Next Android Technical Challenge

- This project use DummyJSON's products api (https://dummyjson.com/docs/products)

- Through this technical challenge document there will be User Stories and reports of bugs. Please take note of priority, the order of these tasks make not be in priority order

- The designs may have elements that you don't currently have time for or lack data for, this can if you feel appropriate be ignored. If certain design elements are currently impractical due to time constraints or lack of necessary data, you have the option to disregard them.

- This is primarily a test of your technical ability, while you may use AI, we ask that you provide notes of the prompts and agents you use if you use them during the completion of the challenge.

- At least one User Story or bug should be covered in either unit tests or UI tests

- You should aim to timebox this challenge to a maximum of 6 hours. It is not expected to complete all User Stories and Bugs. However please have a prepared plan of implementation to bring at the following interview.

User Stories

User Story 1 - Implement List Tile UI

Priority - 1
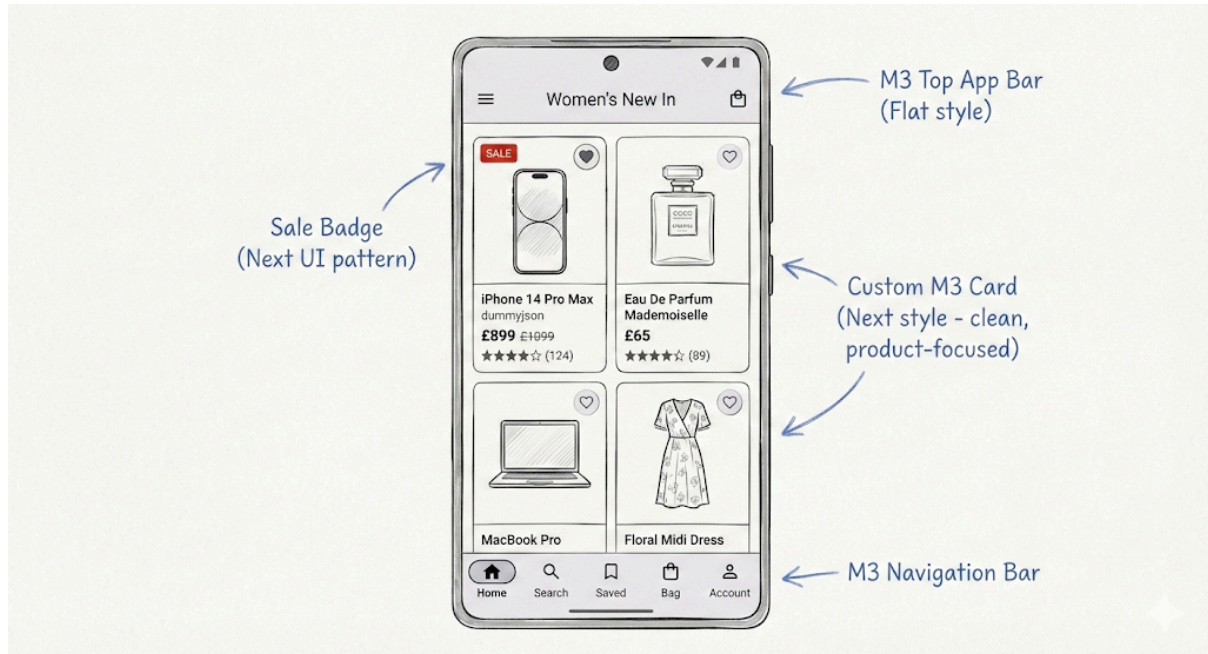
As a User, I would like to interact with a well-structured and informative list of products, where each item (list tile) clearly displays the essential product details, so that I can quickly and efficiently identify and evaluate products of interest without needing to click into each product's detail page.

The implemented List Tile UI must clearly and accurately display the following mandatory product attributes to meet the user's need for quick information access:

1. **Product Title/Name:**
   - **Requirement:** The full, official name of the product.
   - **Format:** Must be prominent and clearly legible. Max Line length should be 2
2. **Product Image/Thumbnail:**
   - **Requirement:** A high-quality, representative image of the product.
   - **Format:** Must be displayed prominently, typically on the top of the list tile, to provide a strong visual cue. Placeholder images or an 'Image Not Available' indicator should be used if the main product image is missing.
3. **Product Brand/Manufacturer:**
   - **Requirement:** The name of the brand or manufacturer associated with the product.
   - **Format:** Should be clearly distinguished from the product title, often displayed in a secondary position or differentiated text style
4. **Product Price:**
   - **Requirement:** The current selling price of the product, including the relevant currency symbol.

User Story 2 - Product List Grid Layout

Priority - 3

As a user, I want the product listing views to be optimized for maximum product visibility across a range of devices and orientations,

So that I can browse and compare more products without needing to scroll extensively, leading to a faster and more efficient shopping experience.

Specific Display Targets:

- **Portrait Mobile Phone:** The interface should be able to comfortably display a minimum of **two (2) product items** side-by-side or stacked densely within the viewport without requiring initial scrolling.
- **Large Landscape Tablet (or similar large screen/desktop view):** The interface must be optimized to display up to **eight (8) product items** in a grid layout. This could be achieved through a 4x2 or 2x4 grid structure, depending on the available screen real estate and aspect ratio of the product imagery.

User Story 3 - Enhanced Product Search Functionality

Priority - 4

As a user of the application, I require a robust and intuitive search capability that allows me to quickly find specific products or product categories. For instance, if I input the term "Jeans" into the search bar, the system should process this query and immediately present a curated results page showcasing all currently available jeans within the store's inventory.

User Story 4 - Implement Product Details Page

Priority - 2
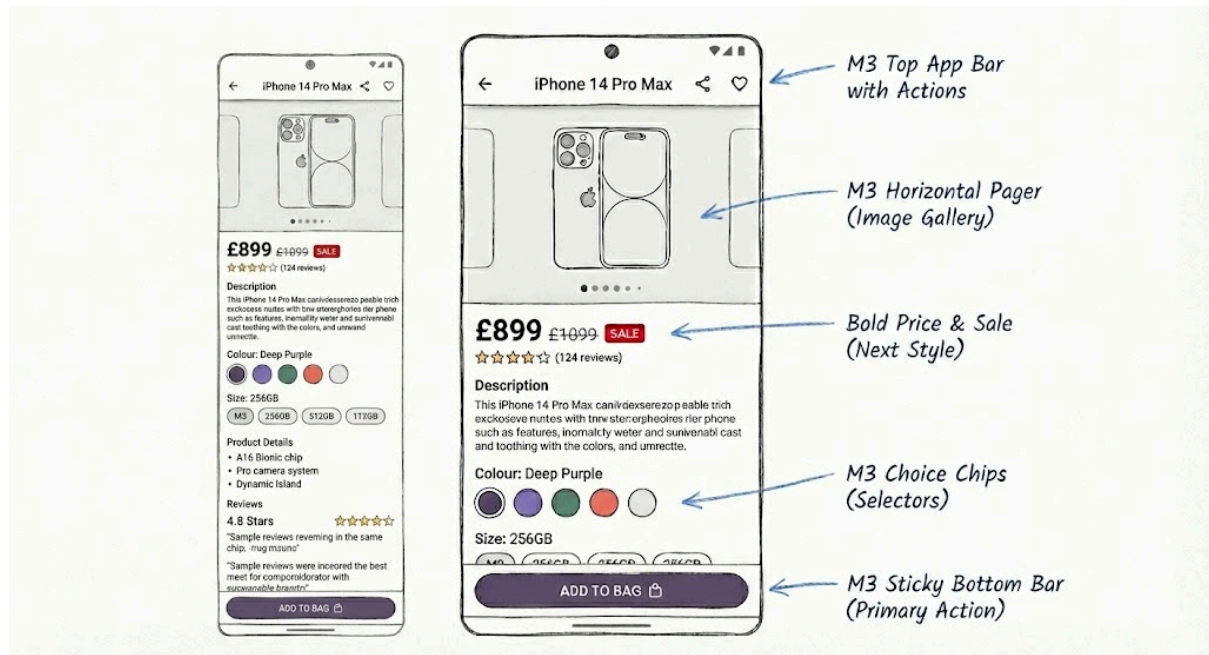
As a User, I need the ability to access and view comprehensive, detailed information about a specific product. This detailed view must be presented on a separate, dedicated screen or page, ensuring a focused and uninterrupted experience for reviewing all relevant product attributes, specifications, and supplementary content. This new screen should be easily accessible from the primary product listing or a similar summary view.

The information displayed should include:

- Full product name and SKU.
- Multiple high-resolution images/videos (with zooming and swiping functionality).
- Price, including any sales, discounts, or special offers.
- Detailed product description (with formatting for readability).
- Customer ratings.
- Warranty, return, and support information.
- "Add to Cart" call-to-action buttons.

User Story 5 - Implement Transition between PLP and PDP

Priority - 3

User Story: As a user, I want the transition from the Product Listing Page (PLP) to the Product Display Page (PDP) to be a smooth, engaging, and predictable experience.

Detailed Requirements:

1. **Entry Transition (PLP to PDP):**
   - The Product Display Page (PDP) content must visually slide in from the bottom of the screen.
   - Simultaneously, the underlying Product Listing Page (PLP) content should perform a distinct, gentle fade-away effect.
2. **Exit Transition (PDP to PLP):**
   - Upon exiting the PDP (e.g., by tapping a back button or using a system back action), the transition must be the precise visual reverse of the entry.
   - The PDP should slide back down and off the screen (out of the viewport).
   - As the PDP slides away, the PLP content must concurrently fade back in, returning to its full opacity, seamlessly restoring the previous context.
3. **Predictive Back Gesture Support:**
   - The transition must fully support platform-native predictive back gestures (e.g., Android's predictive back or similar forthcoming OS features).
   - When a user initiates the back gesture, the exit animation (PDP sliding down and PLP fading in) should be *scrubbable* by the user's finger movement.
   - The user should be able to partially reveal the underlying PLP and see the PDP move proportionally to their gesture.
   - If the gesture is released before completion, the PDP should either spring back to its fully open state or complete the transition to the PLP.
   - If the gesture is fully completed, the animation should finish smoothly, taking the user back to the PLP. This predictive interaction ensures the user feels in control and knows exactly where the 'back' action will take them *before* it happens.

Bugs

Bug 1 - Crash on app load

Priority - 1
Users have reported that the app immediately crashes upon loading the app

Bug 2 - UI Elements are below the System bars

Priority - 2
Currently the list ui is being displayed below the System UI, making it impossible to interact with, and provides poor accessibility

Bug 3 - Text is magenta

Priority - 3
Currently the text displays as Magenta. This should be a natural back contrast colour between the background and the text

Bug 4 - Requests are taking too long

Priority - 2
The app feels sluggish and requests feel like they are taking too long to load