

Final Topics:

All topics we have covered in this course might appear on the exam. Below you will find all the key points summarized.

Lecture 1:

- What is Kotlin?
- Advantages of Kotlin over Java
- Basic syntax: variables, data types, functions
- Primitive data types
- Any
- Type Inference
- val, var, const
- Null safety
- Strings
- Multiline and string templates
- String comparison and referential equality
- String pool memory
- Control flow: if/when statements and expressions

Lecture 2:

- Converting data types
- Arrays
- Lists
- for
 - step
 - downTo
- while
- foreach
- break, continue
- Ranges
- ++/--
- Input
- Elvis operator

Lecture 3:

- Unit
- Function scope
- Named and default arguments
- Return
- Single expressions
- Pairs and Triples
- Deconstructing multiple data types
- Maps and Sets
- First class functions
 - Assigning to variables
 - Anonymous and lambda functions
 - Higher order
 - Functions as parameters
 - Trailing lambda syntax
 - Functions as return types
- Function references
 - Double colon operator

Lecture 4:

- Classes and objects basics
- Properties and Methods
- Constructors
 - init
 - Parameters
- Encapsulation
 - getters, setters
- Visibility modifiers
 - private
 - public
 - protected
- Inheritance
- Abstraction
 - Interfaces
 - Abstract classes
- Anonymous classes

Lecture 5

- Interface delegation
 - Delegation vs Inheritance
- Standard delegates
 - Lazy, Observable, Vetoable
- Generics basics
- Extension Functions
- Extension Properties
- Lambda with Receiver
- References vs values
- Pass by value
- Data class
- Scope functions
 - let, run, with, apply, also

Lecture 6

- Activities
- Activity Lifecycle
- onSaveInstanceState
- Logging tags and priority levels
- Bundles vs Maps
- What is Jetpack Compose?
- Composable functions
 - Parameters, modifiers
- Box, Row, Column
 - BoxScope, RowScope, ColumnScope
- Alignment vs Arrangement
- fillMaxSize, fillMaxWidth, fillMaxHeight

Lecture 7

- R class
- String resources
- Composables
 - Image, Card, Button
 - Remember
- Lazy Column & Lazy Row
- Composable Lifecycle
 - Composition, recomposition
 - Recomposition Scope
- State
 - MutableState, SnapshotStateList, delegated properties

Lecture 8

- Navigation
 - Navigation Controller
 - Navigate, popBackStack
 - Navigation Host
 - Navigation Graph
- Routes & Destinations
 - Passing arguments
- Composables
 - IconButton, Icon
 - NavigationBar, NavigationBarItem
 - Scaffold
 - TopAppBar
 - NavigationIcon, actions
- Callback

Lecture 9

- State hoisting
 - Single source of truth, stateless vs stateful
- State holder
 - UI and business logic state holders
- UI logic vs business logic
- Application data
- UI layer
- Data layer
 - Repository, data sources, data models
- SQLite DB (Room)
 - Data entities, DAO, database
- Application context
- Singleton
- Separation of concerns

Lecture 10

- Asynchronous programming
- Coroutines
 - runBlocking
 - launch, async & await
 - join, cancel
- Suspend functions
 - delay
- HTTP requests
- Ktor
- Serialization & Deserialization
 - JSON keys and values
 - GSON
- Consuming an API
 - Modeling a JSON, endpoints
- LaunchedEffect
- Coil

Lecture 11

- rememberCoroutineScope
- ViewModel
 - ViewModelStoreOwner
 - viewModelScope
- Flows
 - Cold Flow
 - Hot Flow
 - StateFlow