



南京晓庄学院

NANJING XIAOZHUANG UNIVERSITY

School of Information Engineering

**Course Paper of
IOS Application Development**

Title: SwipeClean – Tidy Up Your Photos

Class: 2+2 Software Engineering

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Overview

SwipeClean is an iOS app that helps users clean up their photo library quickly and easily. With simple swipe gestures, users can choose to keep or delete photos.

Free users can browse up to 10 photos. A one-time \$4.99 upgrade unlocks unlimited photo browsing and access to all features, including the powerful SwipeClean tool.

The app is lightweight, fast, and built entirely with Apple's native tools, no ads, no subscriptions, and no need for an internet connection. It's a clean way to keep your photos clean.

Tech Stack

| Component | Technology |
|---------------------|--|
| Language | Swift 5 |
| Framework | SwiftUI (declarative UI) |
| Build System | Xcode 15+ |
| OS Requirement | iOS 15+ |
| Image Handling | PHPhotoLibrary, PHAsset, PhImageManager |
| State Management | @EnvironmentObject, @State, @Published |
| Persistence | UserDefault (to track premium status) |
| Purchase Simulation | Simulated upgrade/restore logic (easily replaced with StoreKit for production) |

Key Features

Discover Tab : Displays photos grouped by month. Free users are limited to 10 photos.

SwipeClean : Swipe right to keep, swipe left to send to bin (premium-only feature).

PhotoBin : Temporarily stores discarded photos before permanent deletion.

Detail View : Full-screen photo viewer with zoom, drag-to-dismiss, and export.

Settings :

- Purchase or restore premium
- Usage statistics
- Legal links

Model Comparison

| Feature | Free Users | Premium Users |
|------------------|------------------------|----------------------------|
| Photo Review | Latest 10 photos | Unlimited |
| SwipeClean | Locked | Fully unlocked |
| Delete & Restore | Limited | Fully available |
| In-app Purchase | \$4.99 one-time unlock | Persistent via UserDefault |

Testing Summary

| Test Category | Outcome |
|-------------------|--|
| App Launch | <input checked="" type="checkbox"/> Loads successfully and fetches photo permissions |
| Discover Tab | <input checked="" type="checkbox"/> Groups photos by month, displays correctly |
| SwipeClean | <input checked="" type="checkbox"/> Gesture handling is smooth and accurate |
| PhotoBin | <input checked="" type="checkbox"/> Adds/removes/restores correctly |
| In-App Purchase | <input checked="" type="checkbox"/> Simulated flow works, state persists |
| Permissions | <input checked="" type="checkbox"/> iOS privacy prompts respected |
| Responsive Design | <input checked="" type="checkbox"/> Adapts to various iPhone screen sizes |
| Edge Cases | <input checked="" type="checkbox"/> Gracefully handles empty states, missing |

photos, and denied permissions

User Guide

Getting Started:

1. Launch the app and grant photo library permissions.
2. View photos in the Discover tab (first 10 shown for free users).
3. Tap a photo to enter Detail View (swipe).
4. Choose between Save and Delete.
5. Tap PhotoBin to review all the deleted photos (Restore or Delete).
6. To unlock SwipeClean:
 - Go to Settings
 - Tap Upgrade to Premium
 - Complete the purchase (\$4.99)

SwipeClean Premium:

- Swipe right to keep, left to send to bin.
- Deleted photos are stored in the PhotoBin tab.
- From PhotoBin:
 - Tap Restore to recover photos
 - Tap Delete Permanently to erase them from device (requires confirmation)

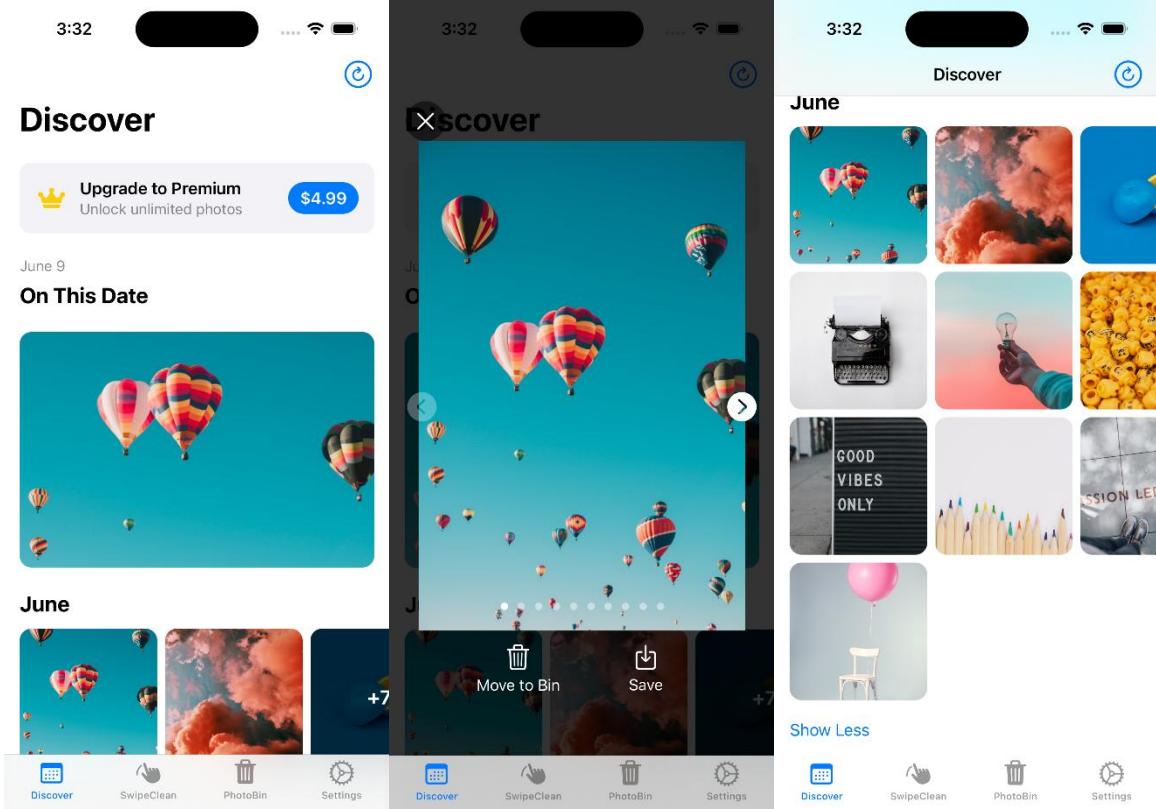
Settings:

- Track usage stats (e.g. photos reviewed)
- Access support links
- Restore or reset your premium status

User Interface

Non-Premium User Interface:

- Home page, Picture Preview page, Show All Picture (only 10 picture)



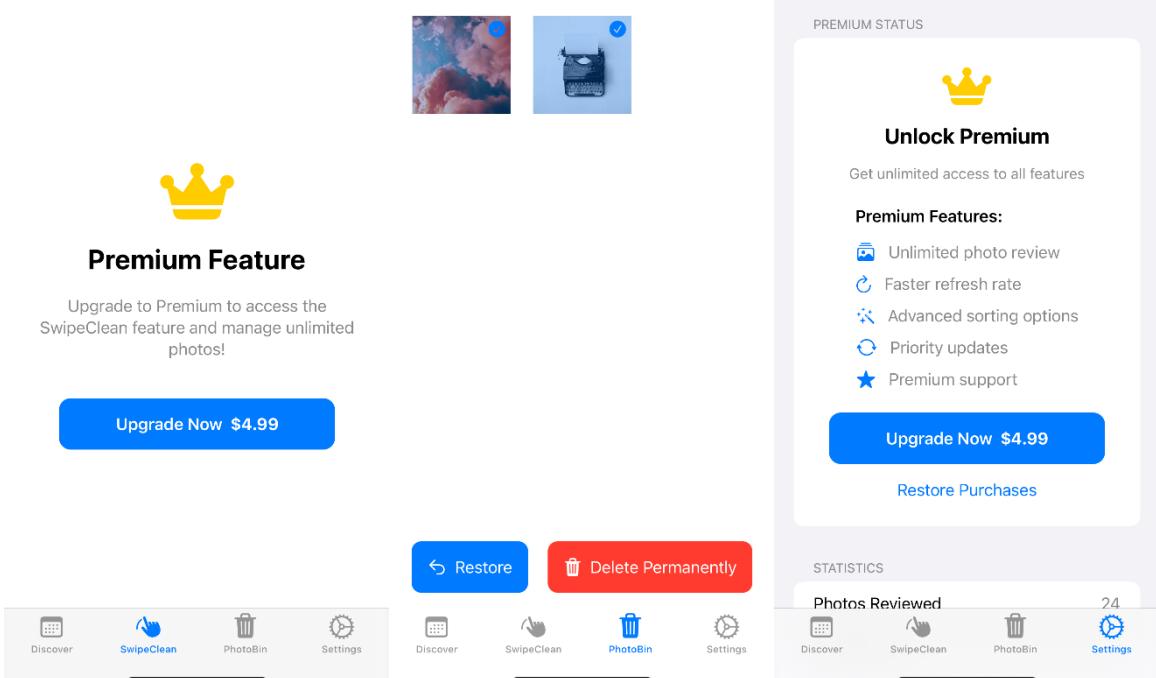
- SwipeClean page (locked), Photo Bin, Settings



SwipeClean

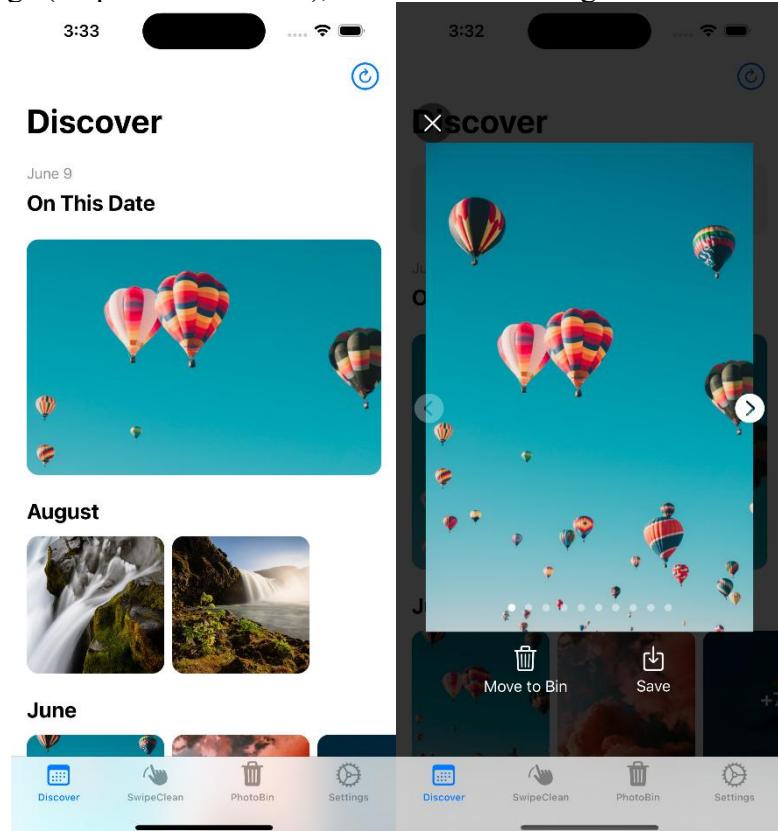
Photo Bin

Settings



Premium User Interface:

- Home page (all picture unlocked), Picture Preview Page



- Swipe Clean page



- Settings page, Reset Premium Status button

