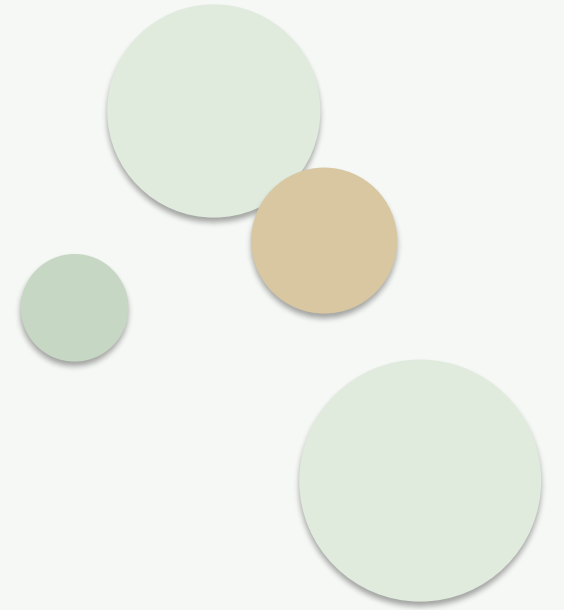


Bloomy: An AI-Powered Journaling Application

User-Controlled Mood Validation for Non-Clinical Emotional Reflection

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Why Bloomy?

The design problem is not only recording moods but also helping users reflect.

Manual tracking

Users select and record moods themselves, which can take effort and may not reflect the tone of a journal entry.

Limited feedback

A record of past moods is useful, but users may receive little personalised interpretation or reflection.

Sensitive information

Journal entries are personal. AI support needs clear boundaries, user control and careful data handling.

Bloomy's scope: everyday emotional reflection not through diagnosis, treatment or medical advice.

What Bloomy contributes

A practical integration of hosted AI, user control and engagement features.

1 Mood validation

Checks whether the written entry aligns with the user-selected mood.

2 Personalised reflection

Generates weekly reflections and short daily micro-insights.

3 User remains in control

Users can accept an AI suggestion or keep their original mood.

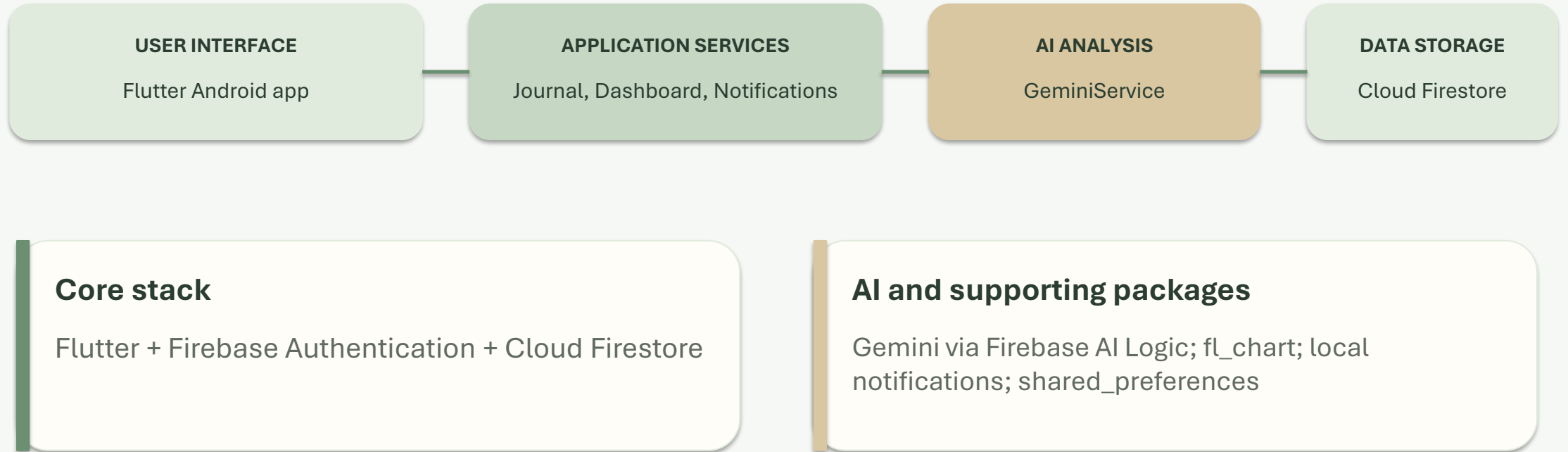
4 Quota-aware design

Uses structured JSON, caching, timeouts and graceful degradation.

No in-house model training, the system uses a hosted Gemini model.

Architecture and technology

Four layers separate the interface, application logic, AI tasks and stored data.



Journal data and cached AI outputs are scoped to the authenticated user.

How mood validation works

The AI suggests; the user decides.

- | | | |
|----|--------------------------|---|
| 01 | Write | User writes a journal entry and selects one of ten moods. |
| 02 | Analyse | Entry, selected mood and allowed mood list are sent to Gemini. |
| 03 | Structured result | Gemini returns JSON: match flag, suggested mood and short reason. |
| 04 | User choice | If there is a mismatch, user can switch to the suggestion or keep their mood. |
| 05 | Save and reflect | Final mood is stored; entries support analytics and cached reflections. |

Beyond AI: the journaling experience

Engagement features support consistency without shame-based messaging.

Mood analytics

Mood distribution, week-over-week comparisons and weekly reflection.

Reactive streak garden

Garden grows with journaling streak; weather reflects the latest mood.

Reflection goals

User-set journal goal unlocks a garden decoration when reached.

Happiness Jar

Revisits a saved positive memory from the user's journal history.

Make Me Laugh

Shows a random joke as a lightweight mood booster.

Practical tools

History keyword search, daily reminders, data export and account deletion.

How was Bloomy evaluated?

Three evaluation components, each answering a different question.

Functional testing

22 test cases

All 22 passed

Mood-validation check

10 constructed entries

10/10 expected outcomes

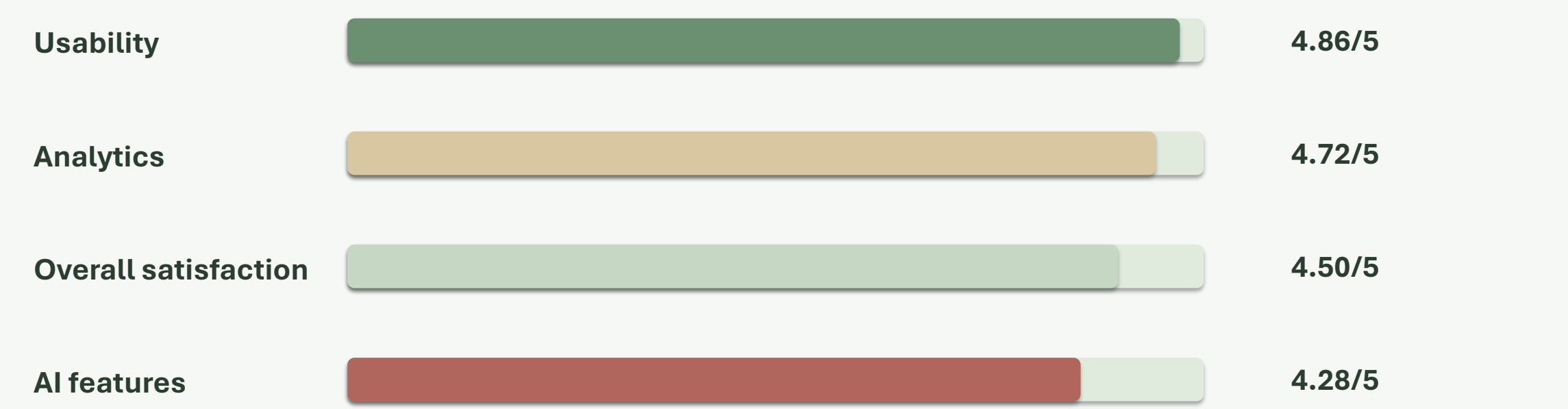
User acceptance survey

6 participants

27 Likert items reported in paper +
3 open-ended questions

What did the results show?

Mean ratings from the six-person user acceptance survey.



Key finding: the AI usefulness items were lowest (3.83/5 for mood validation and daily insight).

What did we learn?

Correct output alone does not guarantee that AI feels useful.

Finding 1 · Narrow task helps

A fixed mood list and structured output made the workflow predictable in the constructed cases.

Finding 2 · Design matters

Usability, analytics and the garden scored higher than the AI features.

Finding 3 · Hosted AI has limits

Quota exhaustion and model deprecation affected development; caching and graceful failure helped.

Finding 4 · Privacy trade-off

Journal text must be sent to a third-party model for AI features; app-side controls cannot govern provider handling.

What remains to be improved?

The current findings are promising but preliminary.

Current limitations

- Android only
- Six survey participants
- Ten clear-cut mood cases
- No long-term or clinical outcome evaluation

Future work

- Larger, more diverse study
- Ambiguous and mixed-emotion test entries
- Standardized usability measure
- Clearer AI opt-in and privacy disclosure
- Explore on-device/self-hosted models

Bloomy is a non-clinical self-reflection aid, not a diagnostic or crisis-support system.

Bloomy keeps the user in control.

- Integrated a hosted LLM into a practical Android journaling app.
- All 22 functional tests passed, the 10 constructed mood cases behaved as expected.
- Usability and analytics were rated highly, while AI usefulness needs further refinement.

Thank you.

