

Mobile Applications

CSCI 448

Lecture 17



Jetpack Compose
Scaffold

Previously in CSCI 448



- Accessibility
 - strings.xml
 - LTR / RTL : start/end
 - Image use
 - Content description
 - Color choice & contrast
- Firebase Crashlytics

Questions?



??

Learning Outcomes For Today



- Describe and diagram the components of a Compose Scaffold
- Create an app with top menu bar navigation

On Tap For Today



- Scaffold
 - Drawer
 - TopBar
 - BottomBar
 - FAB
- Exam

On Tap For Today



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Scaffold Components



- TopBar
- Drawer
- Content
- FloatingActionButton
- Snackbar
- BottomBar



Scaffold Composable



```
Scaffold(  
    topBar = { TopAppBar { /* Top App Bar Content */ } },  
    drawerContent = { /* Drawer Content */ },  
    content = { /* Screen Content */ },  
    floatingActionButton = { /* FAB Content */ },  
    bottomBar = { BottomAppBar { /* Bottom App Bar Content */ } }  
)
```


Scaffold Content



```
// explicit
Scaffold(
    content = { contentPadding ->
        MyComposable(modifier = Modifier.padding(contentPadding))
    },
    // other arguments
)
```

```
// lambda
Scaffold(
    // other arguments
) { contentPadding ->
    MyComposable(modifier = Modifier.padding(contentPadding))
}
```

On Tap For Today

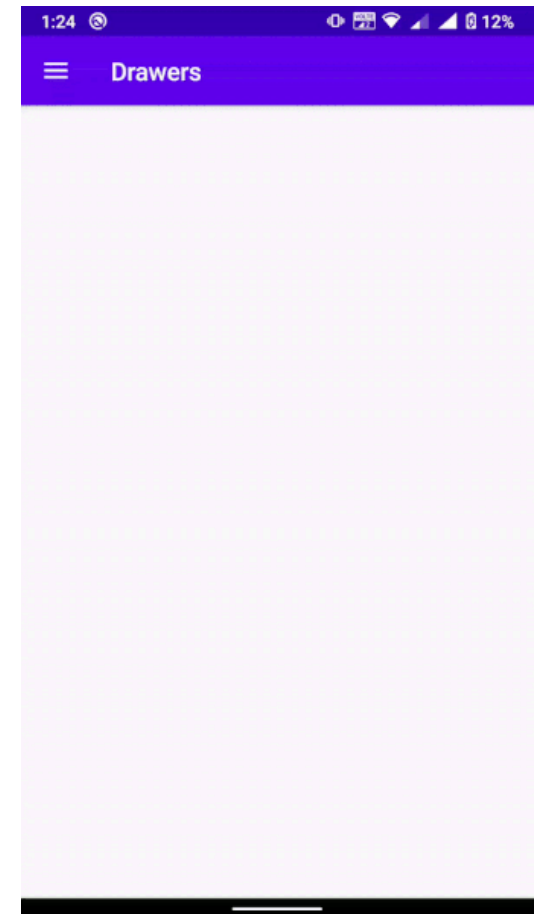


- Scaffold
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Scaffold Drawer



```
Scaffold(  
    drawerContent = { /* already set up as Column */  
        MyContent1()  
        Divider()  
        MyContent2()  
    },  
    // other arguments  
)
```



On Tap For Today

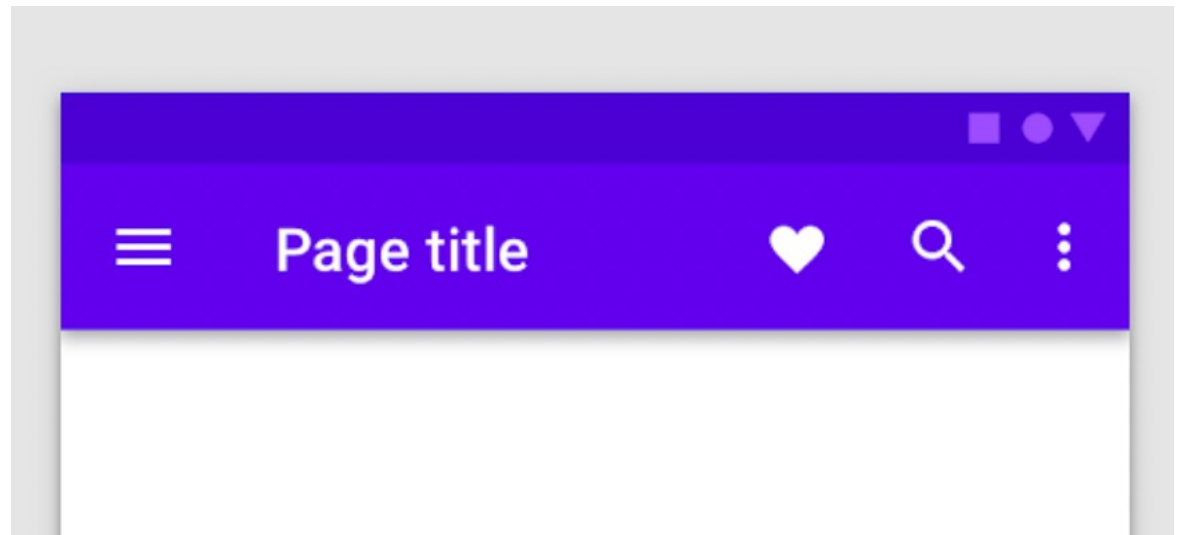


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Scaffold Top Bar



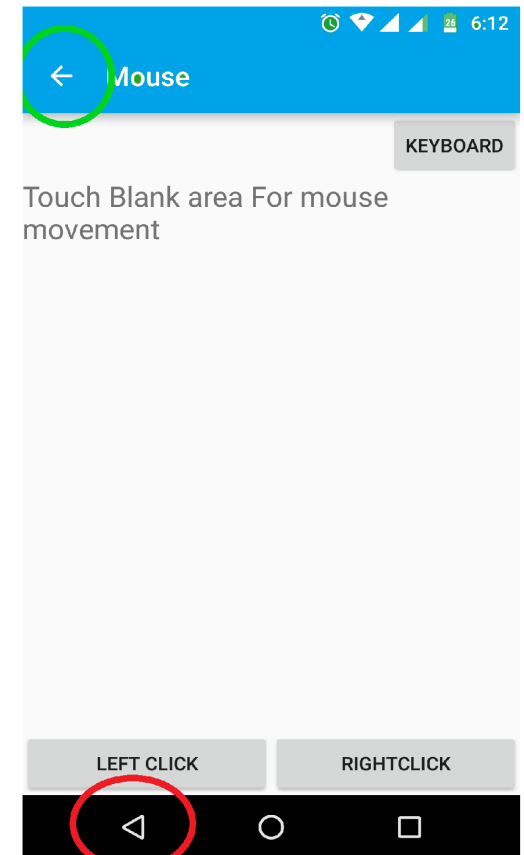
```
Scaffold(  
  topBar = {  
    TopAppBar(  
      navigationIcon = ...,  
      title = { Text("Page title") },  
      actions = { ... } /* already set up as a row */  
    )  
  },  
  // other arguments  
)
```



Up Arrow v Back Button



- Up Arrow
 - Pops top stack entry off, returns to previous node in NavGraph and recreates it if necessary
- Back Button
 - Pops top stack entry off, returns to previous entry



Navigation Icon



- Menu or Up Arrow

```
if (navController.previousBackStackEntry != null) {  
    {  
        IconButton( onClick = { navController.navigateUp() } ) {  
            Icon(  
                imageVector = Icons.Filled.ArrowBack,  
                contentDescription = stringResource(R.string.menu_back_desc)  
            )  
        }  
    }  
} else {  
    {  
        IconButton(  
            onClick = { scope.launch { scaffoldState.drawerState.open() } }  
        ) {  
            Icon(  
                imageVector = Icons.Filled.Menu,  
                contentDescription = stringResource(R.string.menu_menu_desc)  
            )  
        }  
    }  
}
```

On Tap For Today



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Bottom Bar



```
Scaffold(  
  bottomBar = {  
    BottomAppBar {  
      BottomNavigation {  
        BottomNavigationItem(  
          icon = { },  
          label = { },  
          selected = true|false,  
          selectedContentColor = Color,  
          unselectedContentColor = Color,  
          onClick = { }  
        }  
      }  
    },  
    // other arguments  
  )
```



Home



On Tap For Today



- Scaffold
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 - BottomBar
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- Exam

Scaffold FAB



```
Scaffold(  
  floatingActionButton = {  
    FloatingActionButton(  
      onClick = { /*action*/ }  
    ) {  
      /* content */  
    }  
  },  
  // other arguments  
)
```



Scaffold FAB



```
Scaffold(  
  floatingActionButton = {  
    FloatingActionButton(  
      onClick = { /*action*/ }  
    ) {  
      /* content */  
    }  
  },  
  isFloatingActionButtonDocked = true,  
  // other arguments  
)
```



Scaffold FAB w/ ButtonBar



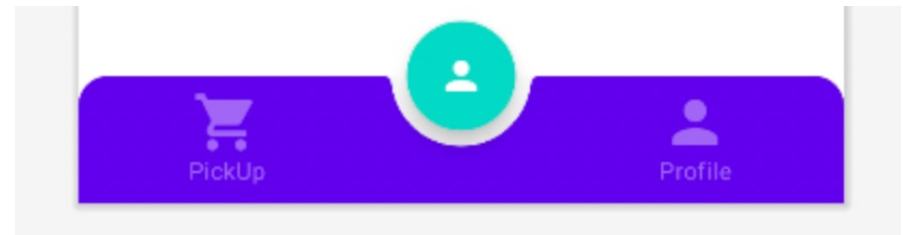
```
Scaffold(  
  floatingActionButton = {  
    FloatingActionButton(  
      onClick = { /*action*/ }  
    ) {  
      /* content */  
    }  
  },  
  isFloatingActionButtonDocked = true,  
  bottomBar = {  
    BottomBar(  
      cutoutShape = MaterialTheme.shapes.small.copy(  
        CornerSize(percent = 50)  
      )  
    ) {  
      /* content */  
    }  
  },  
  // other arguments  
)
```



Scaffold FAB w/ ButtonBar



```
Scaffold(  
  floatingActionButton = {  
    FloatingActionButton(  
      onClick = { /*action*/ }  
    ) {  
      /* content */  
    }  
  },  
  isFloatingActionButtonDocked = true,  
  floatingActionButtonPosition = FabPosition.center,  
  bottomBar = {  
    BottomBar(  
      cutoutShape = MaterialTheme.shapes.small.copy(  
        CornerSize(percent = 50)  
      )  
    ) {  
      /* content */  
    }  
  },  
  // other arguments  
)
```



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Exam 1 Logistics



- Opens: Mon Feb 27 3:00 PM
- Closes: Fri Mar 03 11:59 PM
 - Must be submitted to Canvas by closing time
 - Only one submission permitted
- Open book, lectures, labs, assignments
- Closed internet

Exam 1 Content



- Android Topics:
 - MVVM
 - Compose Framework
 - State
 - Activity Lifecycle
 - Design Patterns
 - Where present, benefit of, why used
 - Design Principles
 - Where present, benefit of, why used
 - NO: Kotlin, Code, Syntax, Android APIs
- How all are intertwined, connected, and dependent upon each other

Exam 1 Guiding Idea



- Be able to decompose an app idea into its constituent parts
 - Study how Quizler was broken down

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To Do For Next Time



- Lab05 due Tue Feb 28
- Exam 1 due Fri Mar 03
- Lab06 due Fri Mar 03
- Lab07 due Fri Mar 10
- Alpha Release due Mon Mar 13
- A2 due Tue Mar 14
- Lab08 due Fri Mar 17
- Alpha Feedback due Fri Mar 17
- Spring Break !!!