

# QR Craft Milestone #4 Requirements

This document outlines the requirements for the fourth development milestone (Milestone #4) of the QR Craft application.

Each milestone will be accompanied by a dedicated requirements document and an updated Figma file. All current milestones and design assets are available in the project's Discord community channel.

The mockups define the intended appearance and behavior of the app and its components. The app uses a custom visual theme and does not require support for light or dark modes.

While the mockups define layout and design, you are free to decide how to technically implement certain elements — for example, how camera permission dialogs, loading indicators, or error messages are displayed.

You can find the QR Craft **mockups here**:

<https://www.figma.com/design/cyboRIV1IOA5UQmhLGDAIE/QR-Craft?node-id=12-1794>

## Milestone #4 Goal

In this milestone, QR Craft expands its feature set with **advanced utilities** for managing and interacting with QR codes.

Users will be able to scan QR codes directly from images stored on their device, mark selected QR codes as favorites for quick access, and save generated or scanned codes to local storage via a new Save button.

## Icons

You may use Material Design icons where appropriate. If a suitable Material icon is not available, use the custom icons provided in the Figma mockups.

## Adaptive Layouts

The mockups provide two layout versions:

- for mobile devices (**up to 600dp**)
- for wider screens (**from 600dp and above**)

Both versions must be implemented in the app as shown in the provided designs.

# Technical Requirements

## 📷 Main Screen — QR Code Scanning Updates

The main scanning screen receives two important UI additions in this milestone:

### Flashlight Toggle

- A new flashlight icon is displayed in the **top-left corner** of the scanning frame.
- Tapping the icon toggles the device's flashlight on or off.
- The icon visually reflects the current state (on or off).
- The flashlight remains active while scanning until turned off manually.
- If the device does not support flashlight functionality, the icon remains visible but either: becomes inactive (non-clickable)



### Image Picker Button

- A new image gallery icon is shown in the **top-right corner** of the scanning frame.
- Tapping it opens the system image picker to allow the user to choose a photo from device storage.
- After an image is selected:
  - A centered loading spinner appears over the scanner area with the label: "**Loading...**"
  - The app attempts to detect a QR code in the selected image.
  - If a QR code is found, the user is navigated to the **Scan Result Screen**.
  - If no QR code is detected, a centered modal appears with the message: "**No QR-codes found**".
  - The error message fades out automatically after a few seconds or on user tap.





## Scan Result Updates

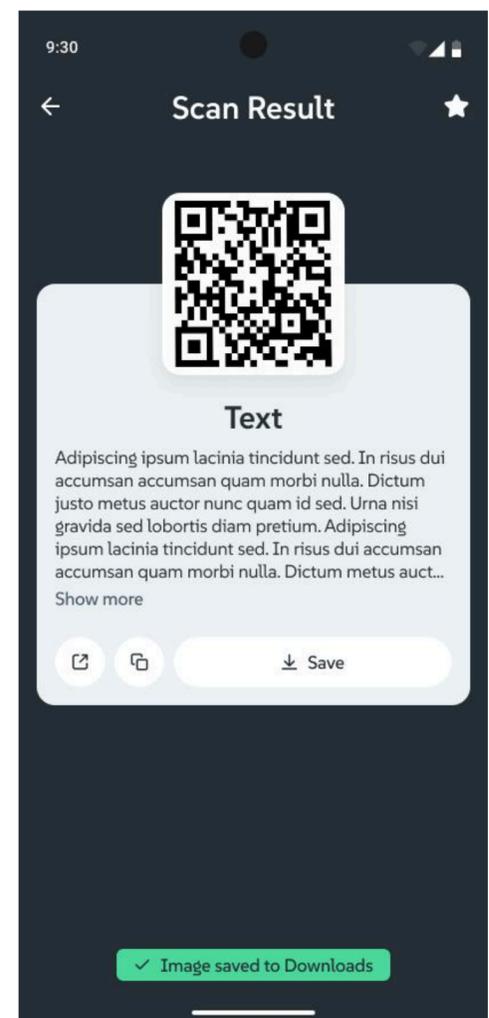
The Scan Result screen introduces new interactive elements and layout refinements in this milestone.

### Favorite Icon

- A new star icon (★) appears in the **top-right corner** of the screen.
- Tapping the icon toggles the QR code as a favorite.
- Icon states:
  - **Outlined** star when not favorited.
  - **Filled** star when marked as favorite.
- The favorite status is stored locally and synced with the Scan History screen.

### Save Button

- A new **Save** button is placed to the right of the Share and Copy buttons.
- It appears as a rounded rectangle with a download icon and the **label Save**.
- Tapping this button saves the displayed QR code as a PNG image to the device's **Downloads** folder.
- For compatibility with modern Android versions (Android 10+), the app uses the **MediaStore** API with:  
`RELATIVE_PATH = Environment.DIRECTORY_DOWNLOADS`
  - This approach does not require any storage permission from the user.
- Upon success, a Snackbar appears with the message: **"Image saved to Downloads"**
- If saving fails, a fallback error message should be displayed.



### Share & Copy Buttons

- The existing Share and Copy buttons are now smaller and circular.
- They appear to the left of the Save button and maintain equal height.
- Functional behavior remains unchanged:
  - **Share** — opens the system share sheet.
  - **Copy** — copies the QR code content to the clipboard.

## Scan History Improvements

The Scan History screen now includes support for managing favorite QR codes.

### Favorite Toggle in History List

- Each list item (in both **Scanned** and **Generated** tabs) now includes a star icon in the top-right corner.
- Tapping the star adds or removes the QR code from favorites.
- Visual states:
  - Outlined star when not favorited.
  - Filled star when favorited.
- **Favorited items are always displayed at the top of the list**, regardless of creation date.
- Sorting rules:
  - a. Favorited items — sorted from newest to oldest.
  - b. Non-favorited items — also sorted from newest to oldest.
- This behavior applies to both tabs: **Scanned** and **Generated**.

### Preview Screen Behavior

- Tapping any item in the history list opens the **Preview Screen**.
- The Preview Screen mirrors the layout and functionality of the Scan Result screen:
  - The user can toggle the favorite status via the star icon.
  - The **Save** button allows exporting the QR code image to the Downloads folder.
  - **Share** and **Copy** buttons remain available.
- Any changes made on the Preview Screen (e.g. favoriting) are **automatically reflected in the history list**.

