

# **Cornerstone Building Brands - Android App Implementation Guide**

## **Project Structure**

```
app/
├── src/
│   └── main/
│       ├── java/com/cornerstone/buildingbrands/
│           ├── activities/
│           │   ├── MainActivity.java
│           │   ├── LoginActivity.java
│           │   ├── ScannerActivity.java
│           │   ├── ForgotPasswordActivity.java
│           │   ├── ProfileActivity.java
│           │   └── SettingsActivity.java
│           ├── fragments/
│           │   ├── DailyProductionFragment.java
│           │   ├── HistoryFragment.java
│           │   ├── RepairsFragment.java
│           │   └── UnitsFragment.java
│           ├── adapters/
│           │   ├── ScanHistoryAdapter.java
│           │   ├── RepairsAdapter.java
│           │   └── UnitsAdapter.java
│           ├── models/
│           │   ├── ScanHistoryItem.java
│           │   ├── RepairItem.java
│           │   └── UnitItem.java
│           ├── utils/
│           │   ├── SuccessDialogHelper.java
│           │   └── Constants.java
│           └── api/
│               └── ApiService.java
└── res/
    └── layout/
        ├── activity_main.xml
        ├── activity_login.xml
        ├── activity_scanner.xml
        ├── activity_forgot_password.xml
        ├── fragment_scan_history.xml
        ├── fragment_daily_production.xml
        ├── fragment_repairs.xml
        ├── fragment_units.xml
        ├── item_scan_history.xml
        ├── item_repair.xml
        ├── item_unit.xml
        └── dialog_success.xml
```

```
|.....|...└ dialog_scan_result.xml  
|.....|└ drawable/  
|.....|   └ button_green_rounded.xml  
|.....|   └ button_green_light_rounded.xml  
|.....|   └ edit_text_background.xml  
|.....|   └ card_background.xml  
|.....|   └ status_badge_green.xml  
|.....|   └ status_badge_orange.xml  
|.....|   └ dialog_background_green.xml  
|.....|   └ dialog_background_red.xml  
|.....|   └ dialog_background_white.xml  
|.....|   └ ic_*.xml (various icons)  
|.....|└ anim/  
|.....|   └ slide_in_right.xml  
|.....|   └ slide_out_left.xml  
|.....|   └ fade_in.xml  
|.....|   └ fade_out.xml  
|.....|   └ scale_up.xml  
|.....|   └ slide_up.xml  
|.....|└ menu/  
|.....|   └ bottom_navigation_menu.xml  
|.....|└ color/  
|.....|   └ bottom_nav_selector.xml  
|.....|└ values/  
|.....|   └ colors.xml  
|.....|   └ strings.xml  
|.....|   └ styles.xml  
|.....|   └ themes.xml
```

## Implementation Steps

## 1. Create a New Android Project

- Open Android Studio
  - Create New Project → Empty Activity
  - Package name: com.cornerstone.buildingbrands
  - Language: Java
  - Minimum SDK: API 21 (Android 5.0)

## 2. Add Dependencies

Add the following to your `app/build.gradle`:

```
groovy

android {
    viewBinding {
        enabled = true
    }
}

dependencies {
    // Core Android dependencies
    implementation 'androidx.appcompat:appcompat:1.6.1'
    implementation 'com.google.android.material:material:1.9.0'
    implementation 'androidx.constraintlayout:constraintlayout:2.1.4'

    // UI Components
    implementation 'androidx.recyclerview:recyclerview:1.3.1'
    implementation 'androidx.cardview:cardview:1.0.0'
    implementation 'androidx.fragment:fragment:1.6.1'

    // Barcode Scanner
    implementation 'me.dm7.barcodescanner:zxing:1.9.13'
    implementation 'com.google.zxing:core:3.5.1'

    // Navigation
    implementation 'androidx.navigation:navigation-fragment:2.7.1'
    implementation 'androidx.navigation:navigation-ui:2.7.1'
}
```

### 3. Add Permissions

In `AndroidManifest.xml`:

xml

```
<uses-permission android:name="android.permission.CAMERA" />
<uses-permission android:name="android.permission.INTERNET" />

<application
    android:theme="@style/Theme.CornerstoneBuilding">

    <activity
        android:name=".activities.LoginActivity"
        android:theme="@style/Theme.CornerstoneBuilding.NoActionBar">
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>

    <activity
        android:name=".activities.MainActivity"
        android:theme="@style/Theme.CornerstoneBuilding.NoActionBar" />

    <activity
        android:name=".activities.ScannerActivity"
        android:theme="@style/Theme.CornerstoneBuilding.NoActionBar" />

    <!-- Add other activities -->
</application>
```

## 4. Create Color Resources

In `res/values/colors.xml`:

xml

```

<?xml version="1.0" encoding="utf-8"?>
<resources>
.... <color name="primary_green">#27AE60</color>
.... <color name="primary_green_light">#B8E6B8</color>
.... <color name="primary_dark">#2C3E50</color>
.... <color name="text_primary">#2C3E50</color>
.... <color name="text_secondary">#7F8C8D</color>
.... <color name="text_light">#95A5A6</color>
.... <color name="background">#F5F5F5</color>
.... <color name="white">#FFFFFF</color>
.... <color name="error">#E74C3C</color>
.... <color name="warning">#F39C12</color>
.... <color name="success">#27AE60</color>
</resources>

```

## 5. Create Theme

In `res/values/themes.xml`:

```

xml

<resources>
    <style name="Theme.CornerstoneBuilding" parent="Theme.MaterialComponents.Light.DarkActionBar">
        .... <item name="colorPrimary">@color/primary_green</item>
        .... <item name="colorPrimaryVariant">@color/primary_dark</item>
        .... <item name="colorOnPrimary">@color/white</item>
        .... <item name="android:statusBarColor">@color/primary_dark</item>
    </style>

    <style name="Theme.CornerstoneBuilding.NoActionBar">
        .... <item name="windowActionBar">false</item>
        .... <item name="windowNoTitle">true</item>
    </style>
</resources>

```

## 6. Key Features Implementation

### Navigation Flow

1. **Login → Main Activity:** Use Intent with slide animation
2. **Main Activity → Scanner:** Start activity with camera permission check
3. **Bottom Navigation:** Fragment transactions with fade animations

#### 4. Success Dialogs: Auto-dismiss after 2 seconds with scale animation

### Data Management

- Use SharedPreferences for login state
- Implement Room database for offline storage (optional)
- Create API service with Retrofit for backend communication

### Scanner Implementation

- Request camera permission at runtime
- Use ZXing library for barcode scanning
- Display results in custom dialog
- Save scan history to local database

## 7. Testing Checklist

- Login flow with validation
- Navigation between all screens
- Scanner functionality with permissions
- Success dialog animations
- Data persistence across app restarts
- Smooth transitions between activities
- Bottom navigation state preservation
- Proper back button handling

## 8. Additional Screens to Implement

Based on the PDF, you'll need to create these additional activities/fragments:

- ForgotPasswordActivity
- ProfileActivity
- SettingsActivity
- DailyProductionFragment
- RepairsFragment (with job number search)
- UnitsFragment (with date filter)

## 9. Best Practices

- Use ViewBinding for type-safe view access

- Implement proper error handling
- Add loading states for network operations
- Use string resources for all text
- Implement proper lifecycle management
- Add appropriate null checks
- Follow Material Design guidelines

## 10. Icon Resources

You'll need to create or download these vector icons:

- ic\_logo (Cornerstone logo)
- ic\_box (for Daily Prod)
- ic\_history
- ic\_camera (for Scanner)
- ic\_wrench (for Repairs)
- ic\_grid (for Units)
- ic\_settings
- ic\_profile
- ic\_logout

You can use Material Design Icons or create custom vectors in Android Studio's Vector Asset Studio.