安卓字典

Deliverables:

Each team should submit the following items to Moodle. Submission systems will be created later.

1) A document file (at least 2 pages) with:
   - Results of your background research
   - A summary of your application. It may include images and diagrams if you feel they better convey your message. Basically, you should include the category, motivation, design and features of your application.
   - Contributions of each member (if your team consists of more than one member)
2) Source code of your application with a readme file stating how to compile and execute your application.
3) An introductory video (at most 5 minutes) demonstrating main features of your application and how to use it.

竞品对比

市面上的 xx 词典，界面不够简洁，不适合快速查找的任务；交互设计不够符合直觉，单词本设计冗余，不够轻量化。。。，容易引起审美疲劳。。。

交互的升级

- 双击任意词条快速返回搜索主页
- 在搜索结果页内，通过左滑/右滑将单词词条划出页面，可以将单词快速加入单词本
- 在搜索主页不键入内容，直接点击搜索，可以进入单词本，单词本中有所有加入的单词，按时间倒序排列，方便巩固和复习
- 在单词本中，如果已经掌握了一个单词，可以通过左滑/右滑将单词词条划出页面，可以将单词移除单词本

细节和彩蛋

- 单词和词组的模糊搜索
- 每个搜索出来的词条颜色会根据单词的字母有权重的决定，保持一定的随机性和统一

```
    public void Dye(String word_name, SearchViewHolder holder) {
        if (word_name.contains("l") || word_name.contains("L")) {

holder.back_linear.setBackgroundColor(context.getResources().getCol
or(R.color.colorForLover));
```

```
        } else if (word_name.contains("h") ||
word_name.contains("H")) {

holder.back_linear.setBackgroundColor(context.getResources().getCol
or(R.color.colorForHills));
        } else if (word_name.contains("w") ||
word_name.contains("W")) {

holder.back_linear.setBackgroundColor(context.getResources().getCol
or(R.color.colorForWater));
        } else if (word_name.contains("g") ||
word_name.contains("G")) {

holder.back_linear.setBackgroundColor(context.getResources().getCol
or(R.color.colorForGrass));
        } else if (word_name.contains("i") ||
word_name.contains("I")) {

holder.back_linear.setBackgroundColor(context.getResources().getCol
or(R.color.colorForIce));
        } else if (word_name.contains("d") ||
word_name.contains("D")) {

holder.back_linear.setBackgroundColor(context.getResources().getCol
or(R.color.colorForDancer));
        } else if (word_name.contains("a") ||
word_name.contains("A")) {

holder.back_linear.setBackgroundColor(context.getResources().getCol
or(R.color.colorForApple));
        } else if (word_name.contains("e") ||
word_name.contains("E")) {

holder.back_linear.setBackgroundColor(context.getResources().getCol
or(R.color.colorForElectric));
        }
    }
```

- 每个小时搜索框里的装饰性文字都会不一样，给用户增加探索乐趣

```
if (mHour < 6) {
```

```
                searchBar.setHint("THE MOON IS DOWN");

            } else if (mHour < 7) {
                searchBar.setHint("SUMMERTIME");

            } else if (mHour < 8) {
                searchBar.setHint("BLACK EYES");

            } else if (mHour < 9) {
                searchBar.setHint("SILVER LINING");

            } else if (mHour < 10) {
                searchBar.setHint("BRICK WALLS");

            } else if (mHour < 11) {
                searchBar.setHint("THE WOODS");

            } else if (mHour < 12) {
                searchBar.setHint("COASTLINE");

            } else if (mHour < 13) {
                searchBar.setHint("HARD OF HEARING");

            } else if (mHour < 14) {
                searchBar.setHint("FEELIN' ALRIGHT");

            } else if (mHour < 15) {
                searchBar.setHint("SWEET LOUISE");

            } else if (mHour < 16) {
                searchBar.setHint("SPIRITS");

            } else if (mHour < 17) {
                searchBar.setHint("HOMESICK");

            } else if (mHour < 18) {
                searchBar.setHint("SUNSETZ");

            } else if (mHour < 19) {
                searchBar.setHint("COUDS");

            } else if (mHour < 20) {
```

```
                searchBar.setHint("GLORY");

            } else if (mHour < 21) {
                searchBar.setHint("CHASIN' HONEY");

            } else if (mHour < 22) {
                searchBar.setHint("THE FLY");

            } else if (mHour < 23) {
                searchBar.setHint("WIDE EYES");

            } else {
                searchBar.setHint("LUA");
            }
```

Android Dictionary App

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1. Background Research

1.1 Competitor Analysis

We surveyed several leading Android dictionary applications and identified the following common shortcomings:

- **Cluttered User Interface**
  Most apps present a dense layout with multiple panels, tabs, and advertisements, making it difficult to find one word quickly.
- **Non-intuitive Interactions**
  Actions like adding a word to the “wordbook” or returning to the main search view often require several taps or menu traversals, which slows down the lookup flow.
- **Heavy “Wordbook” Module**
  Existing implementations of personal word lists tend to be full-featured (tags, categories, sharing), but at the cost of startup and scroll performance. Users who simply want to review recently added words experience unnecessary complexity.

- **Aesthetic Fatigue**
  Fixed color schemes and static placeholder text in the search bar grow stale over time, reducing user engagement and enjoyment.

These pain points informed our design goals for a streamlined, gesture-driven, and visually dynamic dictionary app.

2. Application Summary

2.1 Category

Educational / Productivity – a lightweight English–Chinese (or bilingual) dictionary and vocabulary trainer.

2.2 Motivation

- Enable **ultra-fast lookup** of unfamiliar words without distractions.
- Provide **one-tap gesture controls** instead of deep menu dives.
- Offer a **minimalist wordbook** that feels like a to-do list for vocabulary, not a database.
- Keep the UI **visually fresh** to reduce cognitive and aesthetic fatigue.

2.3 Design

2.3.1 Information Architecture

1. **Search Home** (default)
    - Central search bar with rotating hints (see “Easter Eggs” below).
    - Tapping the search button with an empty query opens the **Wordbook**.
2. **Search Results**
    - Displays all matching entries (words and multi-word phrases).
    - Each result card is **color-coded** based on letter frequency weighting.
3. **Wordbook**
    - Chronologically ordered list of words the user has added.
    - Allows immediate review and pruning of known items.

2.3.2 Interaction Flow

- **Double-tap** any result card → Returns instantly to the Search Home.
- **Swipe left or right** on a result card in Search Results → Adds that word to the Wordbook.
- **Swipe left or right** on a word in the Wordbook → Removes that word when you've mastered it.
- **Tap "Search"** with an empty query on Search Home → Opens the Wordbook.

2.4 Key Features

1. **Fuzzy Search**
    - Supports partial matches within words and across multi-word phrases.
2. **Dynamic Color Coding**
    - Assigns each entry a background color by checking for the presence of certain letters.
    - Keeps a consistent yet varied palette so the list never looks monotonous.

```
public void Dye(String word, SearchViewHolder holder) {
    if (word.toLowerCase().contains("l")) {
        holder.backLinear.setBackgroundColor(

 context.getResources().getColor(R.color.colorForLover));
    } else if (word.toLowerCase().contains("h")) {
        holder.backLinear.setBackgroundColor(

 context.getResources().getColor(R.color.colorForHills));
    }
    // …additional conditions for 'w', 'g', 'i', 'd', 'a',
'e'…
}
```

3. **Hourly Hint Text ("Easter Eggs")**
    - The search bar's placeholder changes every hour to a short phrase or lyric, encouraging playful exploration.

```
int hour = Calendar.getInstance().get(Calendar.HOUR_OF_DAY);
if (hour < 6) {
    searchBar.setHint("THE MOON IS DOWN");
} else if (hour < 7) {
    searchBar.setHint("SUMMERTIME");
}
// …continues for each hour up to …
else {
    searchBar.setHint("LUA");
}
```

4. **Lightweight Wordbook**
    - No tags or complex folders.
    - Words sorted by time of addition, so recent items are at the top for quick review.

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3. Contributions

TEAM MEMBER	ROLE & TASKS
Alice	Lead UI/UX Designer; defined color schemes, mockups, and interactive prototypes.
Bob	Android Engineer; implemented search algorithms, gesture controls, and data persistence.
Carol	QA & Documentation; conducted usability tests, wrote this project report, and prepared the demo video.
