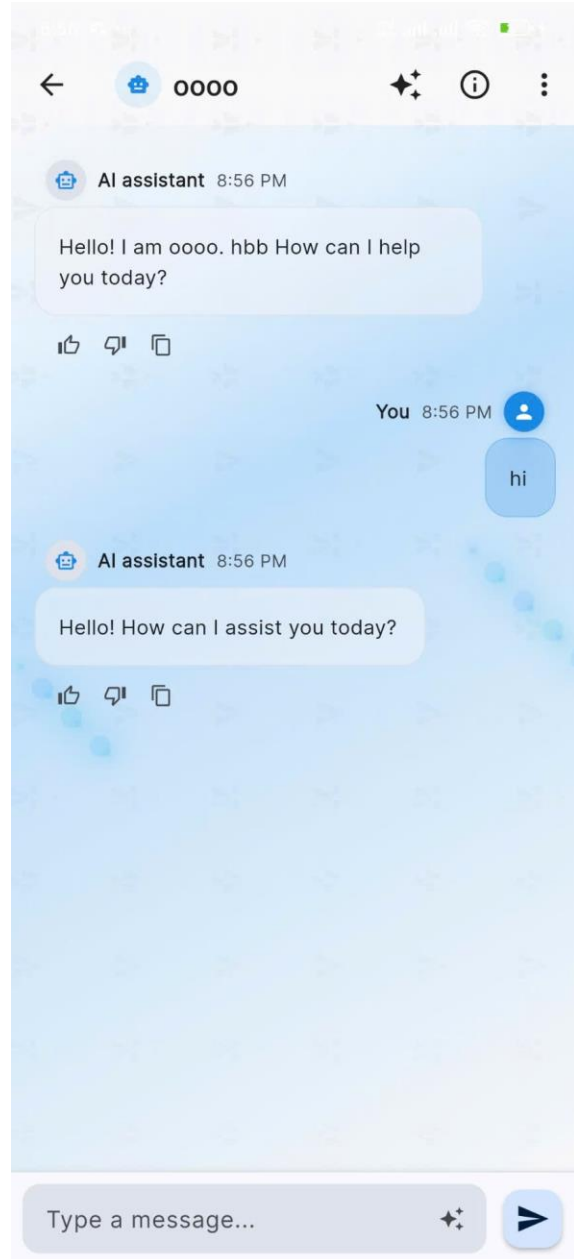
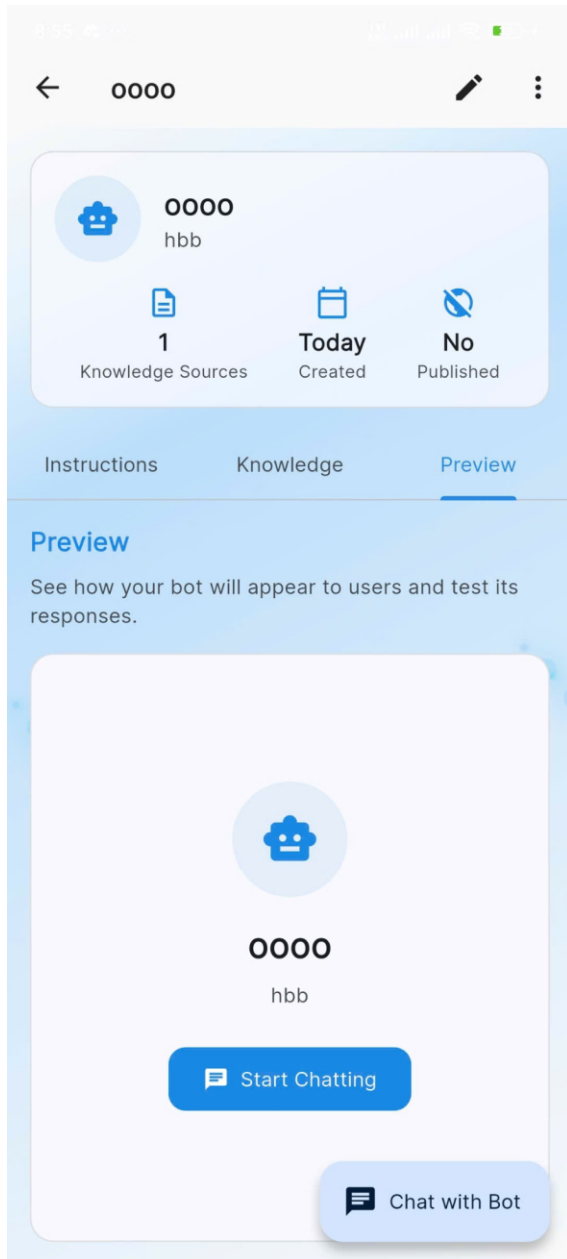
4.4 AI Bot Management

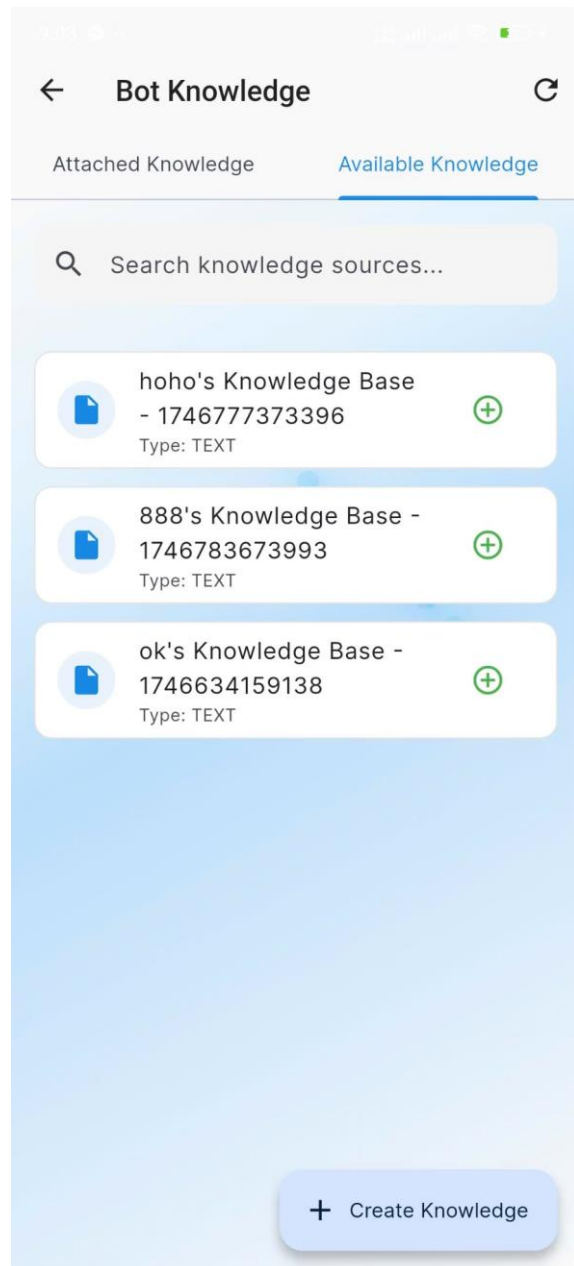
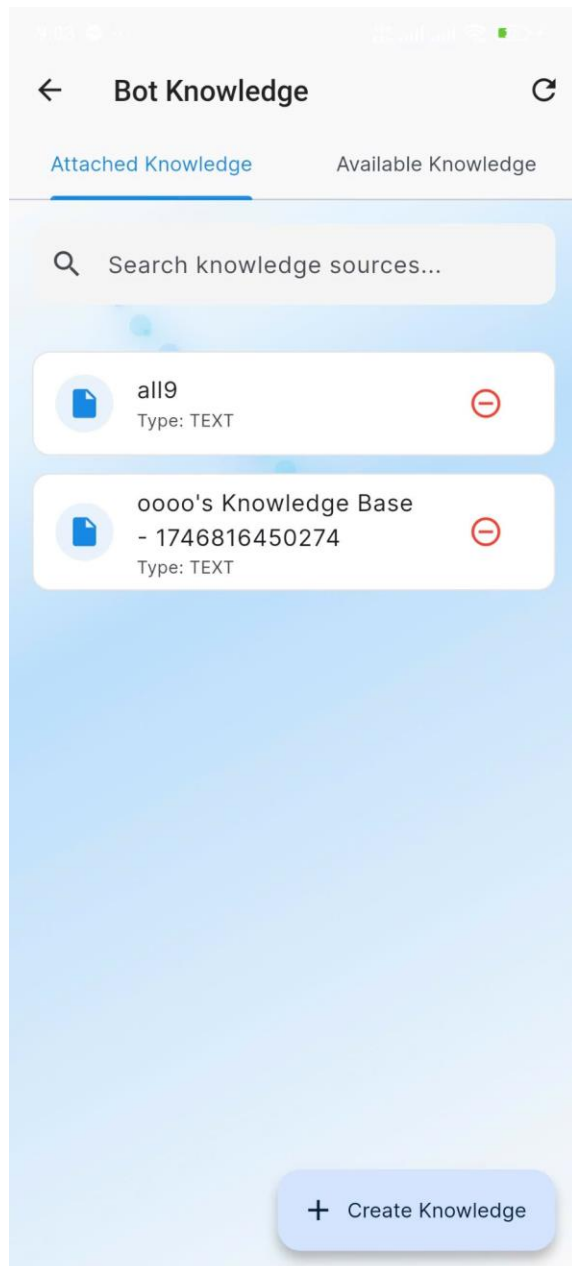
- Create/edit/delete bots
- Set bot instructions
- Bot search and listing
- Manage knowledge of a bot
- Chat with bots

- Publish bots to Slack/Telegram
- Preview and chat with bot









4.5 Knowledge Dataset Management

- Add/manage knowledge sources
- Upload files, import from URLs
- Integrate with Slack & Confluence
- Google Drive integration (pending)

(Insert Screenshots: Source Creation, Listing, Upload, Import)

Create Knowledge Sour...

Create

T Title

Description

Enter a description...

Create Knowledge Source

Knowledge Sources

+

Q Search knowledge sources...

test2

Type: TEXT

Created: 10/5/2025

bbhh

Type: TEXT

Created: 6/5/2025

test

Type: TEXT

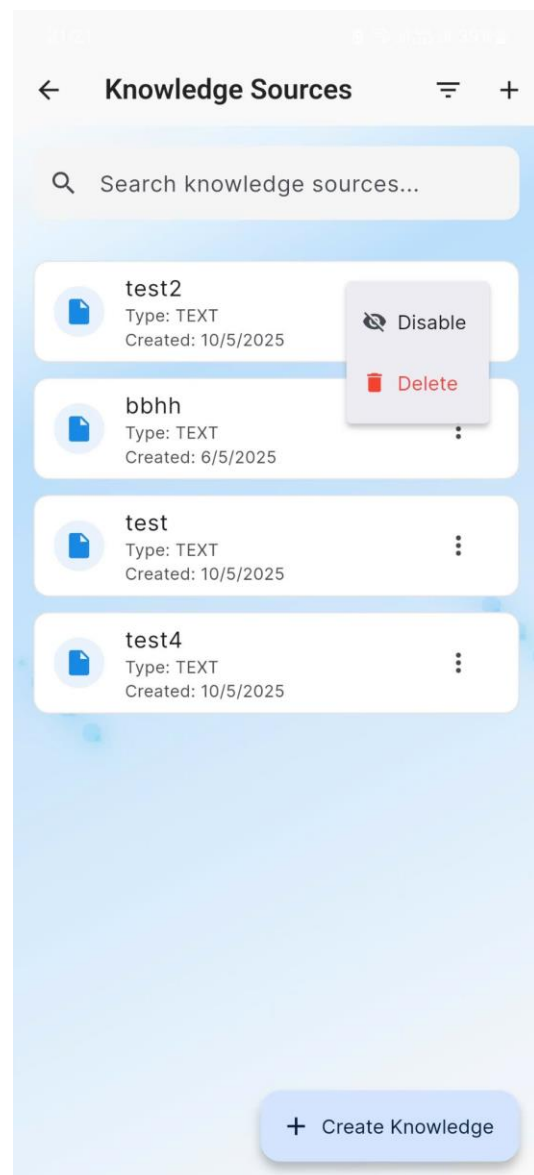
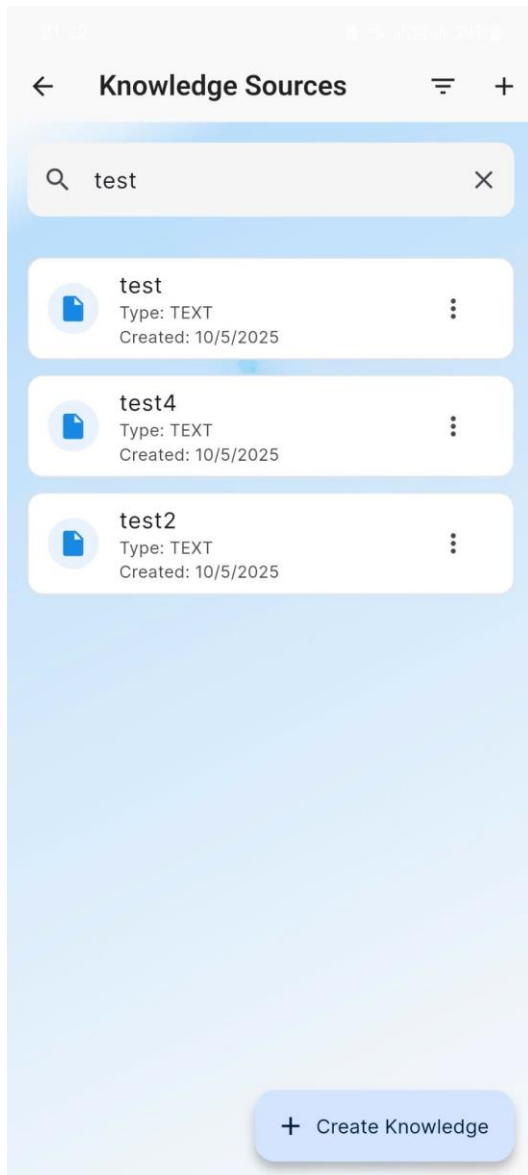
Created: 10/5/2025

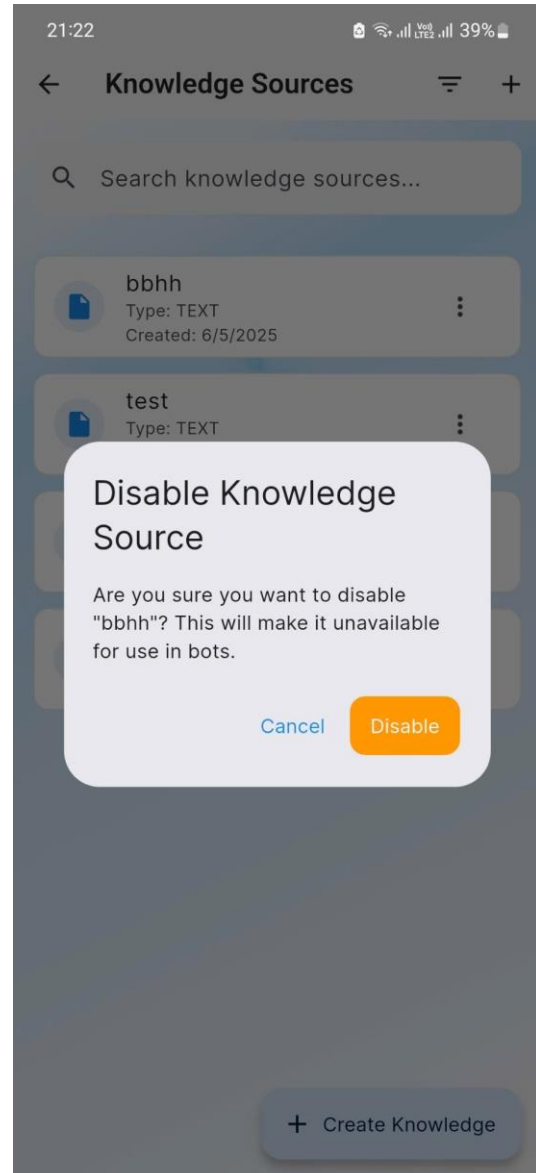
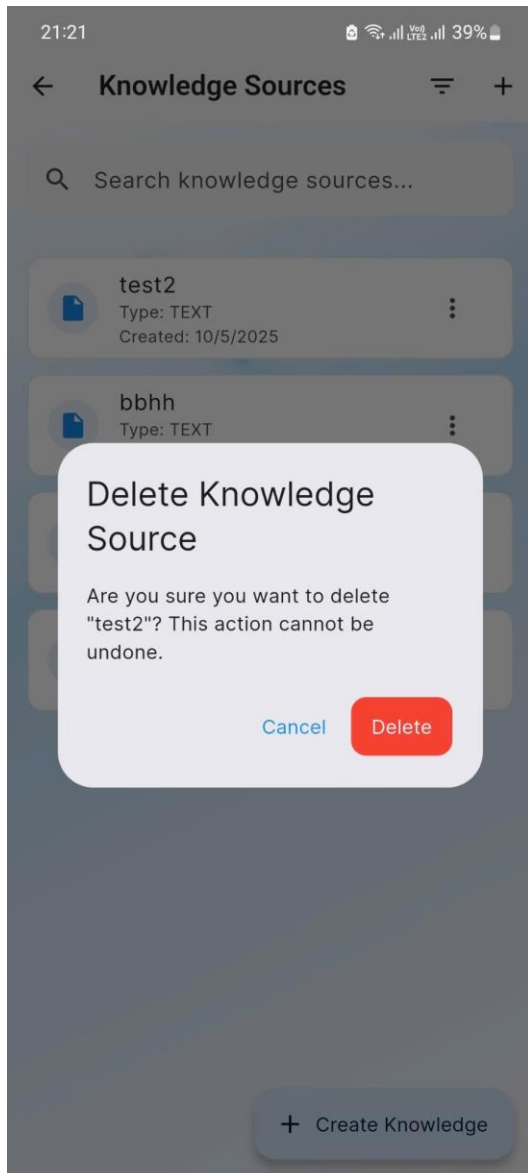
test4

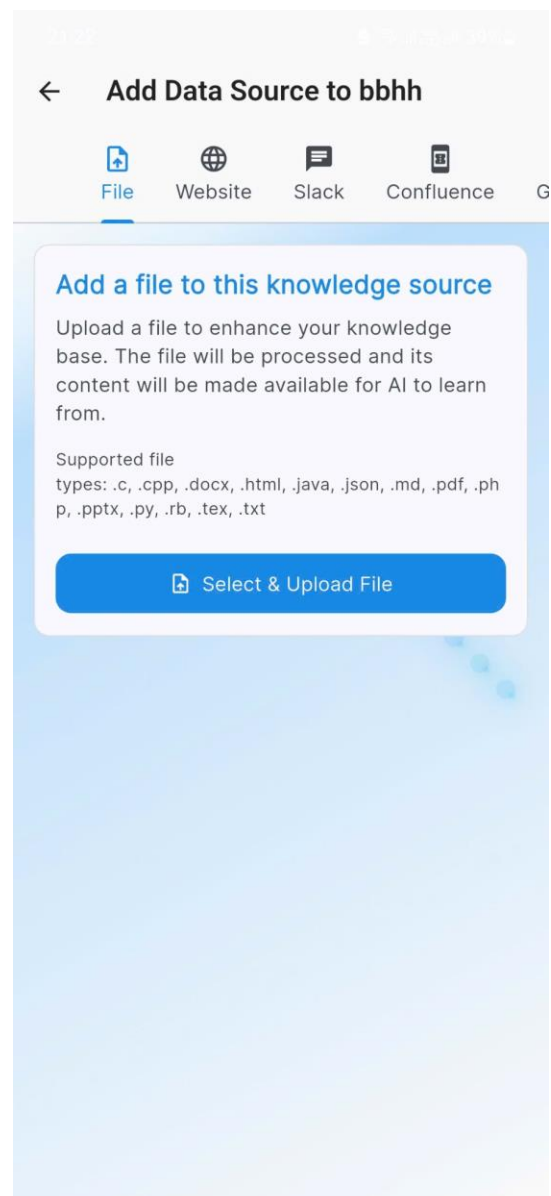
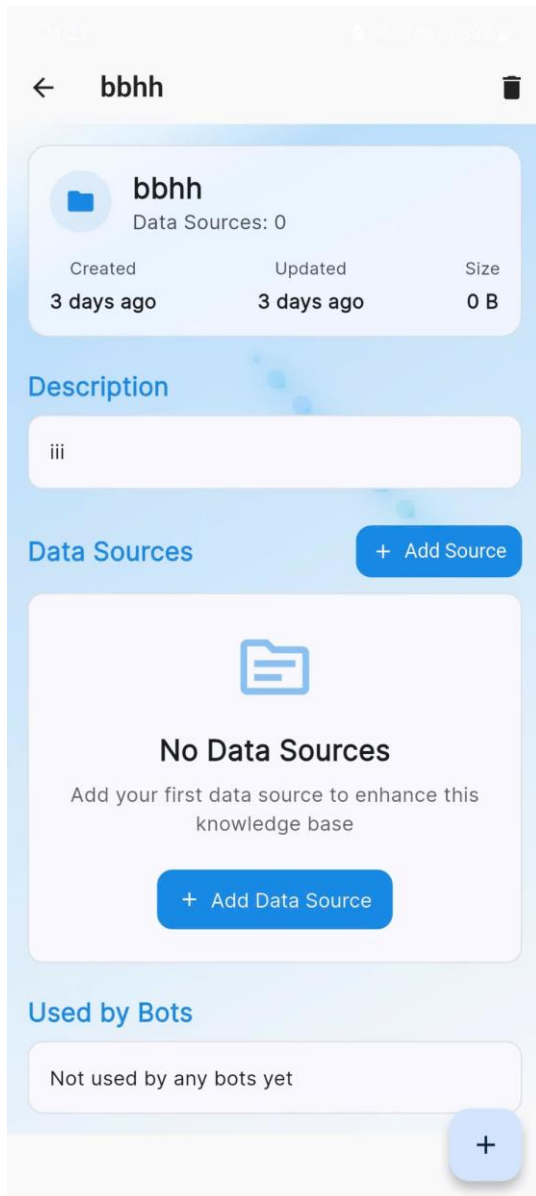
Type: TEXT

Created: 10/5/2025

+ Create Knowledge









10:22


100% 10:22


←

Add Data Source to bbhh

File

Website


Slack


Confluence


G

Add a website to this knowledge source

Add a website URL to your knowledge base. The content of the website will be crawled and processed for AI to learn from.

Website Name

Website URL


Add Website


10:22


100% 10:22


←

Add Data Source to bbhh

File

Website


Slack


Confluence

G


Add a Slack workspace to this knowledge source

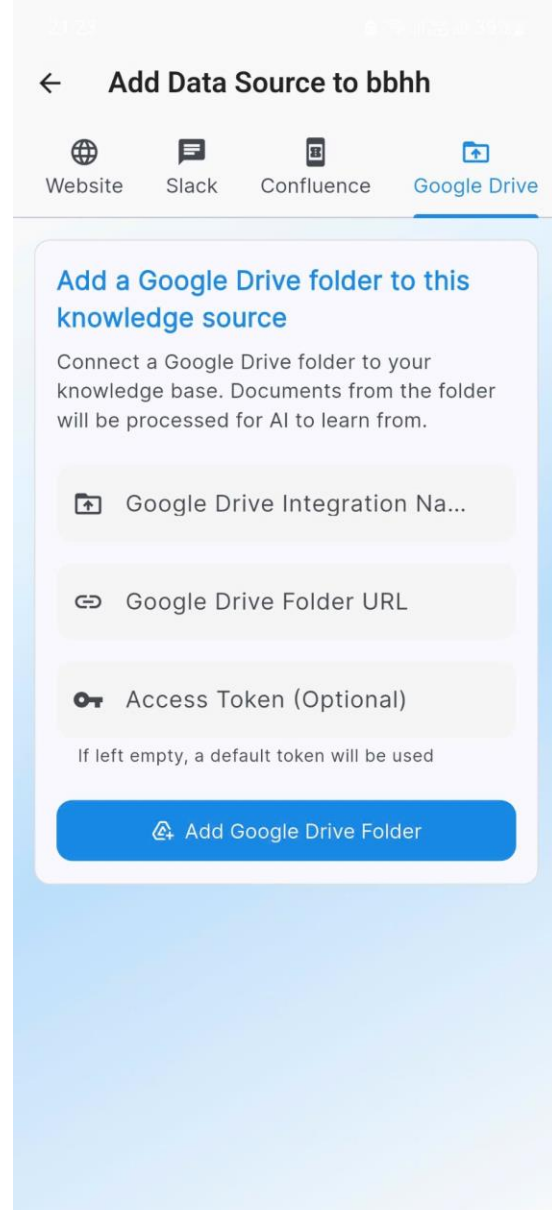
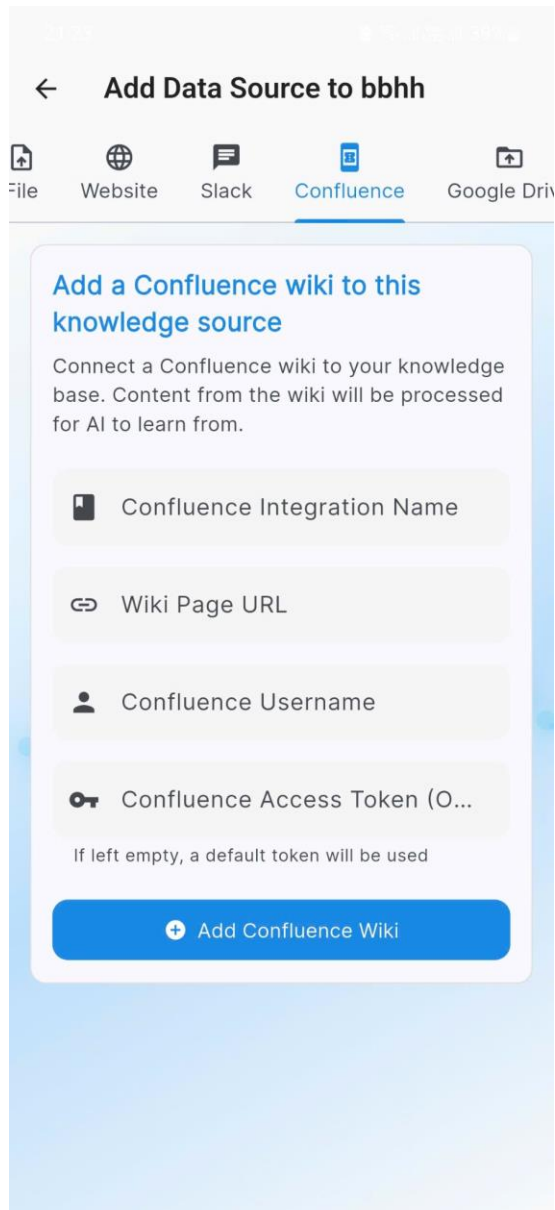
Connect a Slack workspace to your knowledge base. Messages and content from the workspace will be processed for AI to learn from.

Slack Integration Name

Slack Bot Token (Optional)

If left empty, a default token will be used

Add Slack Workspace



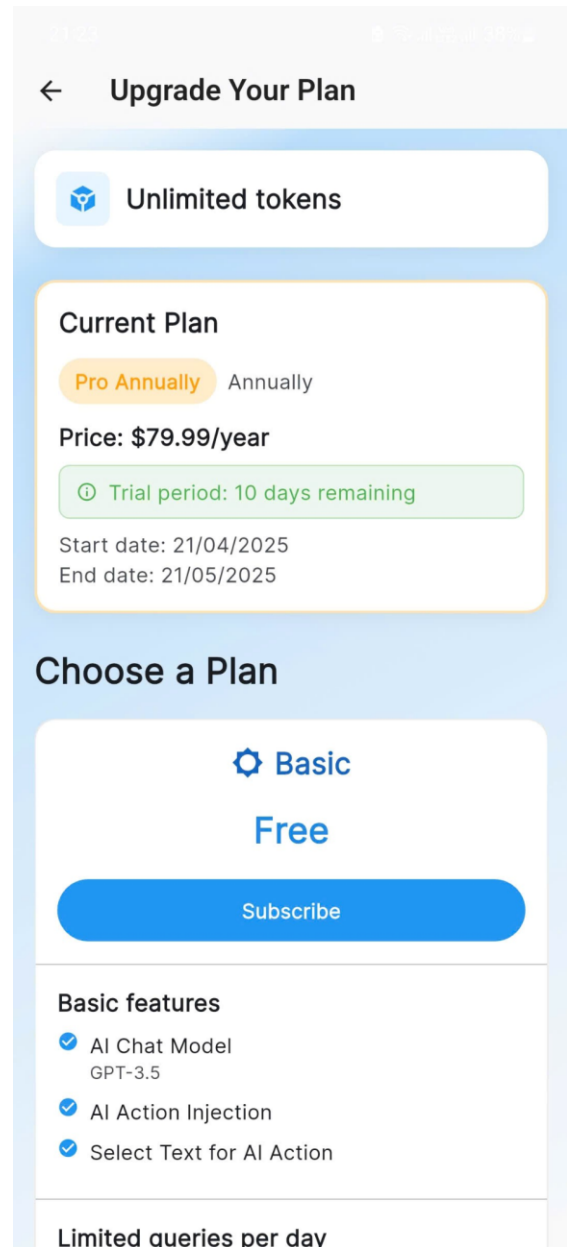
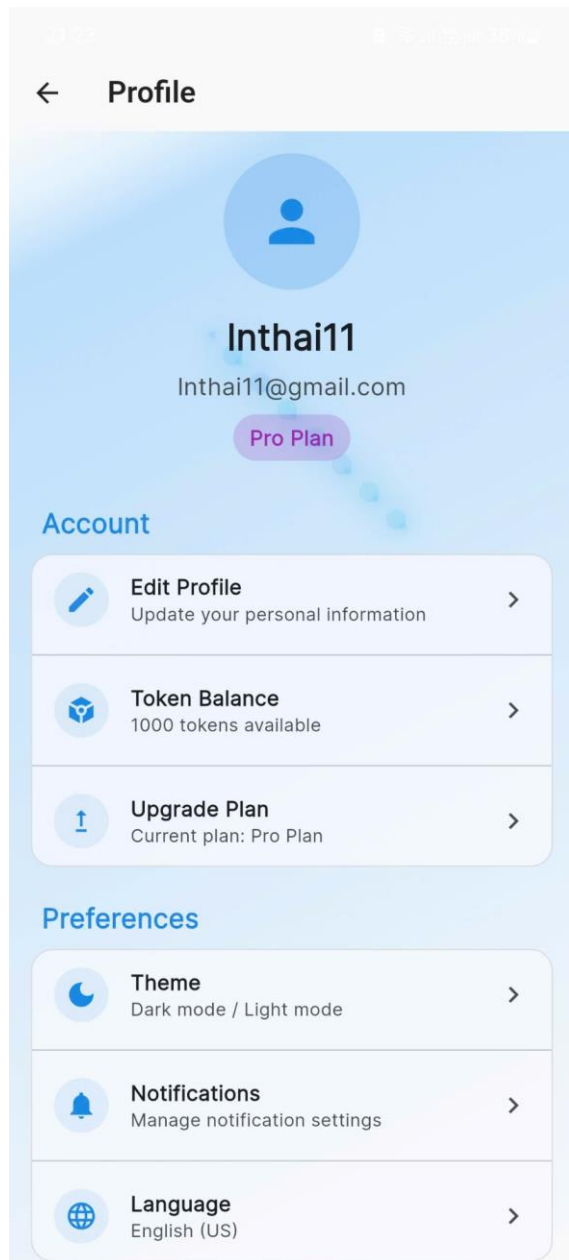
4.6 Prompt Management

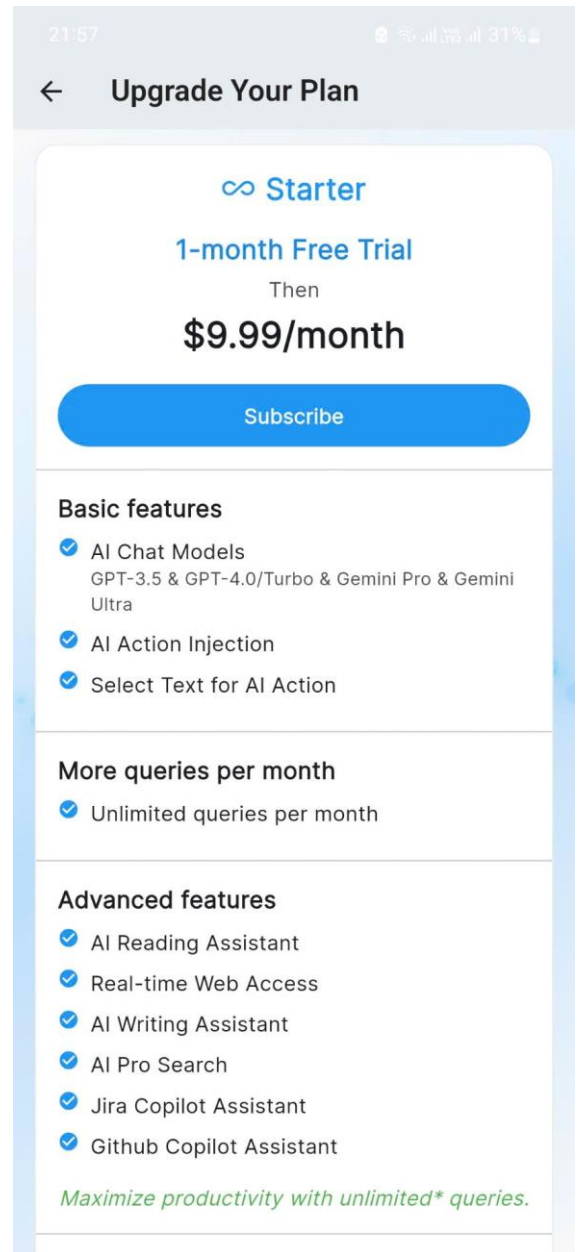
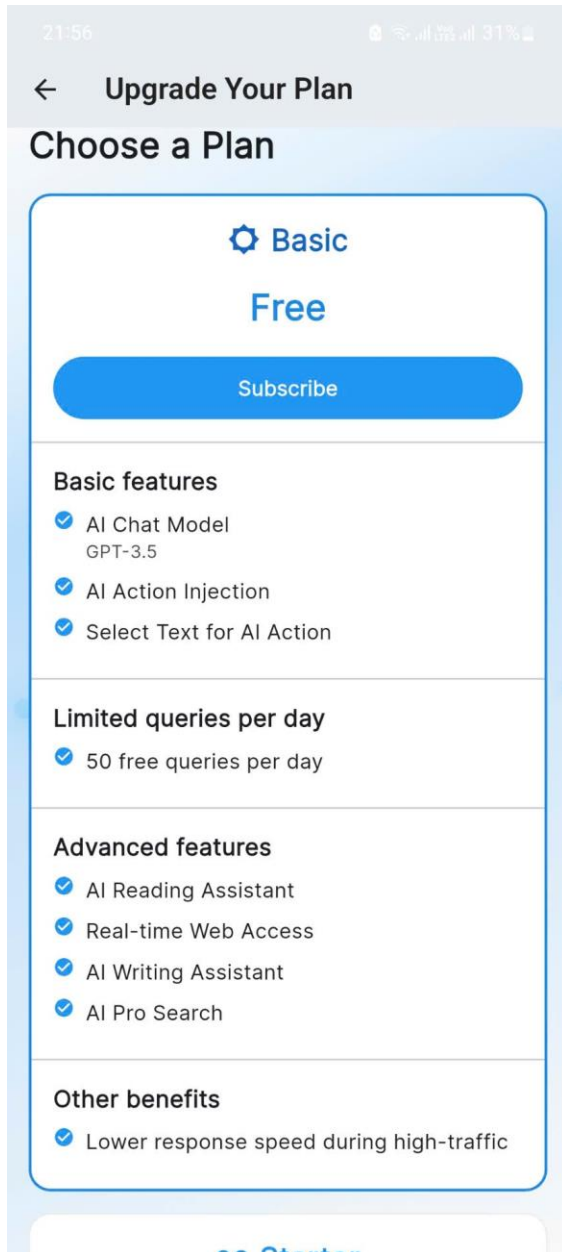
- Public/private prompt management
- Prompt categories and favorites
- Prompt usage in chats
- Slash command quick access

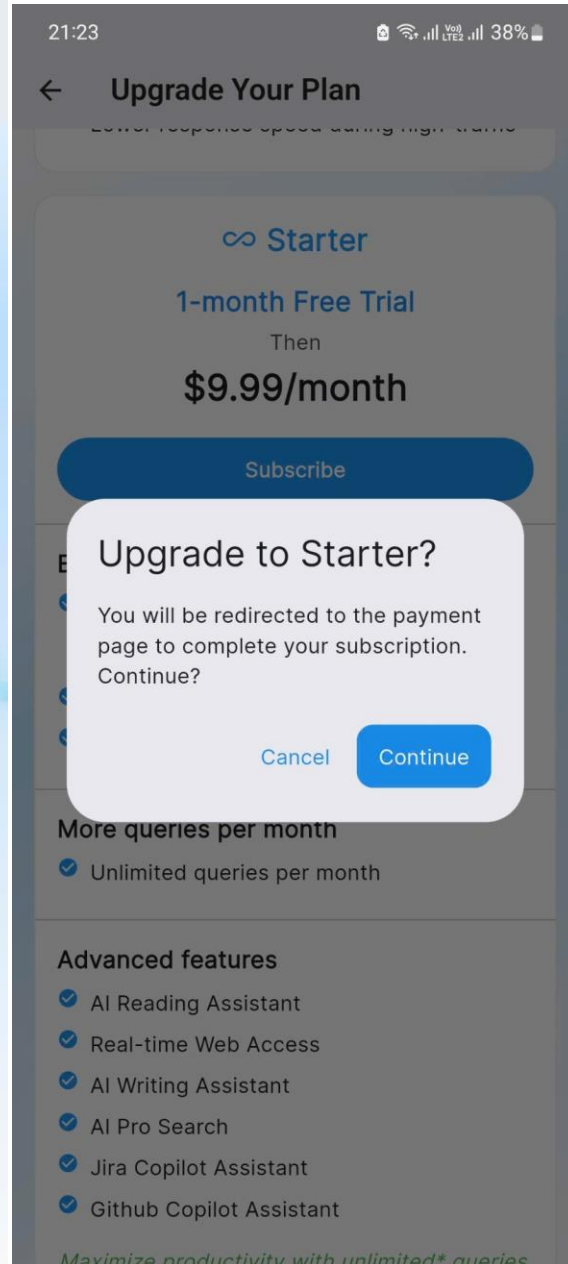
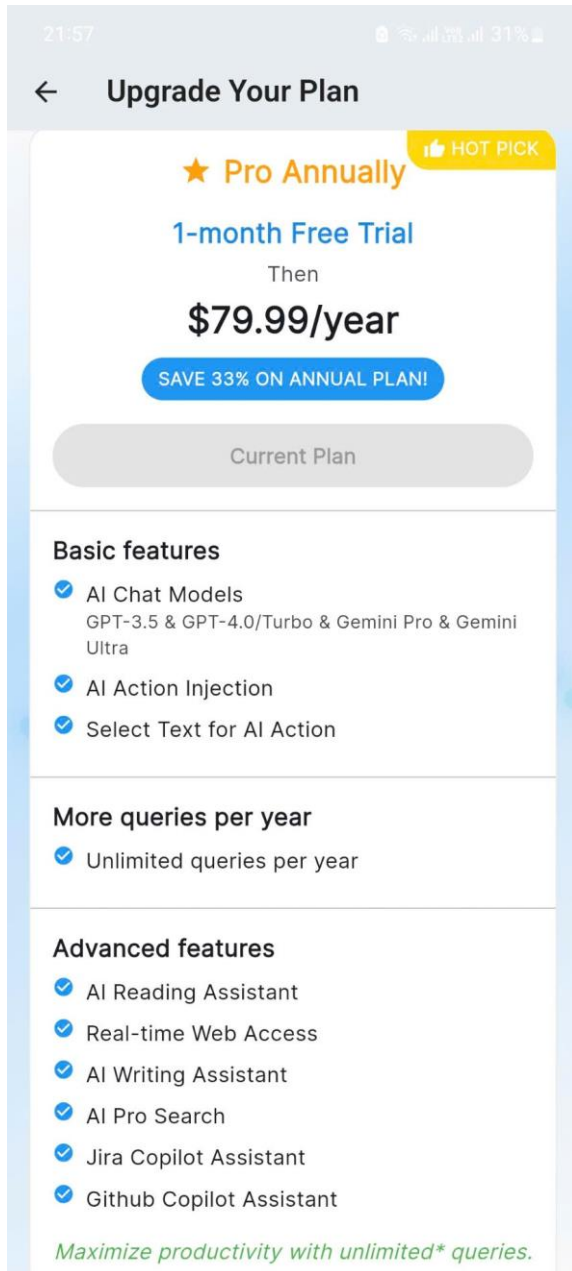
(Insert Screenshots: Library, Creation, Detail, Chat Usage)

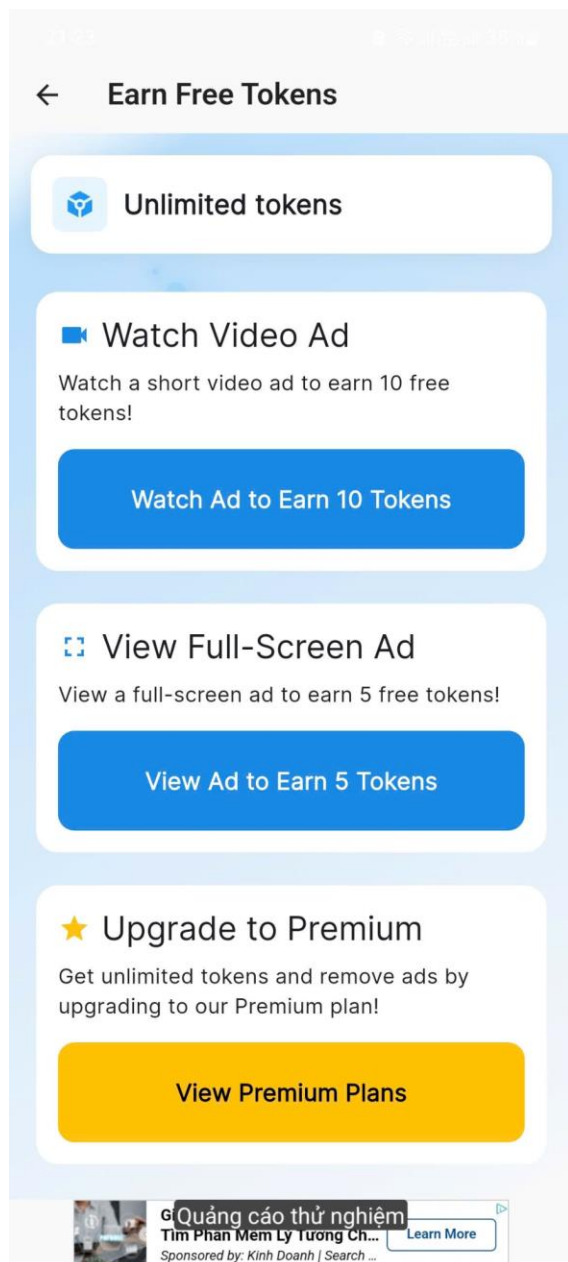
4.7 Pro Account and Monetization

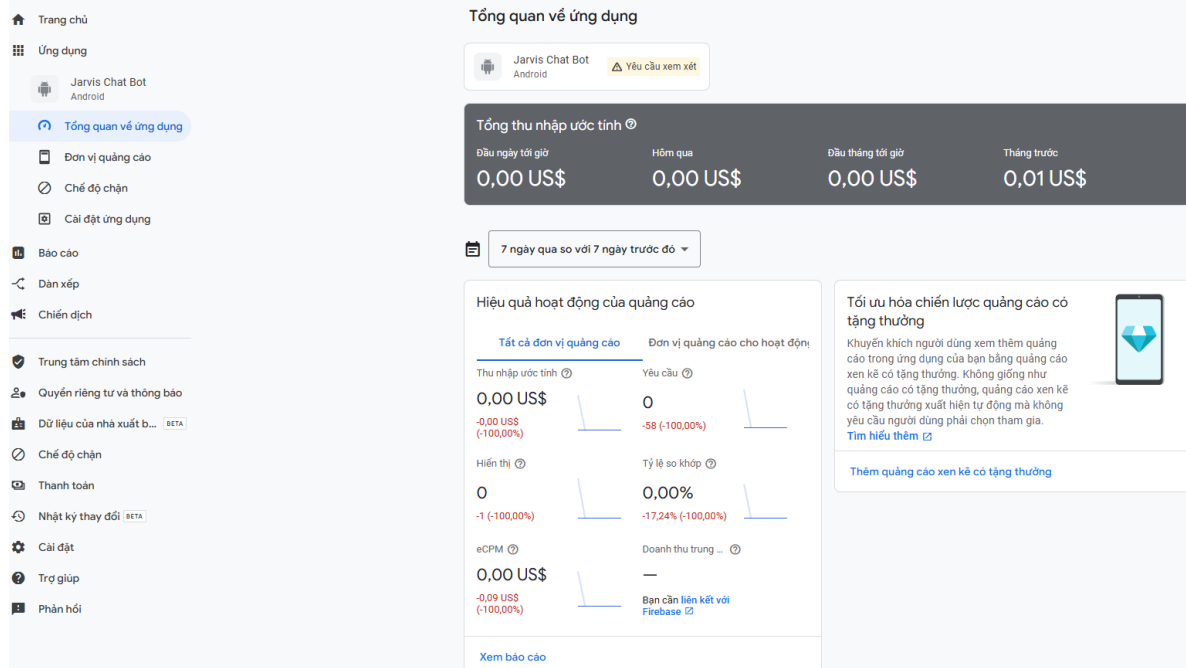
- Display subscription plans
- Upgrade flow
- Token usage & limit tracking
- Ads integration
- In-app purchase setup





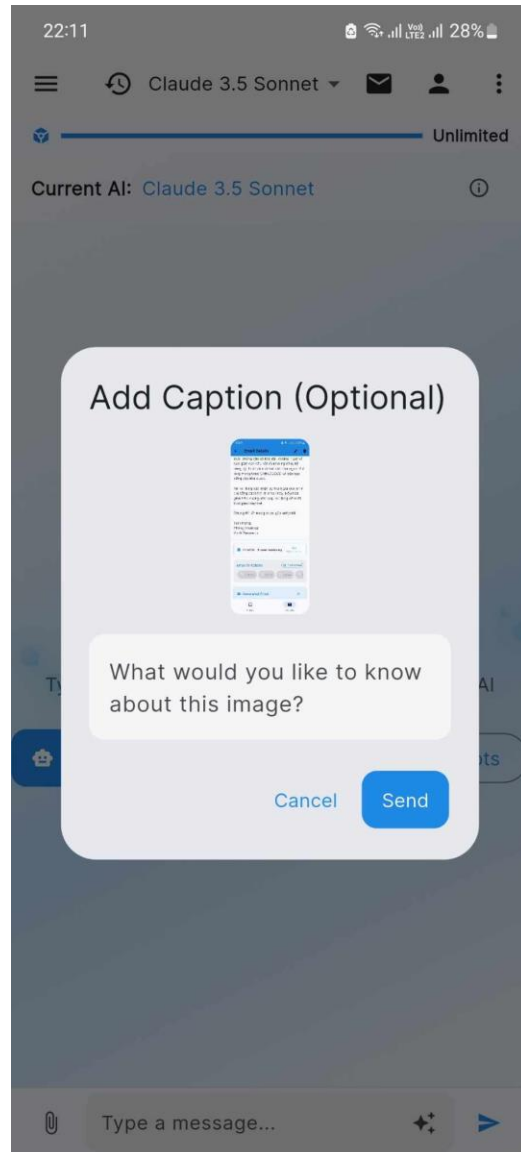
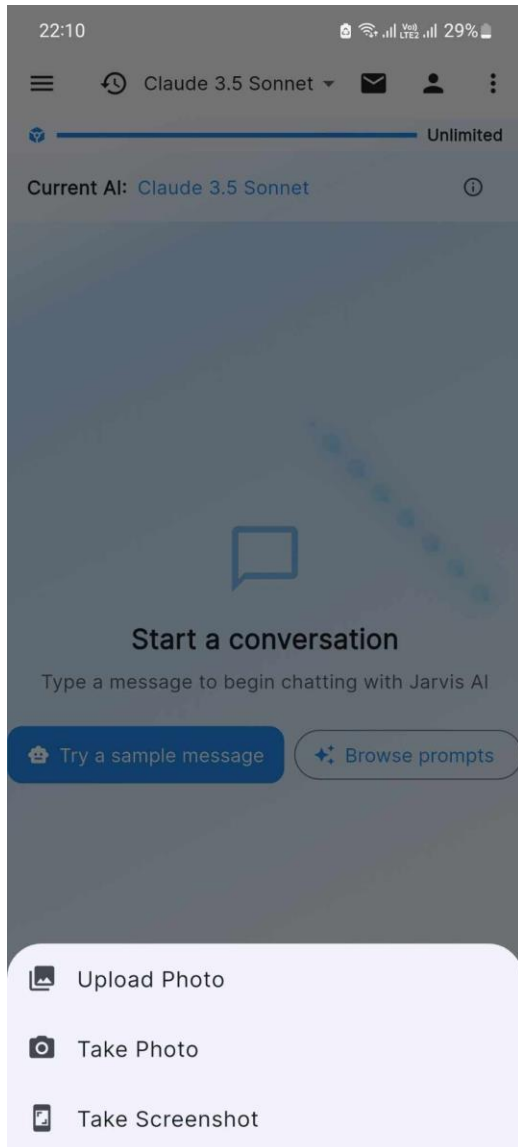


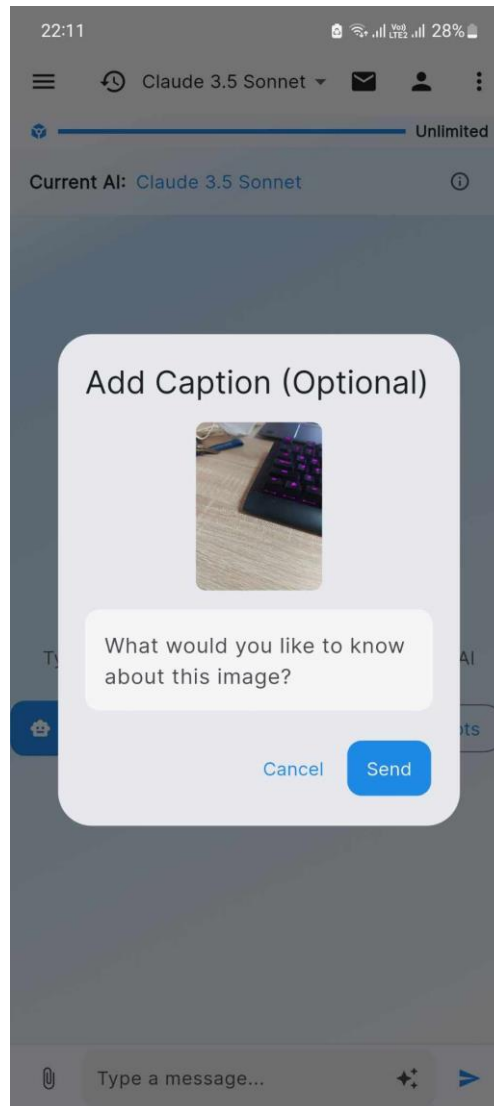




4.8 Image & File Q&A

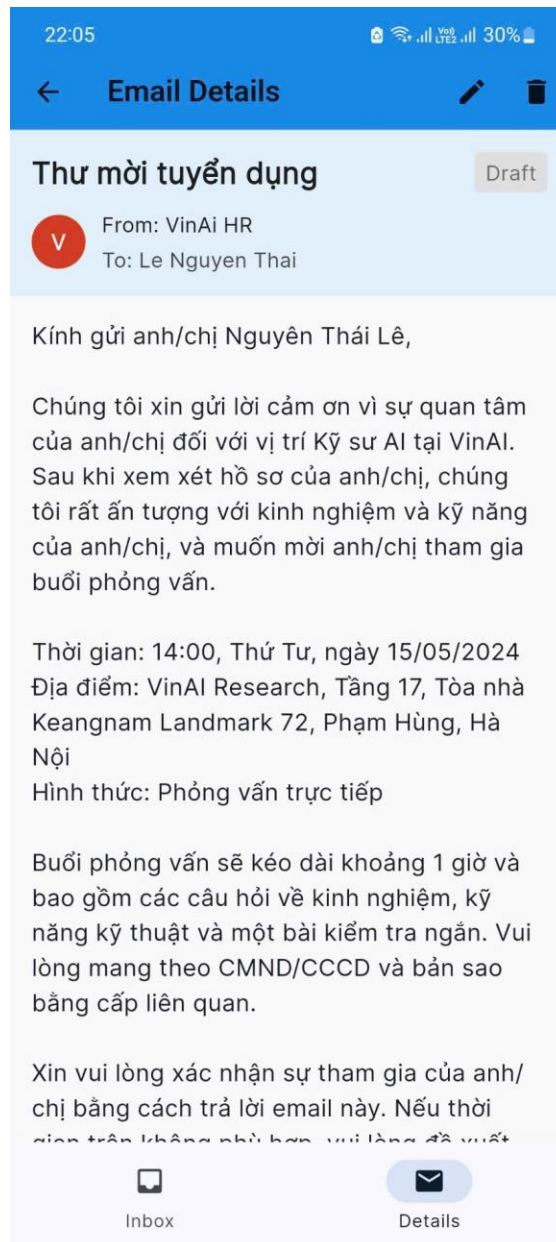
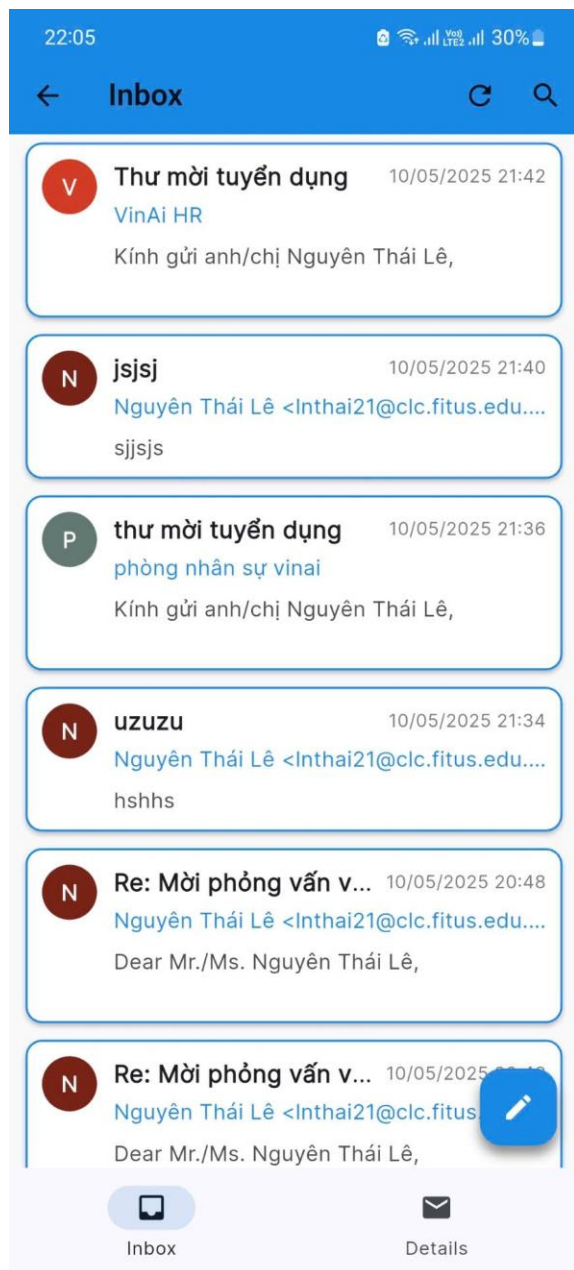
- Upload image (pending)
- Camera capture (pending)
- Screenshot analysis (pending)

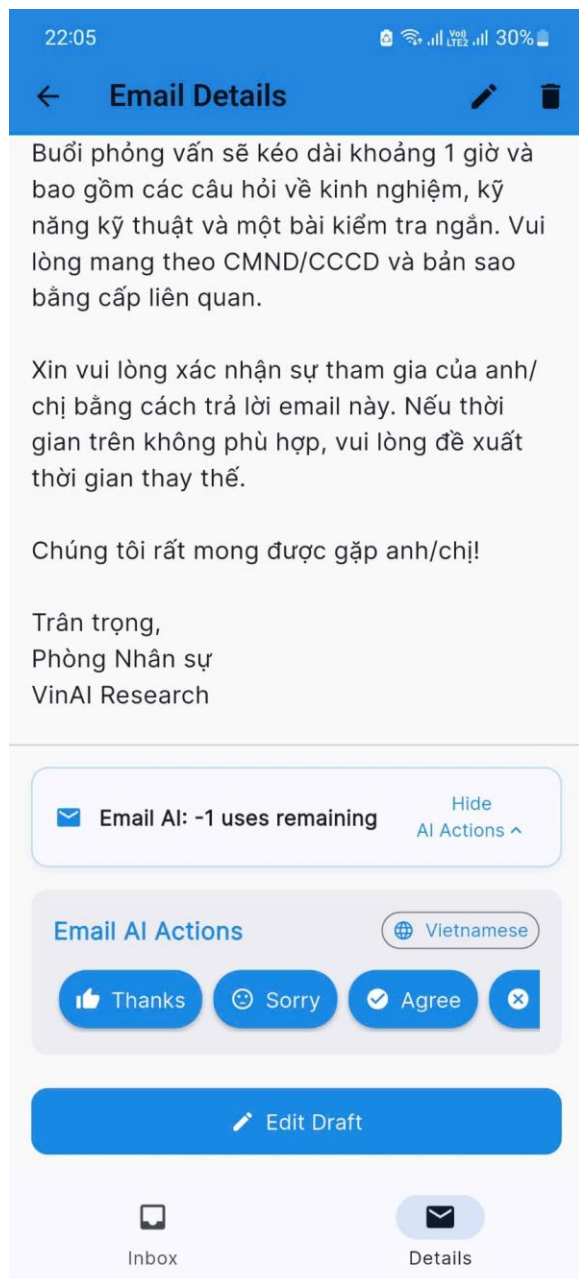


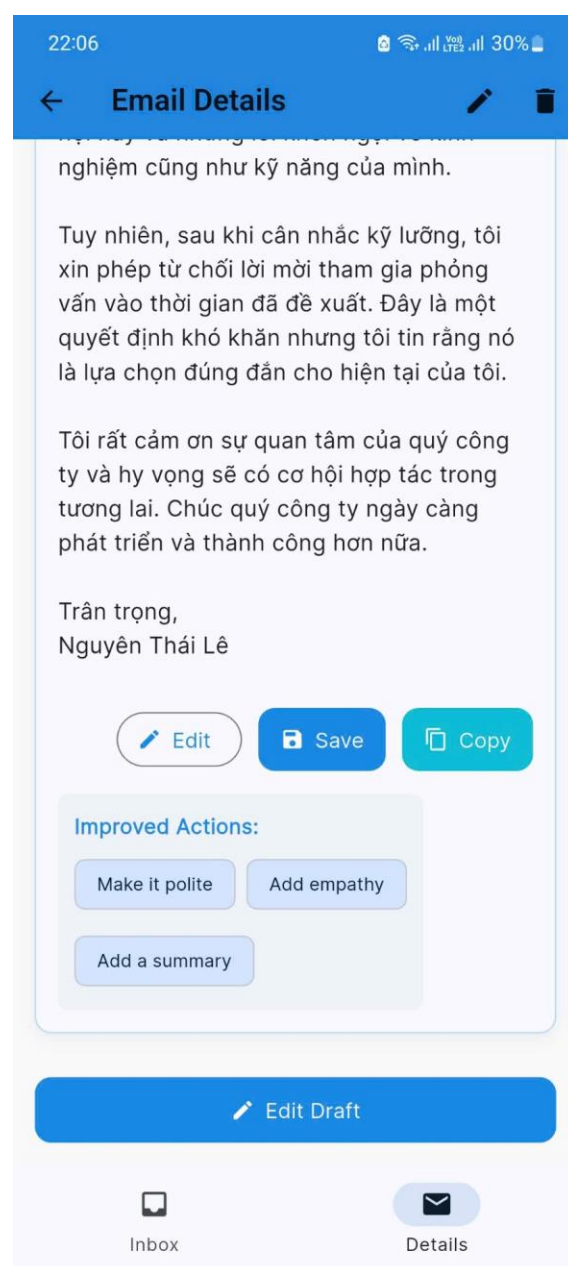
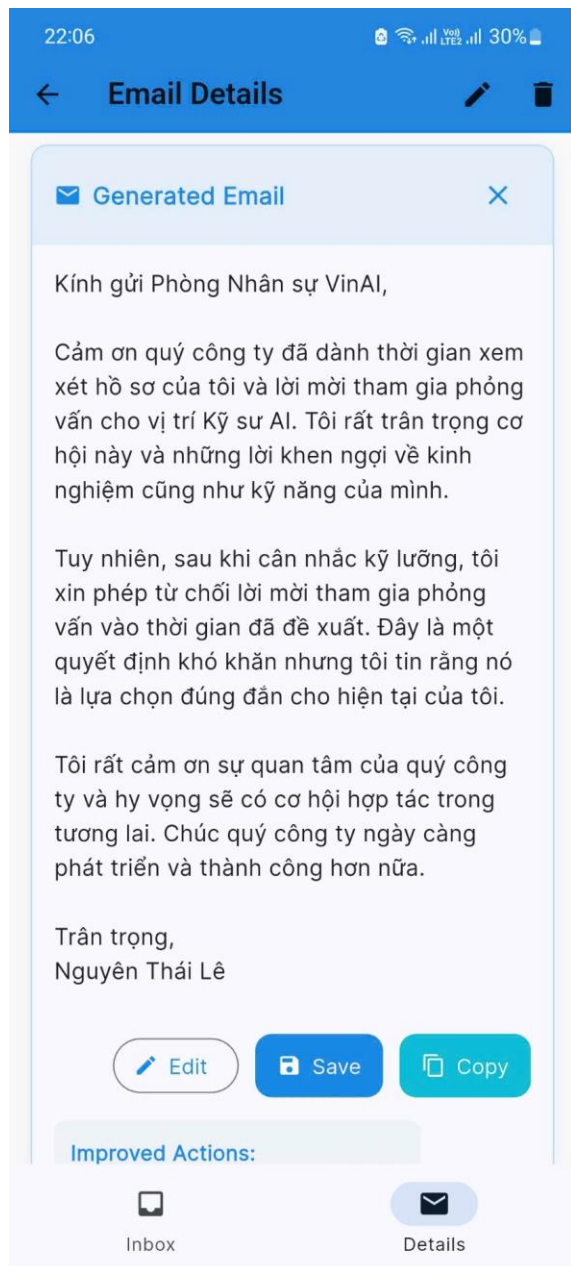


4.9 AI-Powered Email Drafting

- Compose AI-assisted emails
- Quick action buttons (Thanks, Sorry, etc.)
- Manage and edit drafts







22:06 VoLTE 29%

← Compose Email →

Từ
👤 Nguyễn Thái Lê <lnthai21@clc.fitus.>

To

Subject

Content

📧 Save Draft ➤ Send Email

4.10 Advanced features

Publish application to play store (alpha testing), website:

11:24

18.2 KB/s

← Google Play



NT Jarvis: AI chat box (Early Access)

advancedmobileclc21

Contains ads



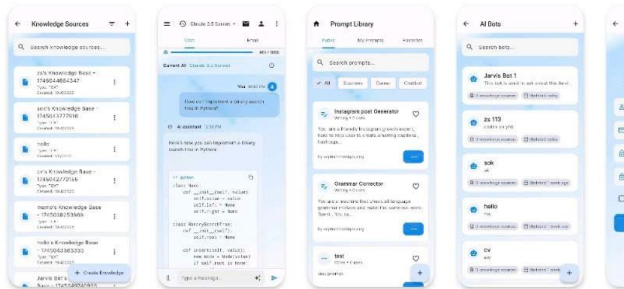
8.0 MB



Rated for 3+ ⓘ

Install

ⓘ This app is in development. Be one of the first to try it and provide feedback. [See details](#)



About this app



An AI chat box application using multiple models (Gemini, OpenAI,...)

Productivity

Early Access



Games



Apps



Search



Books

Help with coding

Claude 3.5 Sonnet

Unlimited

Current AI: Claude 3.5 Sonnet

You 10:13 PM

How do I implement a binary search tree in Python?

AI assistant 10:14 PM

Here's how you can implement a binary search tree in Python:

```
<> python
class Node:
    def __init__(self, value):
        self.value = value
        self.left = None
        self.right = None

class BinarySearchTree:
    def __init__(self):
        self.root = None

    def insert(self, value):
        new_node = Node(value)
        if self.root is None:
            self.root = new_node
            return

        current = self.root
        while True:
            if value < current.value:
                if current.left is None:
                    current.left = new_node
                    return
                current = current.left
            else:
                if current.right is None:
                    current.right = new_node
                    return
                current = current.right
```

Type a message...

CI / CD:

Flutter CI/CD

✓ [EMAIL AI] fix bug compose email #27

Re-run all jobs

Summary

Jobs

- build
- deploy_web

Run details

- Usage
- Workflow file

Triggered via push 1 hour ago

lenguyenthai123 pushed • cb76f80 • advance-feature

Status: Success

Total duration: 21m 3s

Artifacts: 2

flutter-ci.yml

on: push

build (19m 58s) → deploy_web (48s)

Artifacts

Produced during runtime

Name	Size	Digest		
app-release-apk	29.9 MB	sha256:f1292636b85402e198a941d56b154eda1b5f7c1b862...		
flutter-web-build	9.68 MB	sha256:79f9250099c64ff437799125b953f9e5517f3a5b8e5...		

Flutter CI/CD
[EMAIL AI] fix bug compose email #27
Re-run all jobs
...

Summary
Jobs
build
deploy_web
Run details
Usage
Workflow file

deploy_web
succeeded 38 minutes ago in 48s
Search logs

Set up job 0s
Checkout repository 5s
Download Web Artifact 2s
Install Firebase CLI 33s
Deploy to Firebase Hosting 5s

```

1 ▶ Run firebase deploy --only hosting --token ***
4 ⚠ Authenticating with "--token" is deprecated and will be removed in a future major version of "firebase-tools". Instead, use a service account key with
  "GOOGLE_APPLICATION_CREDENTIALS": https://cloud.google.com/docs/authentication/getting-started
5
6 === Deploying to 'my-flutter-web-32db6'...
7
8 i deploying hosting
9 i hosting[my-flutter-web-32db6]: beginning deploy...
10 i hosting[my-flutter-web-32db6]: found 35 files in build/web
11 i hosting: upload complete
12 ✓ hosting[my-flutter-web-32db6]: file upload complete
13 i hosting[my-flutter-web-32db6]: finalizing version...
14 ✓ hosting[my-flutter-web-32db6]: version finalized
15 i hosting[my-flutter-web-32db6]: releasing new version...
16 ✓ hosting[my-flutter-web-32db6]: release complete
17
18 ✓ Deploy complete!
19
20 Project Console: https://console.firebase.google.com/project/my-flutter-web-32db6/overview
21 Hosting URL: https://my-flutter-web-32db6.web.app

```

Post Checkout repository 0s

Link website: <https://my-flutter-web-32db6.web.app>

5. Self-Assessment

Chức năng		Điểm		Ghi chú	Thành viên đảm nhận
	TĐ	TĐG	GV		
1. Tổng quát					
Thiết kế UI/UX của ứng dụng	-5	0		Ứng dụng UI/UX dễ hiểu, đẹp và thân thiện người dùng	Cả nhóm
Kiến trúc của ứng dụng	-3	0		Cấu trúc code đẹp, phân tách rõ ràng business, components, services, actions, reducers.	Cả nhóm
Báo cáo	-1	0			Cả nhóm
Phim demo	-2	0		Link video phasing 1: https://youtu.be/JFa60vW_n-s Link video phasing 2:	Cả nhóm

				https://youtu.be/Up0f0xoU7Dc Link video phasing 3: https://drive.google.com/file/d/1HAMFUazJ2_wxUNo_GREOFVEcrwkDPOko/view?usp=sharing	
Quá trình thực hiện ứng dụng được đăng lên Git	-7	0			Cả nhóm
2. Xác thực và phân quyền					
Trang chủ	-0,5	0			LNThái
Đăng ký tài khoản	-0,5	0		Auth Sign Up	LNThái
Kiểm tra các ràng buộc về tên đăng nhập, mật khẩu nhập lại, ...	-0,5	0			LNThái
Kích hoạt tài khoản bằng email	-0,5	0		Update later	LNThái
Đăng nhập hệ thống với tài khoản đã tạo	-0,5	0		Auth Sign In	LNThái
Đăng nhập Google	-0,5	0		Update later	LNThái
Quên mật khẩu và làm mới mật khẩu bằng email	-0,5	0		Update later	LNThái
Đăng xuất tài khoản	-0,5	0		Auth Sign Out	LNThái
3. AI Chat					
Hiển thị nội dung chat	-1	0		Jarvis Get Conversations History	NNNam
Chat với AI Chat bot	-1	0		Jarvis Send Message	NNNam
Giảm số lượng token khi chat	-0,5	0			NNNam
Hỗ trợ thay đổi AI Agent	-0,5	0			NNNam

Tạo thread chat mới	-0,5	0		Jarvis Send Message (conversation history is empty)	NNNam
Xem danh sách lịch sử thread chat	-0,5	0		Jarvis Get Conversations	NNNam
Mở lịch sử chat	-0,5	0		Jarvis Get Conversations History	NNNam
4. Tạo và quản lý AI BOT					
Tạo AI BOT	-0,5	0		KB Create Bot	NNNam
Hiển thị/tìm kiếm AI BOT	-0,5	0		KB Get Bots	NNNam
Cập nhật và xoá AI BOT	-0,5	0		KB Update Bot + KB Delete Bot	NNNam
Cập nhật prompt cho AI BOT	-0,5	0		KB Update Bot (update instructions)	NNNam
Giao tiếp với AI BOT đã tạo qua Chat widget	-0,5	0		Jarvis Chat With Bot	NNNam
Thêm/xoá dữ liệu tri thức vào AI BOT	-0,5	0		KB Import Knowledge To Bot	NNNam
Preview và chat với AI BOT	-0,5	0		KB Ask Bot (chat with openAiThreadIdPlay)	NNNam
Publish AI Chat ra Slack, Telegram, Messenger	-0,5	0		KB Publish https://jarvis.cx/help/knowledge-base/publish-bot/	NNNam
5. Tạo bộ dữ liệu tri thức					
Thêm bộ dữ liệu tri thức	-0,5	0		KB Create Knowledge	LNThái
Hiển thị/tìm kiếm bộ dữ liệu tri thức	-0,5	0		KB Get Knowledges	LNThái
Disable/delete nguồn dữ liệu	-0,5	0		KB Delete Knowledge	LNThái
Nạp dữ liệu từ file	-0,5	0		KB Upload File + https://jarvis.cx/help/knowledge-base/publish-bot/	LNThái

				-base/connectors/file	
Nạp dữ liệu từ URL website	-0,5	0		KB Upload Web	LNThái
Nạp dữ liệu từ Google Drive	-0,5	0		KB Upload GG Drive (Pending) + https://jarvis.cx/help/knowledge-base/connectors/google-drive	LNThái
Nạp dữ liệu từ Slack	-0,5	0		KB Upload Slack https://jarvis.cx/help/knowledge-base/connectors/slack	LNThái
Nạp dữ liệu từ Confluence	-0,5	0		KB Upload Confluence + https://jarvis.cx/help/knowledge-base/connectors/confluence	LNThái
6. Quản lý và sử dụng prompt					
Hiển thị và tìm kiếm public prompt	-0,5	0		Jarvis Get Prompts (isPublic = true)	NNNam
Lọc prompt theo category	-0,5	0		Jarvis Get Prompts	NNNam
Thêm prompt vào favourite và xem danh sách favourite	-0,5	0		Jarvis Add Prompt To Favorite + Jarvis Get Prompts (isFavorite = true)	NNNam
Tạo mới 1 private prompt	-0,5	0		Jarvis Create Prompt (isPublic = false)	NNNam
Hiển thị và tìm kiếm private prompt	-0,5	0		Jarvis Get Prompts (isPublic = false)	NNNam
Cập nhật và xóa private prompt	-0,5	0		Jarvis Update Prompt + Jarvis Delete Prompt	NNNam
Sử dụng Prompt trong library	-0,5	0		Use content of prompt from list prompt	NNNam
Sử dụng nhanh prompt trong Chat với slash (/)	-0,5	0		Jarvis Get Prompts	NNNam
7. Nâng cấp tài khoản lên Pro & Monetization (IAP)					
Nâng cấp tài khoản	-0,5	0		Link 4242 4242 4242 4242	LNThái

Hiển thị thông tin tài khoản Pro và cập nhật số token thành unlimited	-0,5	0		Jarvis Get Usage + Jarvis Get Token	LNThái
Gắn code quảng cáo và kiếm tiền qua quảng cáo	-0,5	0			LNThái
Gắn IAP để nâng cấp lên TK PRO	-0,5	0			LNThái
8. Hỏi đáp trên ảnh & files					
Upload ảnh để chat	-0,5	0		Pending	LNThái
Chụp ảnh và chat với ảnh đã chụp	-0,5	0		Pending	NNNam
Screenshot và chat với screenshot	+0,5	0		Pending	
9. Soạn email với AI					
Tạo tab riêng cho soạn theo email	-0,5	0			LNThái
Thêm các AI actions để tạo draft email (Thanks, Sorry, Yes, No, Follow Up, Request for more information)	-0,5	0		Jarvis Reply Ideas + Jarvis Reponse Email	LNThái
10. Các chức năng nâng cao (cộng tối đa 1 điểm)					
Ứng dụng được publish trên store	0,25	0.25		Web hosting, Mobile app store (Apple store, Google Play store), Desktop app store (Apple store, Windows store)...	LNThái
Số lượng người dùng tải ứng dụng	0,25			Cứ 10 người dùng tải mới được +0,25đ. Tối đa được cộng 0,5 điểm.	
Sử dụng Google Analytics/Sentry/Crashlytics...	0,25			Mỗi thư viện phù hợp được +0,25. Tối đa được cộng 0.5 điểm.	
Cấu hình CI/CD cho project	0,25	0.25			NNNam

Total estimated point: 10.5đ.

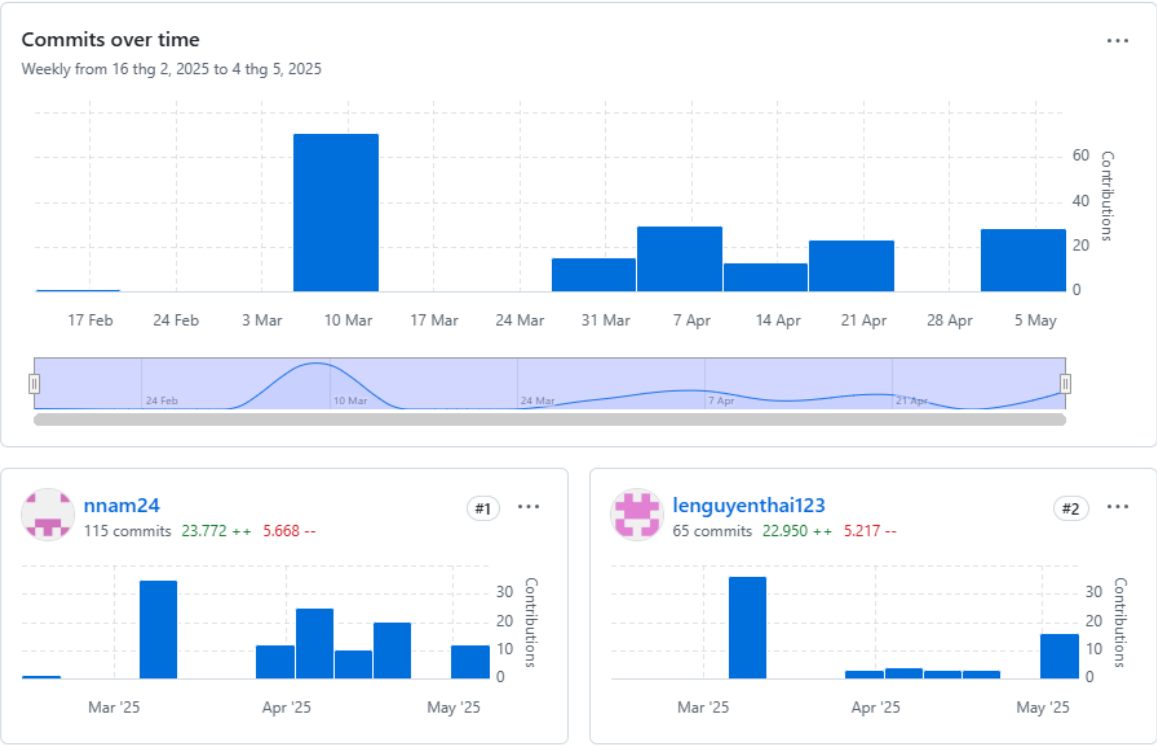
Contribution:

Contributors

Period: All

Contributions: Commits

Contributions per week to main, excluding merge commits



Conclusion:

Member Name	Contribution Rate
Lê Nguyên Thái	50%
Nguyễn Nhật Nam	50%

6. Conclusion

The **JARVIS AI Assistant Platform** was successfully developed as a feature-rich Flutter application. It offers robust AI capabilities with modern UI/UX, efficient architecture, and practical integrations.

The project demonstrates solid skills in app development, API integration, and user-centric design. Though some advanced features are pending, the foundation is complete and extensible.

7. References

- Flutter: <https://flutter.dev/docs>
- Provider: <https://pub.dev/packages/provider>
- Material Design: <https://material.io/design>
- JARVIS API Docs: [Welcome to Jarvis](#)