

**J.K.K. MUNIRAJAH COLLEGE OF TECHNOLOGY
(AUTONOMOUS)**



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai.

Accredited by NAAC with "A" Grade

T.N. Palayam (Po), Gobi (Tk), Erode (Dt) – 638 506



REQUISITION LETTER

From,

Head of the Department,
Computer Science and Engineering,
JKK Munirajah College of Technology,
T.N. Palayam.

To,

The principal,
JKK Munirajah College of Technology, T.N.
Palayam.

Permitted
[Signature]

Respected Sir,

Sub: Seeking permission for conducting a Certificate Program- Reg

We have planned to conduct a certificate program for II- and III-year Computer Science and Engineering students on **"CUTTING EDGE MOBILE APPLICATIONS DEVELOPMENT USING KOTLIN"** from **05.02.2024 to 10.02.2024** by Program Coordinator **S.DHARANITHARAN, M.E.**, So, I request you to kindly provide a permission to conduct the certificate program.

Thanking You,

[Signature]

Principal
J.K.K. Munirajah College of Technology
(Autonomous)
T.N. Palayam, Gobi (Tk),
Erode (Dt) - 638 506

Yours Truly,

[Signature]
20/1/24
Kindly permit

Place: T.N.Palayam

Date:30.01.2024

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JKKMCT/CIRCULAR/FEB 24

31/01/2024

CIRCULAR

The Department of Computer Science and Engineering is planning to organize a Certificate Program on "CUTTING EDGE MOBILE APPLICATIONS DEVELOPMENT USING KOTLIN" (36 Hours) for the benefit of the students from 05.02.2024 (Monday) to 10.02.2024 (Tuesday). Students those who are willing to attend the Program can enroll their names to their class in-charges respectively on or before 02.02.2024.

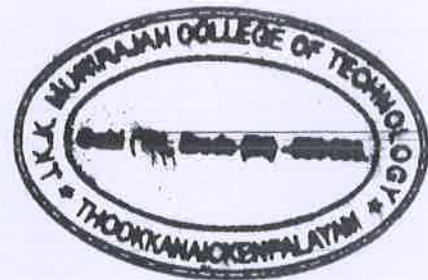
Principal

**J.K.K. Munirajah College of Technology
(Autonomous)
T.N. Palayam, Gobi (Tk),
Erode (Dt) - 638 506**

**PRINCIPAL
Principa**

**J.K.K. Munirajah College of Technology
(Autonomous)
T.N. Palayam, Gobi (Tk),
Erode (Dt) - 638 506**

Copy To,
All the HODs and Staff Members,
All the Students,
Notice Board, File



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRAM SYLLABUS

Name of the Certificate Program : **CUTTING EDGE MOBILE APPLICATIONS
DEVELOPMENT USING KOTLIN**

Program Code : 24CSECEMADKCP02

Name of the Program Coordinator: S.DHARANITHARAN

Academic Year: 2023-2024

Program Contents

Total Hours: 36

Chapter 1: Introduction to Android App Development & Kotlin Basics


- Overview of Android Operating System
- Android Architecture: Activities, Services, Broadcast Receivers, Content Providers
- Setting up the Android Development Environment (Android Studio, SDK, Emulator)
- Introduction to Kotlin and its Features for Android Development
- Kotlin vs Java for Android Development
- Kotlin Collections (List, Set, Map), Variables, Data Types, Constants, and Control Flow

Chapter 2: Android UI Fundamentals & Layouts

- Introduction to Android Views and View Groups
- Layouts in Android: Linear Layout, Relative Layout, Constraint Layout
- Using Text View, Button, Edit Text, Image View, and other basic UI components
- Introduction to Material Design components (Buttons, Cards, Text Fields)
- Creating Layouts using XML
- Using Constraint Layout for flexible and responsive UI designs
- Styling and Themes in Android (Color, Text, and Drawable resources)
- Handling UI events: Button click, Text input, etc

Chapter 3: Activities, Intents, and Data Persistence

- Understanding Activities and their lifecycle (onCreate, onStart, onResume, etc.)
- Managing multiple activities in an app and navigating between them with Intents
- Passing data between activities using Intent extras
- Intent filters and implicit/explicit intents
- Introduction to Shared Preferences for storing simple data
- Saving and retrieving data using SQLite databases
- Working with Android's Room Database for local storage


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- Introduction to Content Providers for accessing shared data

Chapter 4: Advanced UI Components & Working with APIs

- RecyclerView for displaying lists of items efficiently
- Using adapters with RecyclerView (Array Adapter, Custom Adapter)
- Working with Card View for displaying items in a card format
- Handling complex UI components: Dialogs, Date Pickers, Time Pickers
- Introduction to REST APIs and HTTP Requests
- Using Retrofit for network communication in Android
- Parsing JSON data using Gson or Moshi
- Implementing asynchronous tasks with Coroutines for API calls

Chapter 5: Background Tasks & Notifications

- Introduction to Services in Android (foreground and background services)
- Using Work Manager for managing background tasks efficiently
- Using AsyncTask, Thread, and Handler for background processing
- Best practices for managing background work
- Understanding Notification Manager and Notification Channels
- Creating and displaying notifications (local and push notifications)
- Handling notification clicks and interacting with the app
- Implementing custom notifications and notifications with images

Chapter 6: Publishing App & Final Project

- Preparing your app for release (signing APK, creating keystore)
- Understanding AndroidManifest.xml and Gradle for app configuration
- Debugging apps: Using Logcat, breakpoints, and Android Profiler
- Testing your app on different devices and configurations
- Building a complete Android application with the concepts learned throughout the course
- Presenting and demonstrating the app
- Best practices for Android development and Kotlin
- Introduction to app deployment on Google Play Store

Prepared by:

Name: *S. DHARANITHARAN*

Designation: *AP/ASE*
S. Dharmithy
PROGRAM COORDINATOR

[Signature]
HOD

[Signature]
Principal
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[Signature]
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRAM SCHEDULE


Name of the Certificate Program : CUTTING EDGE MOBILE APPLICATIONS
DEVELOPMENT USING KOTLIN

Program Code : 24CSECEMADKCP02

Name of the Program Coordinator : S.DHARANITHARAN

Program Period : 05.02.2024 to 10.02.2024

| Date/ Time | 9:30AM to 11:30AM (2 Hours) | | 11.45 AM to 12.45PM (1 Hour) | | 1:30 PM to 4.30 PM (3 Hours) |
|------------|---|--------------|---|--------------|--|
| 05.02.2024 | Overview of Android Operating System, Android Architecture: Activities, Services, Broadcast Receivers, Content Providers | BREAK | Setting up the Android Development Environment (Android Studio, SDK, Emulator), Introduction to Kotlin and its Features for Android Development | LUNCH | Kotlin vs Java for Android Development, Kotlin Collections (List, Set, Map), Variables, Data Types, Constants, and Control Flow |
| 06.02.2024 | Introduction to Android Views and View Groups, Layouts in Android: Linear Layout, Relative Layout, Constraint Layout, Using Text View, Button, Edit Text, Image View, and other basic UI components | | Introduction to Material Design components (Buttons, Cards, Text Fields), Creating Layouts using XML | | Using Constraint Layout for flexible and responsive UI designs, Styling and Themes in Android (Color, Text, and Drawable resources), Handling UI events: Button click, Text input, etc |
| 07.02.2024 | Understanding Activities and their lifecycle (onCreate, onStart, onResume, etc.), Managing multiple activities in an app and navigating between them with Intents, Passing data between | | Intent filters and implicit/explicit intents, Introduction to Shared Preferences for storing simple data | | Saving and retrieving data using SQLite databases, Working with Android's Room Database for local storage, Introduction to Content Providers for accessing shared data |


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| | | | |
|------------|--|---|--|
| | activities using Intent extras | | |
| 08.02.2024 | Recycler View for displaying lists of items efficiently, Using adapters with Recycler View (Array Adapter, Custom Adapter), Working with Card View for displaying items in a card format | Handling complex UI components: Dialogs, Date Pickers, Time Pickers, Introduction to REST APIs and HTTP Requests | Using Retrofit for network communication in Android, Parsing JSON data using Gson or Moshi, Implementing asynchronous tasks with Coroutines for API calls |
| 09.02.2024 | Introduction to Services in Android (foreground and background services), Using Work Manager for managing background tasks efficiently, Using AsyncTask, Thread, and Handler for background processing | Best practices for managing background work, Understanding Notification Manager and Notification Channels | Creating and displaying notifications (local and push notifications), Handling notification clicks and interacting with the app, Implementing custom notifications and notifications with images |
| 10.02.2024 | Preparing your app for release (signing APK, creating keystore), Understanding AndroidManifest.xml and Gradle for app configuration, Debugging apps: Using Logcat, breakpoints, and Android Profiler | Testing your app on different devices and configurations, Building a complete Android application with the concepts learned throughout the course | Presenting and demonstrating the app, best practices for Android development and Kotlin, Introduction to app deployment on Google Play Store |

S. Ananthan
PROGRAM COORDINATOR

[Signature]
HOD

[Signature]
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESOURCE PERSON PROFILE

| | |
|---|--|
| Title of the Programme | CUTTING EDGE MOBILE APPLICATIONS DEVELOPMENT USING KOTLIN |
| Duration and Timing of the Programme | 36 Hours and 9.30 AM to 4.30 PM |
| Name of the Resource Person | S.DHARANITHARAN |
| Photo Image of the Resource Person |  |
| E-mail | dharanitharans@jkkmct.edu.in |
| Mobile No: | 9003477790 |
| Designation | Assistant Professor/ CSE |
| Official Address | JKK Munirajah College of Technology, T.N.Palayam, Gobi (TK), Erode (Dt) -638506 |
| Educational Qualification | B.E (Computer Science and Engineering), M.E (Computer Science and Engineering) |
| Experience | 10 years of Experience as Assistant Professor |
| Field of Interest | Object Oriented Programming, Service Oriented Architecture, Software Engineering |


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2023-2024

WILLING STUDENTS NAMELIST

CERTIFICATE PROGRAM ON CUTTING EDGE MOBILE APPLICATIONS

DEVELOPMENT USING KOTLIN

| S.NO | REGISTER NUMBER | NAME | WILLINGNESS | | |
|-----------------|-----------------|--------------------|-------------|----|------------------|
| | | | YES | NO | SIGN |
| III YEAR | | | | | |
| 1 | 731221104001 | AADHI SURYA K | ✓ | | K. Adarsh |
| 2 | 731221104004 | ARULMURUGAN S | ✓ | | S. Arul |
| 3 | 731221104005 | BABUSHANKAR S | ✓ | | S. Babu |
| 4 | 731221104007 | BAMBAVASAN V | ✓ | | V. Babu |
| 5 | 731221104008 | CHANDRA PRAKASH K | ✓ | | K. Chandrashekar |
| 6 | 731221104009 | DHAKSHINA MOORTHIE | ✓ | | D. Dhakshini |
| 7 | 731221104012 | DURGA K | ✓ | | K. Durga |
| 8 | 731221104013 | GUNASEKARAN P | ✓ | | P. Gunasekaran |
| 9 | 731221104014 | GUNASEKARAN S | ✓ | | S. Gunasekaran |
| 10 | 731221104015 | HARIPRABHA V | ✓ | | V. Hariprabha |
| 11 | 731221104017 | KAMALESH K | ✓ | | K. Kamallesh |
| 12 | 731221104021 | LALITHA T | ✓ | | T. Lalitha |
| 13 | 731221104022 | MADHAN G | ✓ | | G. Madhan |
| 14 | 731221104025 | MOUSIKA S | ✓ | | S. Mousika |
| 15 | 731221104026 | NANDHINI P | ✓ | | P. Nandhini |
| 16 | 731221104027 | PANDIYARAJ P | ✓ | | P. Pandiyaraj |
| 17 | 731221104028 | PRIYA DHARSHINI S | ✓ | | S. Priya |

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| | | | | | |
|----------------|--------------|--------------------|---|---|----------------|
| 18 | 731221104029 | RAVI KUMAR P | ✓ | | P. Ravikumar |
| 19 | 731221104031 | RUBIKA G | ✓ | | Gt. Ruffy. |
| 20 | 731221104033 | SHYAMKUMAR S | ✓ | | S. Shyam |
| 21 | 731221104034 | SENTHILVEL S | ✓ | | S. Senthilvel |
| 22 | 731221104035 | SUGANYA K | ✓ | | Sugay. |
| 23 | 731221104036 | SURYA S | ✓ | | Surya |
| 24 | 731221104037 | SUSHMINA M | ✓ | | m.sushmina |
| 25 | 731221104038 | VASANTHKUMAR S | ✓ | | V. S. |
| 26 | 731221104039 | VIGNESH M | ✓ | | Vignesh |
| 27 | 731221104040 | YAMUNA K | ✓ | | K. Yamuna |
| 28 | 731221104301 | AMUTHAMALAR R | ✓ | | R. Amuthamalar |
| 29 | 731221104302 | BHARANI DHARAN.M | ✓ | | B. Bharani |
| 30 | 731221104303 | GAYATHRI R | ✓ | | R. Gayathri |
| 31 | 731221104305 | NANDINI M | ✓ | | M. Nandini |
| 32 | 731221104306 | SNEHA L | ✓ | | L. Sneha |
| 33 | 731221104307 | SRINIVAS V | ✓ | | Srinivas . V |
| 34 | 731221104308 | SUBASHINI P | ✓ | | P. Subashini |
| 35 | 731221104701 | NIKETHA S | ✓ | | Niketha S |
| II YEAR | | | | | |
| 36 | 731222104001 | ABINAYA P | ✓ | | P. Abinaya |
| 37 | 731222104002 | BHARATH KRISHNAN V | | ✓ | V. Bharath |
| 38 | 731222104003 | CHANDRAKALA N | ✓ | | N. Chandrakala |
| 39 | 731222104004 | CHANDRU K | ✓ | | K. Chandru |
| 40 | 731222104005 | DEEPA T | ✓ | | T. Deepa |

Principal
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| | | | | | |
|----|--------------|-----------------------|---|---|-----------------|
| 41 | 731222104006 | DEVADHARSHINI M | ✓ | | M. M.P |
| 42 | 731222104008 | ELAKKIYA K | ✓ | | K. Elakkiya |
| 43 | 731222104009 | GIBSON SHANTHAKUMAR R | ✓ | | R. Gibson |
| 44 | 731222104010 | GOKILA S | ✓ | | S. Gokila |
| 45 | 731222104011 | GOKULRAJA G | | ✓ | G. Gokulraj |
| 46 | 731222104012 | HAFILA A | ✓ | | A. Hafila |
| 47 | 731222104013 | INIKA C | ✓ | | C. Inika |
| 48 | 731222104014 | JAYASHREE K | ✓ | | K. Jayashree |
| 49 | 731222104015 | JAYASREE D | ✓ | | D. Jayasree |
| 50 | 731222104016 | JAYASURYA B | ✓ | | B. Jayasurya |
| 51 | 731222104018 | JOTHI N | | ✓ | N. Jothi |
| 52 | 731222104019 | JOTHI S | ✓ | | S. Jothi |
| 53 | 731222104020 | KARTHI K | ✓ | | K. Karthi |
| 54 | 731222104021 | KARUNYA K | ✓ | | K. Karunya |
| 55 | 731222104022 | KEERTHIGA V | ✓ | | V. Keerthiga |
| 56 | 731222104023 | LAKSHMI B | ✓ | | B. Lakshmi |
| 57 | 731222104024 | LINGARAJU K | ✓ | | K. Lingaraju |
| 58 | 731222104025 | NEETHU S | ✓ | | S. Neethu |
| 59 | 731222104026 | NIVETHA P | ✓ | | P. Nivetha |
| 60 | 731222104027 | POOMATHI S | ✓ | | S. Poomathi |
| 61 | 731222104029 | PUSHPASRI M | ✓ | | M. Pushpasri |
| 62 | 731222104030 | RAKSHITHA V | ✓ | | V. Rakshitha |
| 63 | 731222104031 | SAHEER H | ✓ | | H. Saheer |
| 64 | 731222104032 | SANJAIKUMAR S | ✓ | | S. Sanjai Kumar |

Principal

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| | | | | | |
|----|--------------|------------------|---|--|-------------------------|
| 65 | 731222104033 | SANJAY V | ✓ | | <i>Sanjay V</i> |
| 66 | 731222104034 | SANJAY KUMAR S | ✓ | | <i>S. Sanjay Kumar</i> |
| 67 | 731222104035 | SATHIYALAKSHMI M | ✓ | | <i>M. Sathyalakshmi</i> |
| 68 | 731222104036 | SHAKTHI S | ✓ | | <i>S. Shakthi</i> |
| 69 | 731222104038 | SIDHARAJ S | ✓ | | <i>S. Sidharaj</i> |
| 70 | 731222104039 | SOWDESWARI A | ✓ | | <i>A. Sowdeswari</i> |
| 71 | 731222104040 | SOWNDHAR D | ✓ | | <i>D. Sowndhar</i> |
| 72 | 731222104041 | SUMITHRA S | ✓ | | <i>S. Sumithra</i> |
| 73 | 731222104302 | GOWTHAM A | ✓ | | <i>A. Gowtham</i> |

PROGRAM COORDINATOR

HOD

PRINCIPAL

Principal

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
ACADEMIC YEAR 2023-2024**

**CERTIFICATE PROGRAM ON CUTTING EDGE MOBILE
APPLICATIONS DEVELOPMENT USING KOTLIN
ENROLLED STUDENTS NAMELIST**

DATE: 05.02.2024 to 10.02.2024

| S.NO | REG. NO | NAME |
|-----------------|--------------|--------------------|
| III YEAR | | |
| 1 | 731221104001 | AADHI SURYA K |
| 2 | 731221104004 | ARULMURUGAN S |
| 3 | 731221104005 | BABUSHANKAR S |
| 4 | 731221104007 | BAMBAVASAN V |
| 5 | 731221104008 | CHANDRA PRAKASH K |
| 6 | 731221104009 | DHAKSHINA MOORTHIE |
| 7 | 731221104012 | DURGA K |
| 8 | 731221104013 | GUNASEKARAN P |
| 9 | 731221104014 | GUNASEKARAN S |
| 10 | 731221104015 | HARIPRABHA V |
| 11 | 731221104017 | KAMALESH K |
| 12 | 731221104021 | LALITHA T |
| 13 | 731221104022 | MADHAN G |
| 14 | 731221104025 | MOUSIKA S |
| 15 | 731221104026 | NANDHINI P |
| 16 | 731221104027 | PANDIYARAJ P |
| 17 | 731221104028 | PRIYA DHARSHINI S |
| 18 | 731221104029 | RAVI KUMAR P |
| 19 | 731221104031 | RUBIKA G |
| 20 | 731221104033 | SHYAMKUMAR S |
| 21 | 731221104034 | SENTHILVEL S |
| 22 | 731221104035 | SUGANYA K |


Principal

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| | | |
|----------------|--------------|-----------------------|
| 23 | 731221104036 | SURYA S |
| 24 | 731221104037 | SUSHMINA M |
| 25 | 731221104038 | VASANTHKUMAR S |
| 26 | 731221104039 | VIGNESH M |
| 27 | 731221104040 | YAMUNA K |
| 28 | 731221104301 | AMUTHAMALAR R |
| 29 | 731221104302 | BHARANI DHARAN.M |
| 30 | 731221104303 | GAYATHRI R |
| 31 | 731221104305 | NANDINI M |
| 32 | 731221104306 | SNEHA L |
| 33 | 731221104307 | SRINIVAS V |
| 34 | 731221104308 | SUBASHINI P |
| 35 | 731221104701 | NIKETHA S |
| II YEAR | | |
| 36 | 731222104001 | ABINAYA P |
| 37 | 731222104003 | CHANDRAKALA N |
| 38 | 731222104004 | CHANDRU K |
| 39 | 731222104005 | DEEPA T |
| 40 | 731222104006 | DEVADHARSHINI M |
| 41 | 731222104008 | ELAKKIYA K |
| 42 | 731222104009 | GIBSON SHANTHAKUMAR R |
| 43 | 731222104010 | GOKILA S |
| 44 | 731222104012 | HAFILA A |
| 45 | 731222104013 | INIKA C |
| 46 | 731222104014 | JAYASHREE K |
| 47 | 731222104015 | JAYASREE D |
| 48 | 731222104016 | JAYASURYA B |
| 49 | 731222104019 | JOTHI S |
| 50 | 731222104020 | KARTHI K |
| 51 | 731222104021 | KARUNYA K |
| 52 | 731222104022 | KEERTHIGA V |

Principal

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| | | |
|----|--------------|------------------|
| 53 | 731222104023 | LAKSHMI B |
| 54 | 731222104024 | LINGARAJU K |
| 55 | 731222104025 | NEETHU S |
| 56 | 731222104026 | NIVETHA P |
| 57 | 731222104027 | POOMATHI S |
| 58 | 731222104029 | PUSHPASRI M |
| 59 | 731222104030 | RAKSHITHA V |
| 60 | 731222104031 | SAHEER H |
| 61 | 731222104032 | SANJAIKUMAR S |
| 62 | 731222104033 | SANJAY V |
| 63 | 731222104034 | SANJAY KUMAR S |
| 64 | 731222104035 | SATHIYALAKSHMI M |
| 65 | 731222104036 | SHAKTHI S |
| 66 | 731222104038 | SIDHARAJ S |
| 67 | 731222104039 | SOWDESWARI A |
| 68 | 731222104040 | SOWNDHAR D |
| 69 | 731222104041 | SUMITHRA S |
| 70 | 731222104302 | GOWTHAM A |

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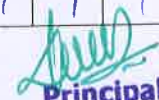
ACADEMIC YEAR 2023-2024

CERTIFICATE PROGRAM ON CUTTING EDGE MOBILE APPLICATIONS

DEVELOPMENT USING KOTLIN

ATTENDANCE SHEET

| S. N O | REGISTER NO | NAME | ATTENDANCE OF THE PARTICIPANTS | | | | | | | | | | | |
|-----------------|----------------|--------------------|--------------------------------|----|------------|----|------------|----|------------|----|------------|----|------------|----|
| | | | 05/02/2024 | | 06/02/2024 | | 07/02/2024 | | 08/02/2024 | | 09/02/2024 | | 10/02/2024 | |
| | | | FN | AN | FN | AN | FN | AN | FN | AN | FN | AN | FN | AN |
| III YEAR | | | | | | | | | | | | | | |
| 1 | 731221104001 | AADHI SURYA K | / | / | / | / | / | / | / | / | / | / | / | / |
| 2 | 731221104004 | ARULMURUGAN S | / | / | / | / | / | / | / | / | / | / | / | / |
| 3 | 731221104005 | BABUSHANKAR S | / | / | / | / | / | / | / | / | / | / | / | / |
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| 13 | 731221104022 | MADHAN G | / | / | / | / | / | / | / | / | / | / | / | / |
| 14 | 731221104025 | MOUSIKA S | / | / | / | / | / | / | / | / | / | / | / | / |
| 15 | 731221104026 | NANDHINI P | / | / | / | / | / | / | / | / | / | / | / | / |
| 16 | 731221104027 | PANDIYARAJ P | / | / | / | / | / | / | / | / | / | / | / | / |


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| 17 | 731221104028 | PRIYA DHARSHINI S | / | / | / | / | / | / | / | / | / | / | / |
| 18 | 731221104029 | RAVI KUMAR P | / | / | / | / | / | / | / | / | / | / | / |
| 19 | 731221104031 | RUBIKA G | / | / | / | / | / | / | / | / | / | / | / |
| 20 | 731221104033 | SHYAMKUMAR S | / | / | / | / | / | / | / | / | / | / | / |
| 21 | 731221104034 | SENTHILVEL S | / | / | / | / | a | a | / | / | / | / | / |
| 22 | 731221104035 | SUGANYA K | / | / | / | / | / | / | / | / | / | / | / |
| 23 | 731221104036 | SURYA S | / | / | / | / | / | / | / | / | / | / | / |
| 24 | 731221104037 | SUSHMINA M | / | / | / | / | / | / | / | / | / | / | / |
| 25 | 731221104038 | VASANTHKUMAR S | / | / | / | / | / | / | / | / | / | / | / |
| 26 | 731221104039 | VIGNESH M | / | / | / | / | / | / | / | / | / | / | / |
| 27 | 731221104040 | YAMUNA K | / | / | / | / | / | / | / | / | / | / | / |
| 28 | 731221104301 | AMUTHAMALAR R | / | / | / | / | / | / | / | / | / | / | / |
| 29 | 731221104302 | BHARANI DHARAN.M | / | / | / | / | / | / | / | / | / | / | / |
| 30 | 731221104303 | GAYATHRI R | / | / | / | / | / | / | / | / | / | / | / |
| 31 | 731221104305 | NANDINI M | / | / | / | / | / | / | / | / | / | / | / |
| 32 | 731221104306 | SNEHA L | / | / | / | / | / | / | / | / | / | / | / |
| 33 | 731221104307 | SRINIVAS V | / | / | / | / | / | / | / | a | a | / | / |
| 34 | 731221104308 | SUBASHINI P | / | / | / | / | / | / | / | / | / | / | / |
| 35 | 731221104701 | NIKETHA S | / | / | / | / | / | / | / | / | / | / | / |
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| 36 | 731222104001 | ABINAYA P | / | / | / | / | / | / | / | / | / | / | / |
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| 40 | 731222104006 | DEVADHARSHINI M | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 41 | 731222104008 | ELAKKIYA K | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 41 | 731222104009 | GIBSON SHANTHAKUMAR R | ✓ | ✓ | a | a | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 43 | 731222104010 | GOKILA S | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 44 | 731222104012 | HAFILA A | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 45 | 731222104013 | INIKA C | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 46 | 731222104014 | JAYASHREE K | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 47 | 731222104015 | JAYASREE D | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 48 | 731222104016 | JAYASURYA B | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 49 | 731222104019 | JOTHI S | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 50 | 731222104020 | KARTHI K | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 51 | 731222104021 | KARUNYA K | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 52 | 731222104022 | KEERTHIGA V | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 53 | 731222104023 | LAKSHMI B | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | a | a | ✓ | ✓ |
| 54 | 731222104024 | LINGARAJU K | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 55 | 731222104025 | NEETHU S | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 56 | 731222104026 | NIVETHA P | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 57 | 731222104027 | POOMATHI S | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 58 | 731222104029 | PUSHPASRI M | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 59 | 731222104030 | RAKSHITHA V | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 60 | 731222104031 | SAHEER H | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 61 | 731222104032 | SANJAIKUMAR S | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 62 | 731222104033 | SANJAY V | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | a | a | ✓ | ✓ | ✓ |
| 63 | 731222104034 | SANJAY KUMAR S | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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| 64 | 731222104035 | SATHIYALAKSHMI M | / | / | / | / | / | / | / | / | / | / | / | / |
| 65 | 731222104036 | SHAKTHI S | / | / | / | / | / | / | / | / | / | / | / | / |
| 66 | 731222104038 | SIDHARAJ S | / | / | / | / | / | / | / | / | / | / | / | / |
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| 68 | 731222104040 | SOWNDHAR D | / | / | / | a | a | / | / | / | / | / | / | / |
| 69 | 731222104041 | SUMITHRA S | / | / | / | / | / | / | / | / | / | / | / | / |
| 70 | 731222104302 | GOWTHAM A | / | / | / | / | / | / | / | / | / | / | / | / |
| TOTAL NO OF STUDENTS PRESENT | | | 70 | 70 | 69 | 69 | 68 | 68 | 68 | 68 | 68 | 68 | 70 | 70 |
| TOTAL NO OF STUDENTS ABSENT | | | NIL | NIL | 01 | 01 | 02 | 02 | 02 | 02 | 02 | 02 | NIL | NIL |
| SIGNATURE OF THE PROGRAM COORDINATOR | | | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> |
| SIGNATURE OF THE HOD | | | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> |

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
ACADEMIC YEAR 2023-2024**

**CUTTING EDGE MOBILE APPLICATIONS DEVELOPMENT USING KOTLIN
ASSESSMENT**

ANSWER ALL QUESTIONS (30*1=30 MARKS)

1. What is Kotlin primarily used for in Android development?

- a) Backend development
- b) Frontend development
- c) Mobile app development
- d) Database management

2. Kotlin is a modern programming language developed by which company?

- a) Apple
- b) Microsoft
- c) Google
- d) JetBrains

3. Kotlin was first released in which year?

- a) 2010
- b) 2011
- c) 2017
- d) 2015

4. Which of the following is the primary advantage of using Kotlin over Java in Android development?

- a) Kotlin is faster to compile
- b) Kotlin reduces boilerplate code
- c) Kotlin has better support for UI design
- d) Kotlin is easier to learn

5. Kotlin is fully interoperable with which language for Android development?

- a) Swift
- b) Java
- c) Python

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d) C++

6. What is a "data class" in Kotlin?

- a) A class that holds only constants
- b) A class used for user interface elements
- c) A class used to hold and manage data
- d) A class for handling exceptions

7. What is the default visibility modifier for a class in Kotlin?

- a) private
- b) public
- c) protected
- d) internal

8. What keyword is used to define a variable in Kotlin that cannot be reassigned?

- a) final
- b) var
- c) val
- d) let

9. Which Kotlin feature is used to handle nullability in variables?


- a) Safe calls (?.)
- b) Smart casts
- c) Lambda expressions
- d) Singleton objects

10. What is the purpose of the companion object in Kotlin?

- a) To define constants
- b) To create static members for a class
- c) To define interfaces
- d) To handle null safety

11. In Kotlin, which function is used to safely call methods on a nullable object?

- a) !!
- b) ?.
- c) let


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d) apply

12. What does the !! operator do in Kotlin?

- a) Checks for null and throws an exception if the object is null
- b) Initializes a variable
- c) Performs null checking
- d) It is used to define a data class

13. Which of the following is the primary function of Android Studio in Kotlin development?

- a) Build and run Kotlin code
- b) Provide a Kotlin runtime
- c) Manage databases
- d) Compile Java code only

14. How can you define a function in Kotlin?

- a) `def fun name() {}`
- b) `function name() {}`
- c) `fun name() {}`
- d) `method name() {}`

15. In Kotlin, how do you define a list that cannot be modified after creation?

- a) `val`
- b) `mutableListOf`
- c) `listOf`
- d) `const`

16. What is an extension function in Kotlin?

- a) A function that extends the capabilities of an Android component
- b) A function that extends the length of a string
- c) A function that adds functionality to an existing class without modifying it
- d) A function that extends the Android lifecycle

17. In Kotlin, what type of expression is used to handle multiple possible conditions

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efficiently?

- a) If-else
- b) When expression
- c) Loop
- d) Try-catch

18. What is a sealed class in Kotlin used for?

- a) To prevent inheritance
- b) To create multiple inheritance
- c) To restrict class hierarchy to a limited set of types
- d) To handle UI components

19. What is the key advantage of using Kotlin coroutines in Android?

- a) To perform synchronous tasks
- b) To handle multithreading and asynchronous programming more easily
- c) To interact with databases
- d) To reduce the size of the APK

20. In Kotlin, which operator is used to define a safe call?

- a) let
- b) !
- c) ?.
- d) !!

21. What is the role of the `apply` function in Kotlin?

- a) Applies a function to a nullable object
- b) Applies changes to an object and returns it
- c) Creates an anonymous function
- d) It is used to start a new thread

22. What is the use of the `lateinit` keyword in Kotlin?

- a) To initialize variables immediately
- b) To create a variable that will be initialized later
- c) To define null values
- d) To define constant values

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23. Which of the following is true about Kotlin's type inference system?

- a) It requires explicit type declarations
- b) It can automatically infer the type of variables from their initializer
- c) It only works for primitive types
- d) It only supports String types

24. How does Kotlin handle default parameter values in functions?

- a) It throws an error if parameters are missing
- b) It uses null as the default
- c) It allows default values to be specified in the function declaration
- d) It uses a static value for all parameters

25. What does the `by lazy` keyword in Kotlin represent?

- a) Lazy initialization of a property
- b) A lazy loop structure
- c) A function to execute in the background
- d) A property that is initialized lazily in a coroutine

26. Which function is used to start a new coroutine in Kotlin?

- a) `launch()`
- b) `createCoroutine()`
- c) `runBlocking()`
- d) `startCoroutine()`

27. What is the Kotlin "Delegation Pattern" used for?

- a) To delegate method calls to another object
- b) To handle coroutine scheduling
- c) To delegate variable initialization
- d) To define the main entry point of an app

28. Which of the following is the correct way to define a nullable type in Kotlin?

- a) `String?`
- b) `String null`
- c) `String!`
- d) `String??`

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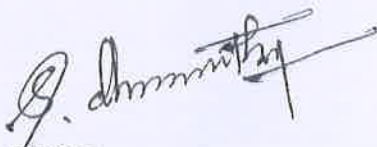
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29. Which of the following features makes Kotlin ideal for Android development?



- a) Static typing and null safety
- b) High memory consumption
- c) Java-like syntax with no type safety
- d) Limited support for Android SDK

30. How do you handle exceptions in Kotlin?

- a) Using the `try-catch` block
- b) Using `throw` only
- c) Using `except`
- d) Using `error`


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2023-2024

CERTIFICATE PROGRAM ON "CUTTING EDGE MOBILE

APPLICATIONS DEVELOPMENT USING KOTLIN"

STUDENTS MARKLIST

DATE: 05.02.2024 to 10.02.2024

| S.NO | REG. NO | NAME | MARKS |
|-----------------|--------------|--------------------|-------|
| III YEAR | | | |
| 1 | 731221104001 | AADHI SURYA K | 95 |
| 2 | 731221104004 | ARULMURUGAN S | 92 |
| 3 | 731221104005 | BABUSHANKAR S | 94 |
| 4 | 731221104007 | BAMBAVASAN V | 93 |
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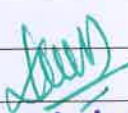
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| 25 | 731221104038 | VASANTHKUMAR S | 78 |
| 26 | 731221104039 | VIGNESH M | 94 |
| 27 | 731221104040 | YAMUNA K | 91 |
| 28 | 731221104301 | AMUTHAMALAR R | 88 |
| 29 | 731221104302 | BHARANI DHARAN.M | 86 |
| 30 | 731221104303 | GAYATHRI R | 83 |
| 31 | 731221104305 | NANDINI M | 95 |
| 32 | 731221104306 | SNEHA L | 94 |
| 33 | 731221104307 | SRINIVAS V | 83 |
| 34 | 731221104308 | SUBASHINI P | 90 |
| 35 | 731221104701 | NIKETHA S | 96 |
| II YEAR | | | |
| 36 | 731222104001 | ABINAYA P | 85 |
| 37 | 731222104003 | CHANDRAKALA N | 91 |
| 38 | 731222104004 | CHANDRU K | <u>35</u> |
| 39 | 731222104005 | DEEPA T | 72 |
| 40 | 731222104006 | DEVADHARSHINI M | 69 |
| 41 | 731222104008 | ELAKKIYA K | 79 |
| 42 | 731222104009 | GIBSON SHANTHAKUMAR R | 82 |
| 43 | 731222104010 | GOKILA S | 92 |
| 44 | 731222104012 | HAFILA A | 83 |
| 45 | 731222104013 | INIKA C | 94 |
| 46 | 731222104014 | JAYASHREE K | 95 |
| 47 | 731222104015 | JAYASREE D | 86 |
| 48 | 731222104016 | JAYASURYA B | 82 |
| 49 | 731222104019 | JOTHI S | 93 |
| 50 | 731222104020 | KARTHI K | 92 |
| 51 | 731222104021 | KARUNYA K | 85 |
| 52 | 731222104022 | KEERTHIGA V | 81 |


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| | | | |
|----|--------------|------------------|-----------|
| 53 | 731222104023 | LAKSHMI B | 75 |
| 54 | 731222104024 | LINGARAJU K | <u>38</u> |
| 55 | 731222104025 | NEETHU S | 86 |
| 56 | 731222104026 | NIVETHA P | 76 |
| 57 | 731222104027 | POOMATHI S | 92 |
| 58 | 731222104029 | PUSHPASRI M | 83 |
| 59 | 731222104030 | RAKSHITHA V | 87 |
| 60 | 731222104031 | SAHEER H | 96 |
| 61 | 731222104032 | SANJAIKUMAR S | 88 |
| 62 | 731222104033 | SANJAY V | <u>42</u> |
| 63 | 731222104034 | SANJAY KUMAR S | 86 |
| 64 | 731222104035 | SATHIYALAKSHMI M | 89 |
| 65 | 731222104036 | SHAKTHI S | 94 |
| 66 | 731222104038 | SIDHARAJ S | 91 |
| 67 | 731222104039 | SOWDESWARI A | 95 |
| 68 | 731222104040 | SOWNDHAR D | 79 |
| 69 | 731222104041 | SUMITHRA S | 93 |
| 70 | 731222104302 | GOWTHAM A | 95 |

Note: The students those who have secured above 50 Marks and above are consider eligible for program completion.

PROGRAM COORDINATOR

HOD

PRINCIPAL

Principal

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
ACADEMIC YEAR 2023-2024**

SUMMARY/ OUTCOME REPORT

Name of the Certificate Program : **CUTTING EDGE MOBILE APPLICATIONS
DEVELOPMENT USING KOTLIN**

Program Code : 24CSECEMADKCP02

Name of the Program Coordinator: S. DHARANITHARAN

Duration : 36 Hours

Number of Students Enrolled : 70

Number of Students Completed : 67

I hereby affirm that the entire Program contents in the Certificate Program "**Cutting Edge Mobile Applications Development Using Kotlin**" listed in the Syllabus have been actually learned by the students as the part of the prescribed co-curricular activities through Certificate Program.

I confirmed that the Certificate Program title as **Cutting-Edge Mobile Applications Development Using Kotlin** Work Bench was done by me in the beginning of this semester and Program delivery with attendance of the students were recorded.

I confirmed that all registered students for this Certificate Program were actively attended and learned well throughout the duration of this Program. And all students were successfully completed and eligible to receive the participation certificate.

OUTCOME: Students shall be able to gain the knowledge in

- **Kotlin Proficiency:** Master Kotlin syntax, null safety, and key features for efficient Android development.
- **Android App Development:** Learn to design, develop, and integrate data storage for Android apps.
- **Modern Architecture:** Apply MVVM and clean architecture for scalable, maintainable apps.
- **Coroutines & App Deployment:** Use Kotlin coroutines for background tasks and develop skills in debugging, testing, and deploying apps.

Name : Mr.S.DHARANITHARAN

Designation: Assistant Professor/CSE

Principal
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