

DIPLOMA IN ANDROID



C Programming

INTRODUCTION

- The C Language and its Advantages
- The Structure of a C Program
- Writing C Programs
- Executing a C Program

- Assignment Operators
- Increment and Decrement Operators
- Ternary Operator
- Arithmetic
- Expressions
- Precedence of Operator

DECISION MAKING & LOOPING

- Decision Making Statements (If, If...Else, If...Else If...Else)
- Nesting of If...Else
- Switch Statements
- GOTO
- Statements
- Looping Statements (While, Do...While, For)
- Jumps in Loops
- Nesting of Loops

USER DEFINED FUNCTIONS

- Need for User Defined Functions
- Function Declaration
- Defining a Function
- Return Values and Types
- Categories of Functions
- Recursion
- Passing Arrays to Functions
- Passing String to Functions
- Scope, Visibility, and Lifetime of Variables

OPERATORS & EXPRESSIONS

- Arithmetic Operators

POINTERS

- What is a Pointer?

- Accessing the address of a Variable
- Declaring Pointers Variables
- Accessing a Variable through its Pointer
- Pointers and Arrays
- Pointers and Character String Array of Pointers
- Pointers as Function Arguments

ARRAYS & STRINGS

- One Dimensional Arrays
- Two Dimensional Arrays
- Initialization of Arrays
- Declaring and Initializing
- String Variables
- Reading and Writing Strings
- String Handling Functions
- Table of Strings

CONSTANTS, VARIABLES & DATATYPES

- Keywords and identifiers
- Constants
- Variable
- Data Types

C++ Programming

INTRODUCTION

- Concepts of Object Oriented Programming
- Benefits of OOP
- What is C++
- Structure of C++ Program
- Creating the Source File
- Compiling and Linking

CLASSES & OBJECTS

- Specifying a Class
- Defining Member Functions
- Making an Outside Function Inline
- Nesting of Member Functions
- Private Member Functions
- Arrays within a Class
- Memory Allocation for Objects
- Static Data Members
- Static Member Functions
- Arrays of Objects
- Objects as Function Arguments
- Friendly Functions
- Returning Objects
- Pointer to Members

OPERATORS & EXPRESSIONS

- Operators in C++
- Scope Resolution Operator
- Member Dereferencing Operators
- Memory Management Operators
- Manipulators
- Type Cast Operator
- Expressions and Types of Expressions
- Special Assignment Expressions
- Implicit Conversions
- Operator Overloading
- Operator Precedence
- Control Structures

OPREATORS OVERLOADING

- Defining Operator Overloading
- Overloading Unary Operators
- Overloading Binary Operators
- Overloading Binary Operators using Friends
- Manipulation of Strings using Operators
- Rules of Operator Overloading

- Type Conversion

VIRTUALS FUNCTIONS & POLYMORPHISM

- Polymorphism Overview
- Virtual Functions
- Pure Virtual Functions

EXCEPTION HANDLING

- Basics of Exception Handling
- Exception Handling Mechanism
- Throwing Mechanism
- Catching Mechanism

FUNCTIONS IN C++

- Function Prototyping
- Call by Reference
- Return by Reference
- Inline Functions
- Default Arguments
- Recursion
- Function Overloading
- Friend and Virtual Functions

CONSTRUCTORS & DESTRUCTORS

- Constructors
- Parameterized Constructors
- Multiple Constructors in a Class
- Constructors with Default Arguments
- Dynamic Initialization of Objects
- Copy Constructor
- Dynamic Constructors
- Destructors

INHERITANCE

- Defining Derived Classes
- Single Inheritance
- Types of Inheritance
- Virtual Base Classes
- Abstract Classes

- Constructors in Derived Classes
- Member Classes

MANIPULATING STRINGS

- Creating String Objects
- Manipulating String Objects
- Relational Operations
- Accessing characters in String
- Comparing and Swapping

CONSTANTS, VARIABLES & DATATYPES

- Keywords and identifiers
- Tokens
- Data Types
- Type Compatibility
- Variable Declaration
- Dynamic Initialization of Variables

CORE JAVA

Introduction

- Programming language Types and Paradigms
- Why Java ?
- Flavors of Java
- Java Designing Goal
- Role of Java Programmer in Industry
- Features of Java Language
- JVM –The heart of Java
- Java’s Magic Bytecode
- Language Fundamentals

The Java Environment:

- Installing Java.
- Java Program Development
- Java Source File Structure
- Compilation
- Executions

Basic Language Elements:

- Lexical Tokens, Identifiers
- Keywords, Literals, Comments
- Primitive Datatypes, Operators
- Assignments

Object Oriented Programming

- Class Fundamentals
- Object & Object reference
- Object Life time & Garbage Collection.
- Creating and Operating Objects
- Constructor & initialization code block
- Access Control, Modifiers, methods
- Nested , Inner Class
- Abstract Class & Interfaces
- Defining Methods, Argument Passing Mechanism
- Method Overloading
- Use of Modifiers with Classes & Methods.
- Extending Classes and Inheritance
- Use and Benefits of Inheritance in OOP
- Types of Inheritance in Java
- Inheriting Data Members and Methods
- Role of Constructors in inheritance

- Overriding Super Class Methods.
- Use of “super”.
- Polymorphism in inheritance.
- Type Compatibility and Conversion
- Implementing interfaces.

Package

- Organizing Classes and Interfaces in Packages
- Package as Access Protection
- Defining Package.
- CLASSPATH Setting for Packages.
- Making JAR Files for Library Packages
- Import and Static Import
- Naming Convention For Packages

Exception Handling:

- The Idea behind Exception
- Exceptions & Errors
- Types of Exception
- Control Flow In Exceptions
- JVM reaction to Exceptions
- Use of try, catch, finally, throw, throws in Exception Handling.

- In-built and User Defined Exceptions
- Checked and Un-Checked Exceptions

Array & String :

- Defining an Array
- Initializing & Accessing Array
- Multi –Dimensional Array
- Operation on String
- Mutable & Immutable String
- Using Collection Bases Loop for String
- Tokenizing a String
- Creating Strings using StringBuffer

The Collection Framework

- Collections of Objects
- Collection Types
- Sets
- Sequence
- Map

Android

Introduction to Android

- What is Android?
- Setting up development environment
- Dalvik Virtual Machine & .apk file extension
- Fundamentals:
- Basic Building blocks - Activities, Services, Broadcast Receivers & Content providers
- b. UI Components - Views & notifications
- c. Components for communication - Intents & Intent Filters
- Android API levels (versions & version names)

Application Structure (in detail)

- AndroidManifest.xml
- uses-permission & uses-sdk
- Resources & R.java
- Assets
- Layouts & Drawable Resources

- Activities and Activity lifecycle
- First sample Application
- Android Training Course Syllabus ipsr solutions ltd

Emulator-Android Virtual Device

- Launching emulator
- Editing emulator settings
- Emulator shortcuts
- Logcat usage
- Introduction to DDMS
- Second App:- (switching between activities)
- Develop an app for demonstrating the communication between Intents

Basic UI design

- Form widgets
- Text Fields
- Layouts
- [dip, dp, sip, sp] versus px
- Examples

Preferences

- SharedPreferences

- Preferences from xml
- Examples

Menu

- Option menu
- Context menu
- Sub menu
- menu from xml
- menu via code
- Examples

Intents (in detail)

- Explicit Intents
- Implicit intents
- Examples
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UI design

- Time and Date
- Images and media
- Composite
- AlertDialogs & Toast
- Popup
- Examples

Styles & Themes

- styles.xml

- drawable resources for shapes, gradients (selectors)
- style attribute in layout file
- Applying themes via code and manifest file
- Examples

Content Providers

- SQLite Programming
- SQLiteOpenHelper
- SQLiteDatabase
- Cursor
- Reading and updating Contacts
- Reading bookmarks
- Example :
- Develop an App to demonstrate database usage. CRUD operations must be implemented. Final details should be viewed in GridView as well as in ListView.

Linkify

- Web URLs, Email address, text, map address, phone numbers

- MatchFilter & TransformFilter
- Examples
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Adapters andWidgtes

- Adapters:-
- ArrayAdapter
- BaseAdapters
- ListView and ListActivity
- Custom listview
- GridView using adapters
- Gallery using adapters
- Examples

Notifications

- Broadcast Receivers
- Services and notifications
- Toast
- Alarms

Custom components

- Custom Tabs
- Custom animated popup panels
- Other components
- Examples

Threads

- Threads running on UI thread (runOnUiThread)
- Worker thread

- Handlers & Runnable
- AsyncTask (in detail)
- Examples

Advanced

- Live Folders
- Using sdcards
- XML Parsing
- JSON Parsing
- Maps, GPS, Location based Services
- Accessing Phone services (Call, SMS, MMS)
- Network connectivity services
- Sensors

HTML5

HTML5 Introduction

Semantic Elements

- <article>
- <aside>
- <figcaption>
- <figure>
- <footer>
- <header>
- <mark>
- <nav>
- <progress>
- <section>
- <summary>
- <time>

Form Elements

- <datalist>
- <keygen>
- <output>

Form Input Types

- Color
- Date

- Datetime
- Datetime-local
- Email
- Month
- Number
- Range
- Search
- Tel
- Url
- Time
- Week

Form Attributes

- autocomplete
- autofocus
- form
- formaction
- formenctype
- formmethod
- formnovalidate
- formtarget
- height and width
- list
- min and max

- multiple
- pattern (regexp)
- placeholder
- required
- step

Media Elements

- <source>
- <audio>
- <video>

Canvas

- Line
- Circle
- Text
- Rectangle
- Paths
- Bezier
- Quadratic
- Images
- Create Gradients
-

Canvas vs. SVG

Web Workers

App Cache

SSE

SVG

- Circle
- Rectangle Stroke
- Rounded Rectangle
- Rectangle
- Circle Stroke
- Ellipse
- Line
- Polyline
- Text
- Gradients
- Fill Patterns
- Clip Path
- Masks

Drag and Drop

- Drag and Drop
- ondragstart and setData()
- ondragover

Geolocation

Web Storage

- Local Storage
- sessionStorage

CSS3 Introduction Borders

- border-radius
- Border Images

Backgrounds

- Background Size
- background-origin

Text Effects

- text-shadow
- box-shadow

Text

- text-overflow
- word-wrap
- word-break

Fonts

Transforms

- 2D Transforms
- 3D Transforms

Transitions

- transition-delay
- transition-duration

- transition-property
- transition-timing-function

Animations

- animation-delay
- animation-name

Multiple Columns

- column-count
- column-gap
- column-rule-style
- column-rule-width
- column-rule-color
- column-rule
- column-span

- column-width

User Interface

- resize
- outline-offset

Overview

- What is jQuery?
- Downloading and installing jQuery
- Creating a simple jQuery enabled page
- Overview of jQuery's features

Retrieving Page Content

- Using basic jQuery selectors
- Using basic jQuery filters
- Using jQuery attribute filters
- Child, visibility, and content filters
- Form selectors and filters
- Traversing documents

- Understanding jQuery statement chaining

Manipulating Page Content

- Creating, getting, and setting content
- Manipulating attributes
- Inserting content
- Wrapping, replacing, and removing content
- Working with CSS

Working with Events

- Understanding the jQuery event handling features
- Binding and unbinding events
- Convenient event helper methods
- Using the jQuery event object

jQuery Animations and Effects

- Hiding and showing elements
- Fading elements in and out
- Sliding elements

- Creating custom animations

Using the jQuery UI Plug In

- Introduction to jQuery
- Exploring the jQuery UI widgets
- Exploring the jQuery UI effects
- Using the jQuery UI ThemeRoller
- Downloading and installing jQuery UI

Putting It All Together

- Overview of the sample web site
- Using the accordion widget
- Creating an image rotator
- Building hover tooltips
- Making an image selector
- Using the Resizable effect

We are also providing training on Core & Adv java, Android, Web Designing, Graphics designing, PHP & MySQL training, C & C++ Programing, asp.net & C#.net & Final year project for computer science student.

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