Week 6 Lecture

Navigation

01

Project Demo

What are we building this week?

02

Navigation

Navigate between different screens in your app

03

Material Design

Consistent UI styling and user interactions

Week 6 Project Updates

- Implementing app navigation using the Navigation architecture component
- Adding a WeeklyForecastFragment
- Adding bottom navigation to our app

Project Demo

What are we building this week?

Navigation

Move between screens in your app

Navigation Architecture Component

What is the Navigation component?

Navigation Component

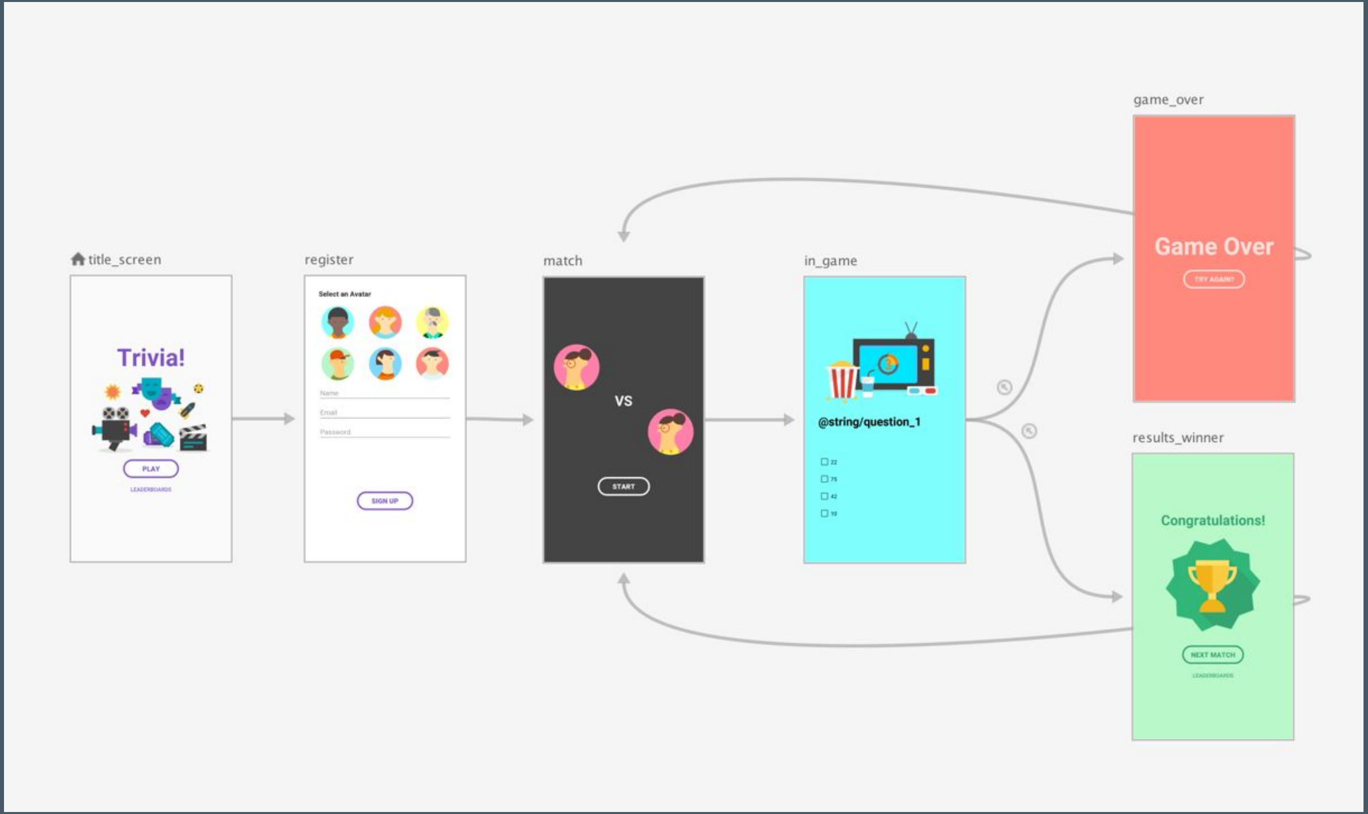
- Android Jetpack Architecture Component library
- Manages fragment transactions
- Provides navigation graph
- Navigation design editor
- Safe-args for fragment params

What problems does the Navigation component aim to solve?

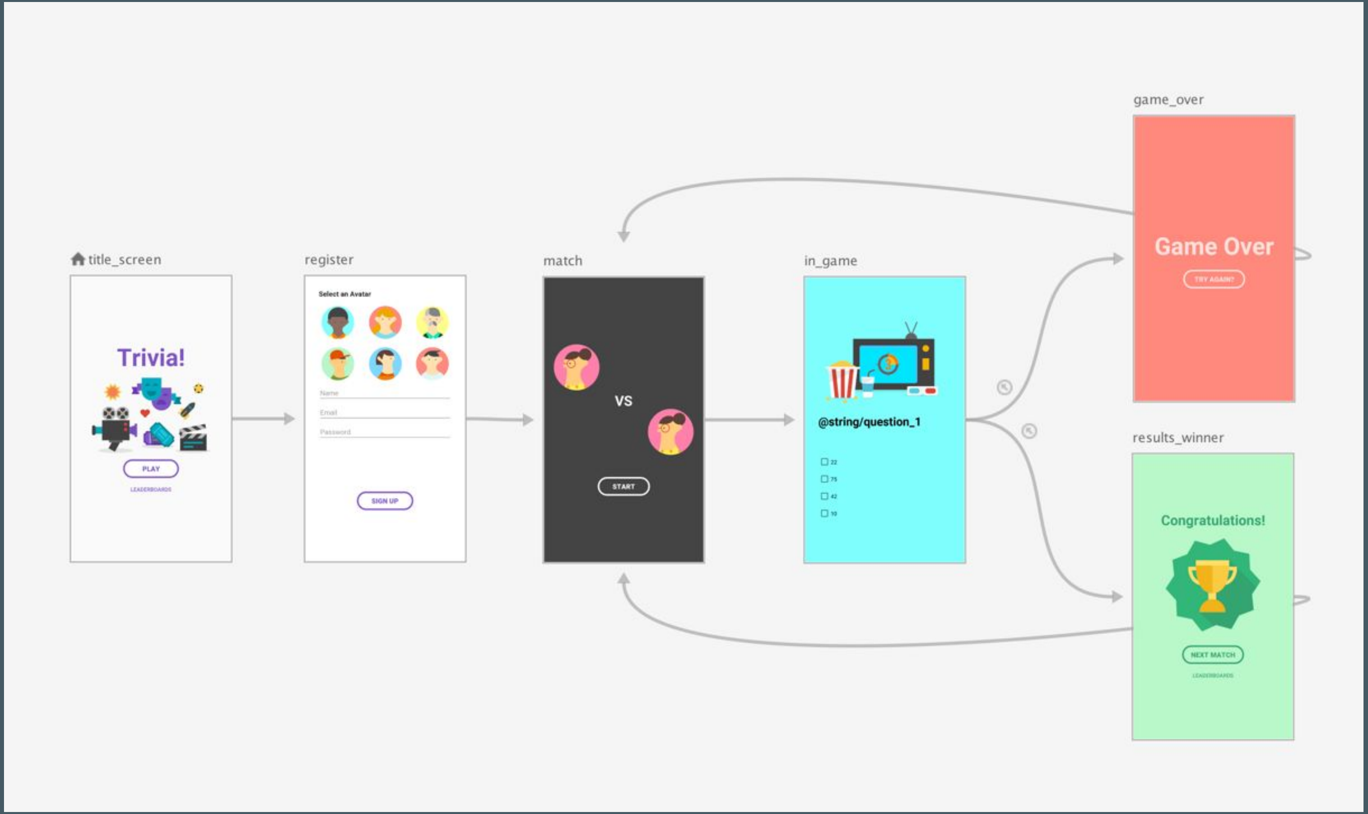
Navigation Component

- Visual representation of app navigation
- Compile-time validation of destination transactions
- Deeplink routing
- Simplified animations
- Compile-time validation of fragment args

Navigation Graph



- Destinations
- Actions



What functionality does Navigation provide?

Navigation Component Functionality

Managed Fragment Transactions

Visual Navigation Graph

Generated Navigation Actions

Built-In Animation Apis

Deeplink Support

Integration With Material Design UI

Key Components

Navigation Graph

XML representation of app navigation

NavHost

A container where fragments will be displayed

NavController

Manages the transitions between graph destinations

Dependencies

```
// root/build.gradle
classpath "androidx.navigation:navigation-safe-args-gradle-plugin:2.2.2"


// app/build.gradle
implementation "androidx.navigation:navigation-fragment-ktx:2.2.2"
implementation "androidx.navigation:navigation-ui-ktx:2.2.2"
```

Implementing Navigation

Create A Nav Graph

Create an XML file to define our app's navigation graph

Add A Start Destination

Define which Fragment to show when app starts

Add Nav Graph to NavHost

Connect our XML nav graph to the container that will display Fragments

Implementing Navigation

Add More Destinations

Add new Fragment destinations to the XML nav graph

Connect Destinations With Actions

Define how destinations are connected

Navigate to Destinations Using NavController

NavController will manage the Fragment transactions and UI updates

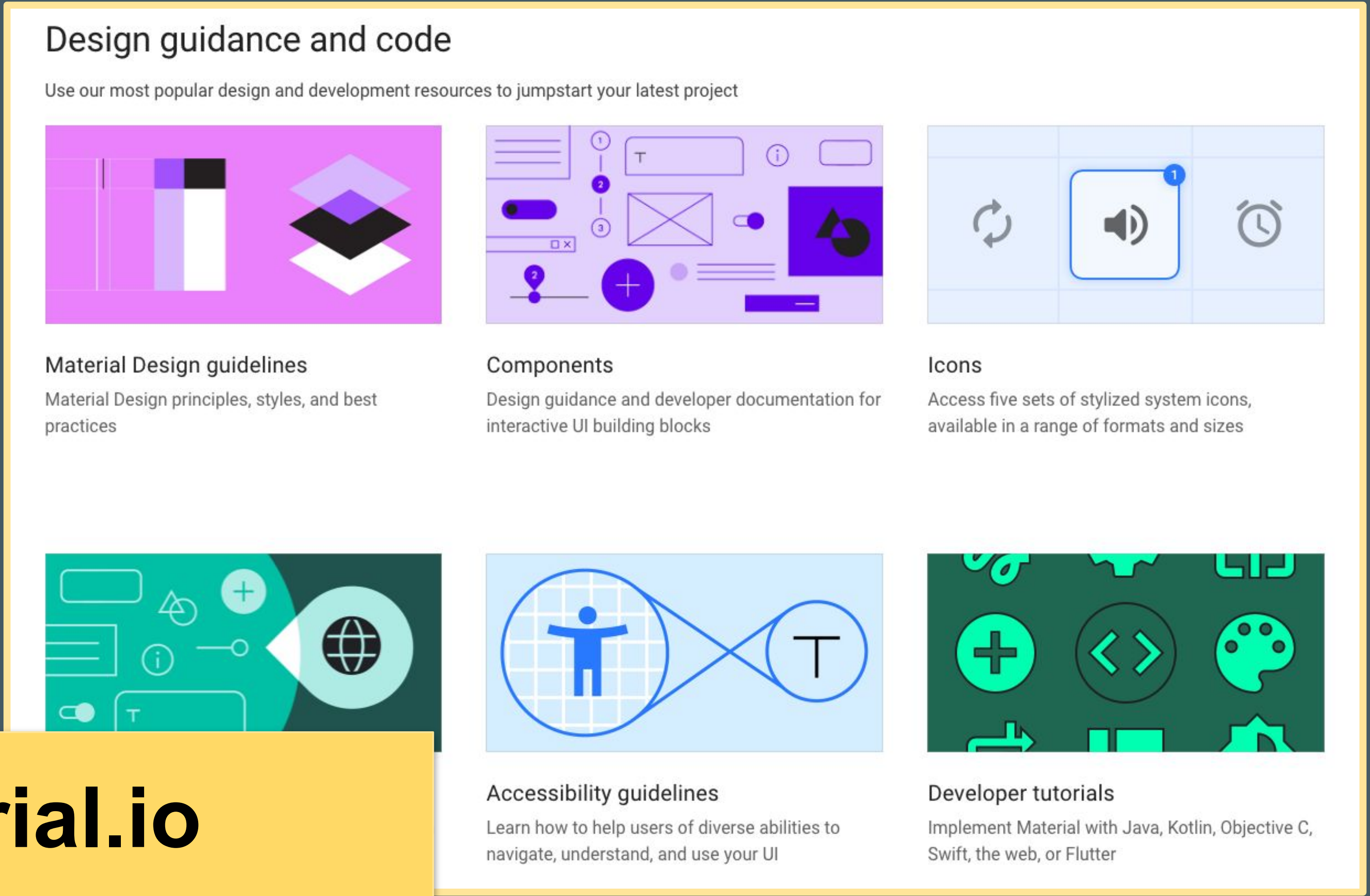
Material Design

Consistent UI styling and user interactions

What is Material Design?

Material Design

- Design language developed by Google
- Standard UI elements, sizing, styling, and interactions
- Simplifies design for developers



Design guidance and code

Use our most popular design and development resources to jumpstart your latest project

Material Design guidelines

Material Design principles, styles, and best practices

Components

Design guidance and developer documentation for interactive UI building blocks

Icons

Access five sets of stylized system icons, available in a range of formats and sizes

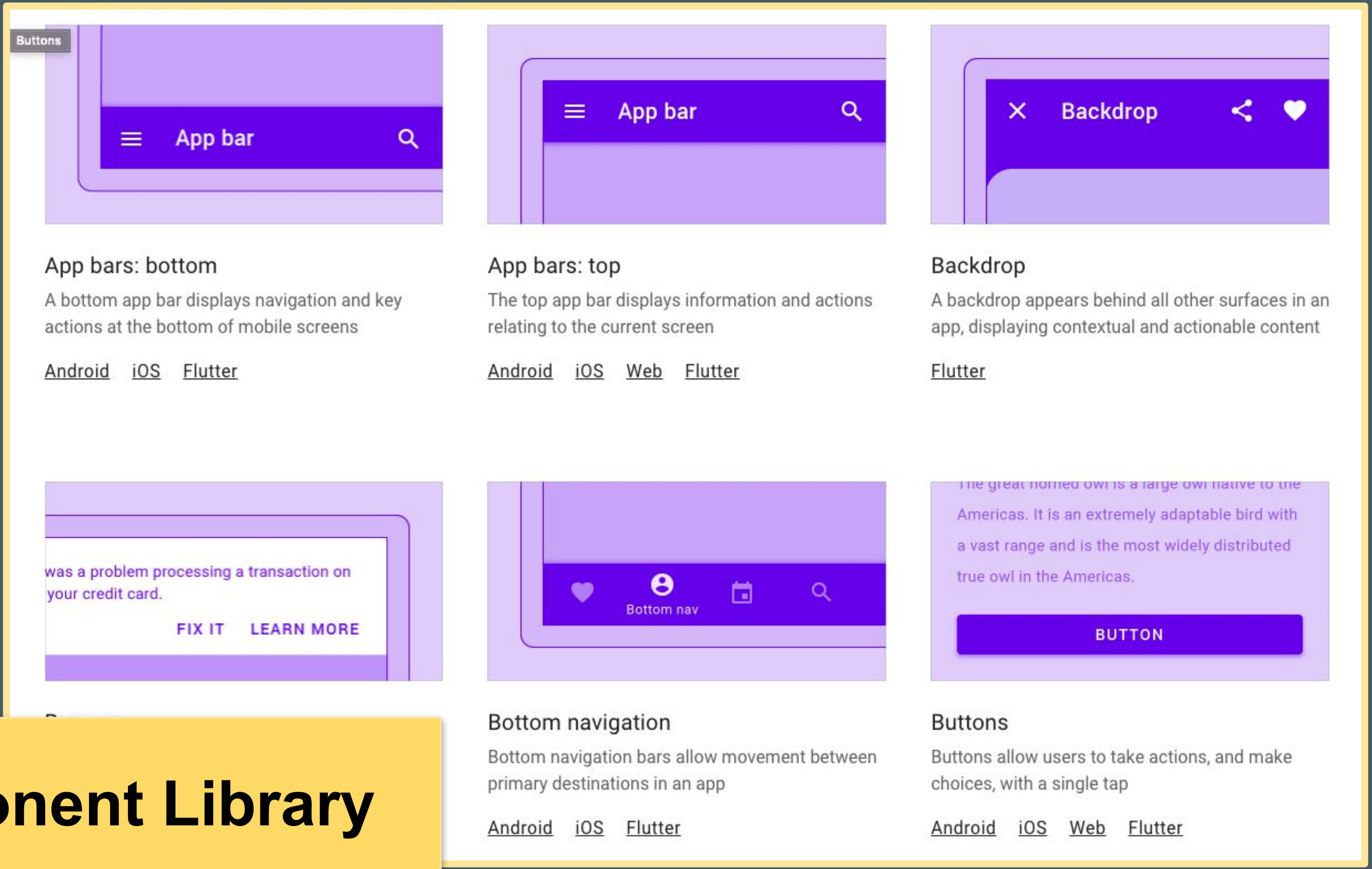
Accessibility guidelines

Learn how to help users of diverse abilities to navigate, understand, and use your UI

Developer tutorials

Implement Material with Java, Kotlin, Objective C, Swift, the web, or Flutter

Material.io



was a problem processing a transaction on your credit card.

The great horned owl is a large owl native to the Americas. It is an extremely adaptable bird with a vast range and is the most widely distributed true owl in the Americas.

App bars: bottom

A bottom app bar displays navigation and key actions at the bottom of mobile screens

Android iOS Flutter

App bars: top

The top app bar displays information and actions relating to the current screen

Android iOS Web Flutter

Backdrop

A backdrop appears behind all other surfaces in an app, displaying contextual and actionable content

Flutter

Bottom navigation

Bottom navigation bars allow movement between primary destinations in an app

Android iOS Flutter

Buttons

Buttons allow users to take actions, and make choices, with a single tap

Android iOS Web Flutter

Component Library

Material Design Components

AppBar

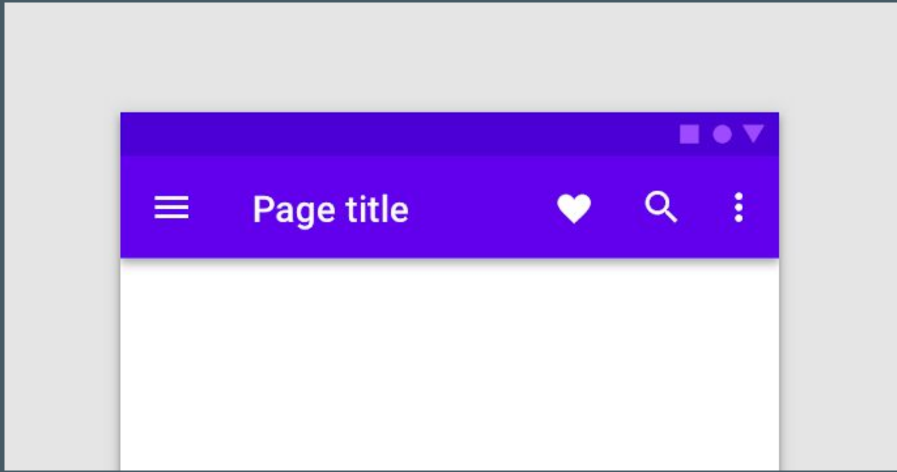
Info and actions related to the current screen

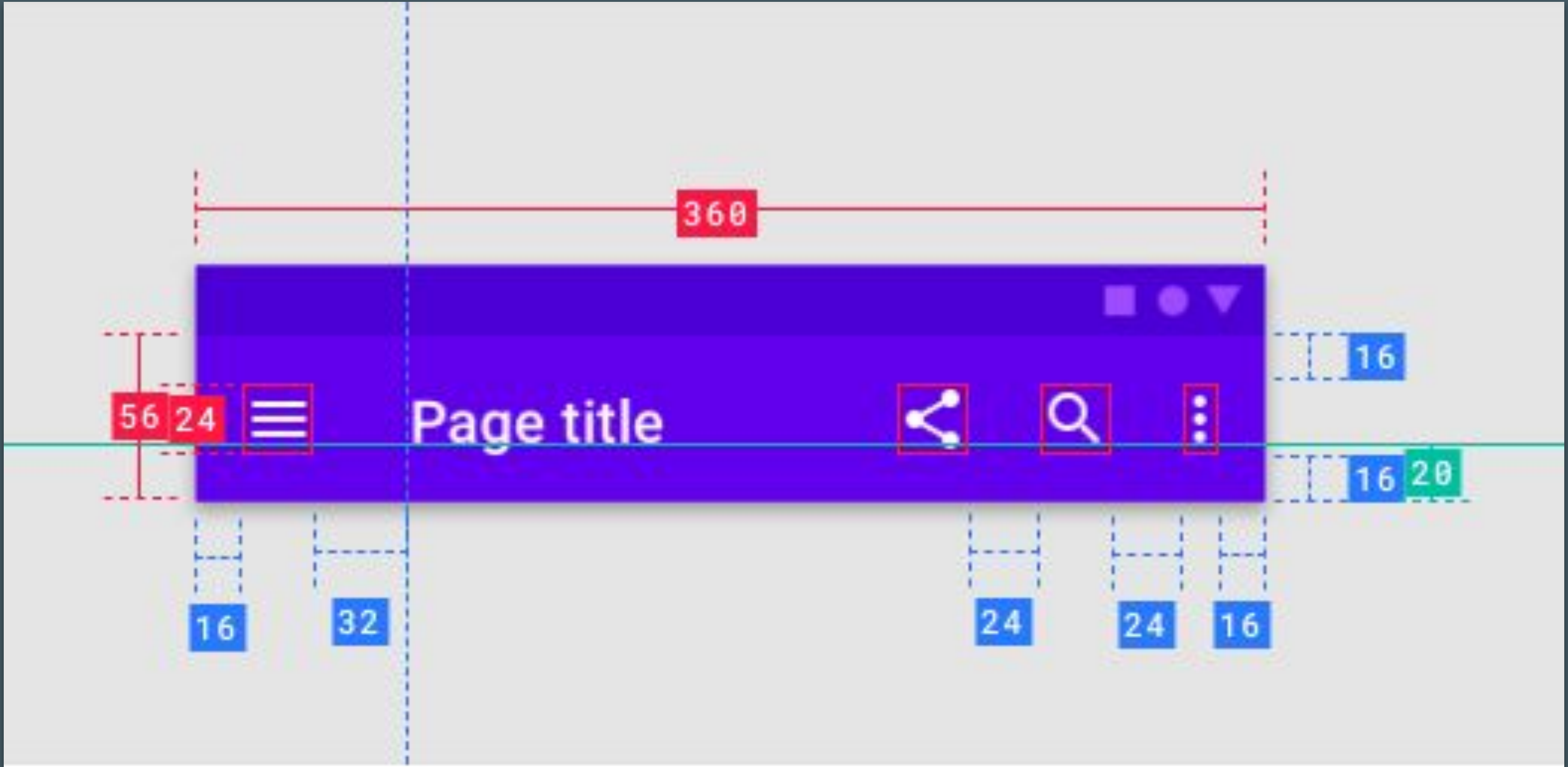
Bottom Navigation

Provides movement between top-level destinations in an app

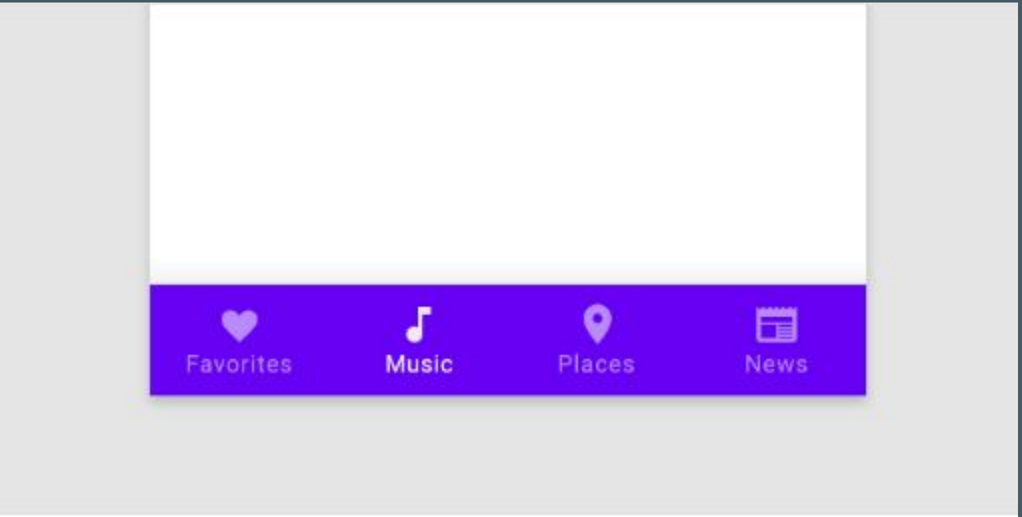
AppBar

- Position top or bottom
- Title
- Menu items
- Drawer button
- Back button

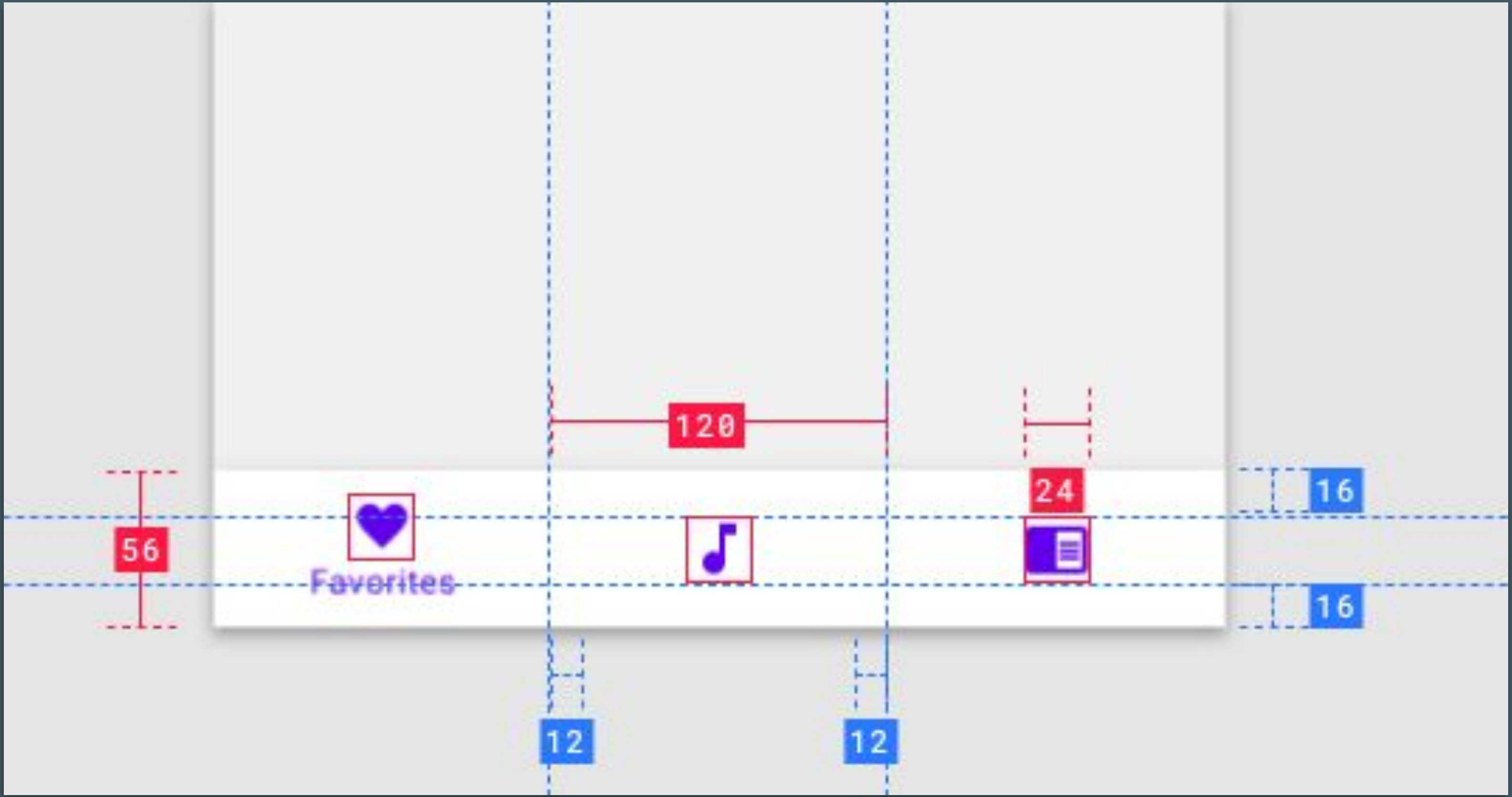


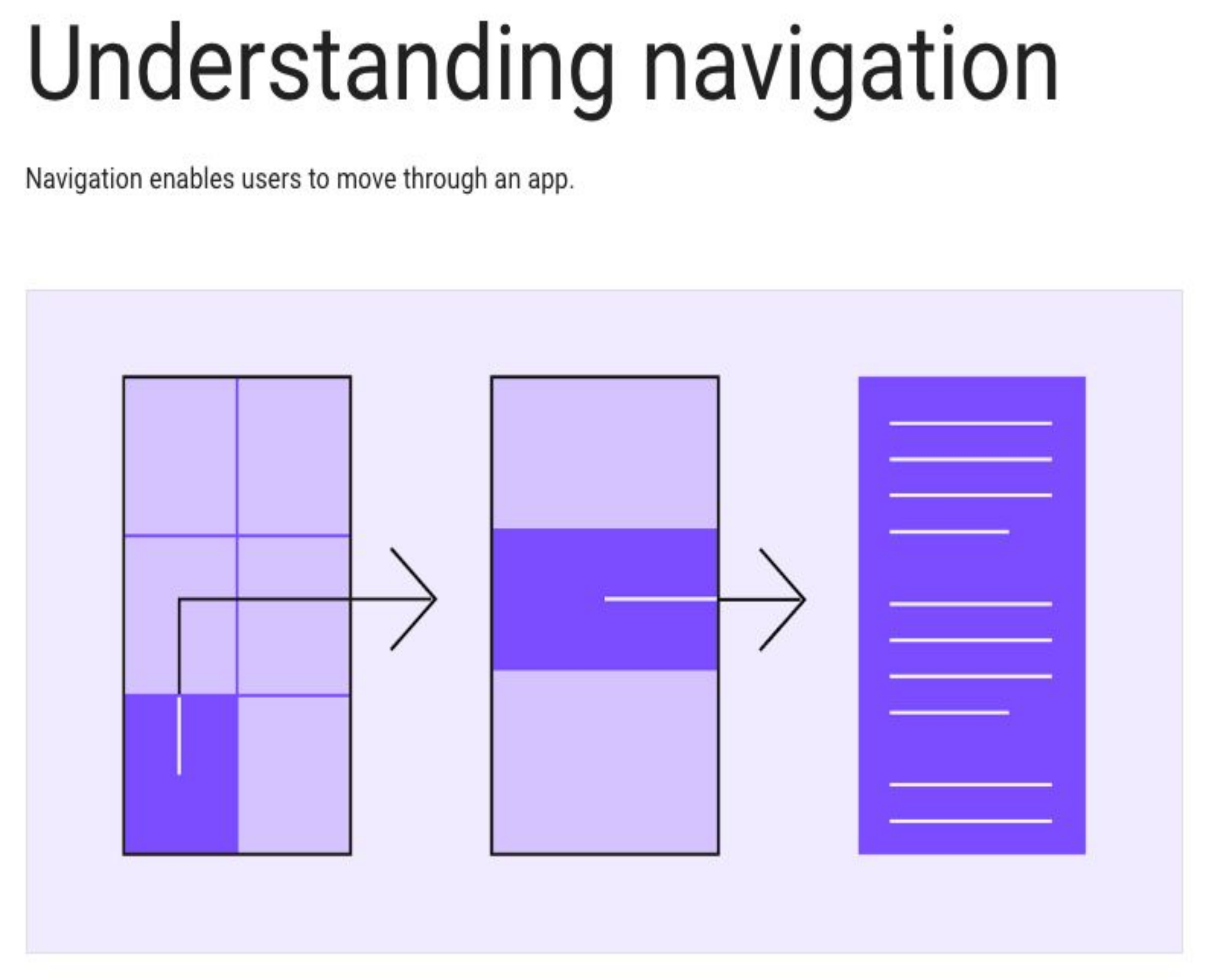

360
16
Page title
56
24
16
20
16
32
24
24
16

Bottom Navigation



- Bottom of screen
- Label/Icon
- Notification badges
- Selection / Reselection

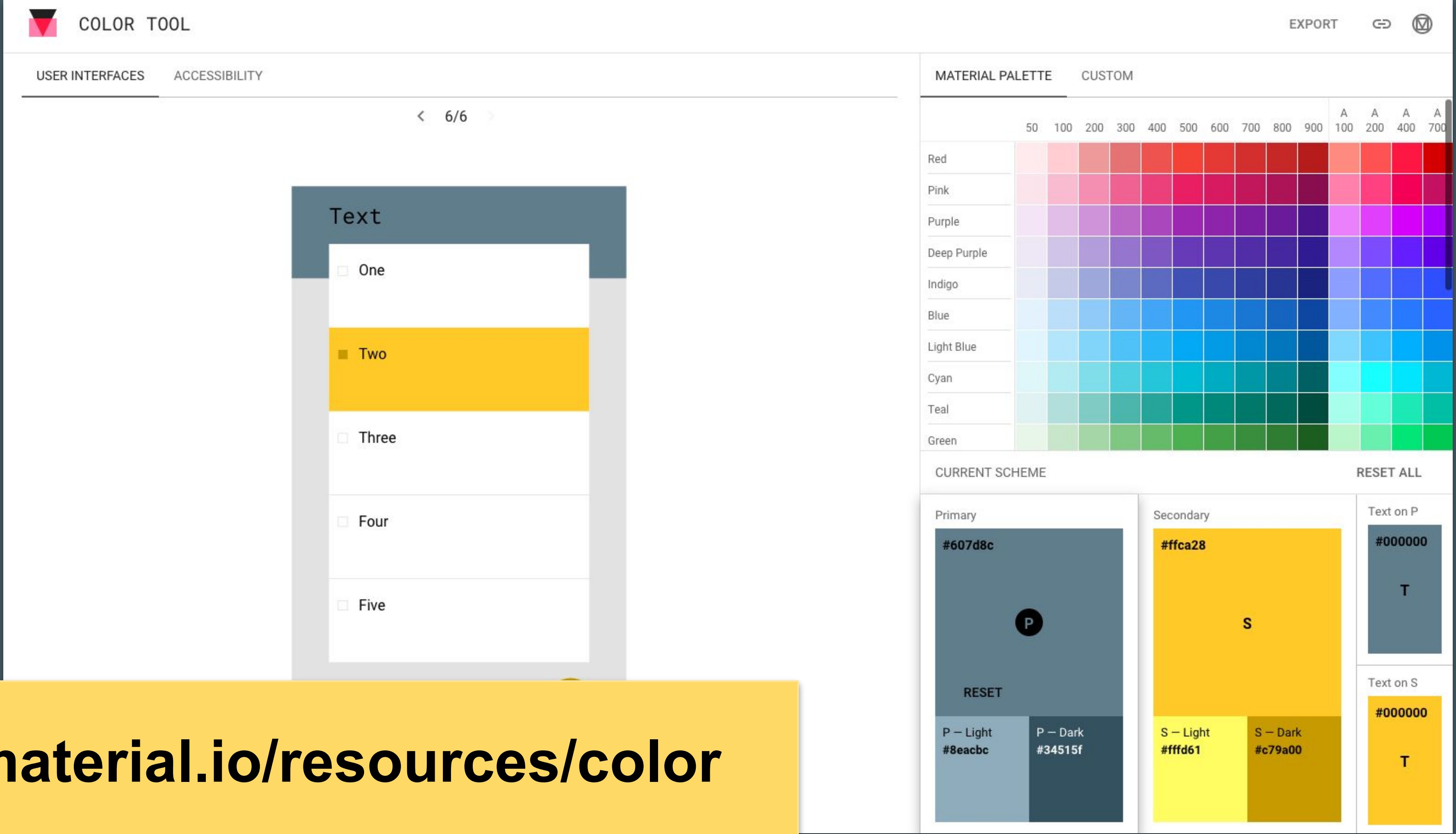

120
24
16
56
Favorites
16
12
12



Understanding navigation

Navigation enables users to move through an app.

Guidance on Material Design navigation patterns across mobile and web



COLOR TOOL

EXPORT

USER INTERFACES ACCESSIBILITY

6/6

Text

□ One

■ Two

□ Three

□ Four

□ Five

MATERIAL PALETTE CUSTOM

	50	100	200	300	400	500	600	700	800	900	A 100	A 200	A 400	A 700
Red														
Pink														
Purple														
Deep Purple														
Indigo														
Blue														
Light Blue														
Cyan														
Teal														
Green														

CURRENT SCHEME RESET ALL

Primary
#607d8c
P
RESET
P – Light #8eacbc
P – Dark #34515f

Secondary
#ffca28
S
S – Light #fffd61
S – Dark #c79a00

Text on P
#000000
T

Text on S
#000000
T

material.io/resources/color

DEMO

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