Diploma In JAVA

KDN INFOTECH PVT LTD

C course content

+Basics content of C Language

o What is C language
o History of C Language
o Features of C Language
o How to Install C
o The Structure of a C Program ➤ How to Write C Programs?
o Compilation process in C
o Printf() and scanf() in C

+C language Overview

o Veriables in C and Its Types

- Data Types in C
- C laguage Keywods
- Identifiers in C and their type
- Role of operater in C language
- Comments in C and their Types
- Format Specifier in C language
- Esacape sequence
- (ASCII) American Standard Code for information interchange values in C
- Role of a constraints in C
- The Types of Literals that exist in C programs
- Importance of Tokens in C
- Boolean Data Type in C
- Static keyword in C
- Role of programming errors in C and their types
- Role of compile time and run time error in C
- Conditional operater in C language
- Bitwise operater in C and their types

Control Statements Which Used C Language:

- The IF.....ELSE Statement in C and variants of if statement in C language
- IF......ELSE ladder (C switch statement)
- The difference between If ...else and switch statement
- Loops in C programming and their three types
- Do while loop in C
- While loop in C (pre-tested loop)
- For loop in C Language
- Nested loop in C language ➢ Infinite loop in C language ➢ Role of C break statement
- C continue statement
- goto statement in c
- type casting in c

Function in C

- Advantages of C Function and their Types
- Call by value method in C and call by reference method in C
- Recursion process in C
- Storage classes in C and their Four types

Array in C

- Array: what and why?
- 1D arrays
- 2Darrays
- Mulri Dimentional array
- Dynamic arrays

Pointers in C

- Pointers in C and declaring a pointer
- Double pointer in C
- Dangling pointer in C
- Sizeof() operater in c
- Constraint pointer in c and their syntax
- Void pointer in c
- Dereference pointer (indirection operator) in C and why we use

Dynamic memory in C

- ➤ The concept of dynamic memory allocation in c language and their 4 types of functions

String Handling in C

- gets() puts() function in C
- Role of string function
- String Length: strlen function in C language
- The strcpy function
- String concatenation: strcat()
- Compare string function in c …..strcmp()
- The reverse string function…..strrev()
- String lowercase function ….strlwr()
- String uppercase function…strupr()
- String strstr()
- Match function in C

The Structures and union in C

- Advantages of a structure in c
- Defining structure …..typedef keyword in C
- Uses of an array structures in c
- Nested structure in C
- Structure padding in c
- Defining union datatype in c

File Management in C

- Introduction of file management and need of file handling in C
- Fprintf() and fscanf() function
- Writing file fputs() function and reading file fgets() function
- fseek() function in c
- rewind() function in c
- ftell() dunction in c

Dynamic Memory allocation

- ✔ Introduction to Dynamic Memory Allocation
- ✔ Malloc
- ✔ Calloc
- ✔ Realloc
  Free

- ## CPP COURSE CONTENTS

C++ Overview

- ◻ Features of C++ language
- ◻ Installation
- ◻ Cpp basic input/output operation
- ◻ Variable and its syntax
- ◻ Datatypes in CPP(Basic,Derived,Enumaration,user defined)
- ◻ List of all keywords in cpp
- ◻ The Role of an operators
- ◻ The role of an Identifier
- ◻ Cpp expression

Control statements of CPP

- ◻ Types of statements
- ◻ If _else statement

- Cpp Switch statement
- For loop
- While loop
- Do while loop
- Break statement
- Continue statement
- Goto statement
- Commnet statement

Functions in CPP

- call by value and call by reference
- recursion in CPP
- storage classes in cpp

Arrays In CPP

- Advantages And disadvantages of arrays
- Types of an Arrays
- Passing arrays to Function in cpp
- Multidimensional arrays in cpp

Pointers Variable in CPP

- Advantages and uses of pointer
- Sizeof() operater in cpp
- Array of pointer in cpp
- Void pointer in cpp
- How to creat references
- Difference between references and pointers
- Function pointer in cpp
- Memory management in cpp

- Malloc() vs new in cpp
- Free vs delete in cpp

Object class in cpp

- Oops concept in cpp
- Object and class in cpp
- Constructer and their types in cpp
- Copy constructer
- Destructor in cpp
- This pointer in cpp
- Static keyword in cpp
- Struct in cpp
- Enumeration data type
- Friend function in cpp

Inheritance in cpp

- Advantages and cpp supports five types of inheritance
- Aggregation HAS-A relationship)

Polymorphism in cpp

- Types of polymorphism
- Overloading (function and operater)
- Types of overloading in cpp
- Overriding function in cpp
- Virtual function

- Interfaces in cpp (abstract class)

- Data abstraction in cpp

- Name spaces in CPP

- Strings in cpp

- Advantages and their classes ✓ Cpp files and streams

- Cpp getlines()

✓ Cpp int to string

Functions and Variables

- ✓ Functions: Declaration and Definition
- ✓ Variables: Definition, Declaration, and Scope
- ✓ Variables: Dynamic Creation and Derived Data
- ✓ Arrays and Strings in C++
- Qualifiers

Classes in C++

- ✓ Defining Classes in C++
- ✓ Classes and Encapsulation
- ✓ Member Functions
- ✓ Instantiating and Using Classes
- ✓ Using Constructors
- ✓ Multiple Constructors and Initialization Lists
- ✓ Using Destructors to Destroy Instances
- Friendship

Operator Overloading

- ✓ Operator Overloading
- ✓ Working with Overloaded Operator Methods

Initialization and Assignment

✔ Initialization vs. Assignment
✔ The Copy Constructor
✔ Assigning Values
✔ Specialized Constructors and Methods
  Constant and Static Class Members

Storage Management

✔ Memory Allocation
  Dynamic Allocation: new and delete

Input and Output in C++ Programs

✔ Standard Streams
✔ Manipulators
✔ Unformatted Input and Output
  File Input and Output

CORE JAVA

BASIC OF JAVA:

✔ Java - What, Where and Why?
✔ History and Features of Java 7 And
✔ Java 8Internals of Java Program
✔ Difference between JDK,JRE and JVM in
✔ JavaInternal modules of JVM
✔ Variable and Data Type(user defined and system
  defined)Unicode System in Java
  Naming Convention in java

OOPS CONCEPTS:

- ✔ Advantage of OOPs (C++
- ✔ REVISION)Object and Class
- ✔ Difference.
- ✔ Method Overloading and
- ✔ Overriding.Constructor with
- ✔ their types.
- ✔ static variable, method and types of java

blocksthis keyword in java

Inheritance Aggregation(IS-A) and Composition(HAS-A)

in javaCovariant Return Type in inheritance

super keyword and Final

keyword.Instance Initializer

block in java

- Runtime Polymorphism in java
- static and Dynamic binding in
- java
- Abstract class and Interface difference.
- Downcasting with instanceof operator
- in javaPackage and Access Modifiers in
- java Encapsulation vs abstraction
- Object class
  Object Cloning with Cloneable
  interfaceJava Array object and
  properties.
  Call By Value and Call By Reference in
  javastrictfp keyword in java

String Handling

- String importance in
- javaImmutable String
- in java
- String Comparison with their types.
- String Concatenation with methods and
- operators.Substring in java
- Methods of String class
  StringBuffer class And StringBuilder class in
  JavaCreating Immutable class in Java
  toString method with object

Exception Handling

- Exception Handling in
- javatry and catch block
- in java Multiple catch
- block in javaNested try
- in java class
- finally block with try and catch
- block.throw keyword in java
  Exception Propagation with checked and unchecked
  exceptions.throws keyword with custom excpetions
  Exception Handling with Method Overriding
  in javaCustom Exception or user defined

exceptions.

Nested Classes

- Nested Class in java
- Member Inner class in
- java
- Annonymous or unnamed Inner
  class Local Inner class in method of
  java classstatic nested class in java
  Nested Interface java

Multitheading

Multithreading in java
- Life Cycle of a Thread class
- Creating Thread using different
- typesThread Schedular
- behaviour.
- Sleeping a thread with sleep method in
- java.Joining a thread with join method
- Thread Priority
- techniques.Daemon
- Thread in java Thread
- Pooling in java Thread
- Group in java
- ShutdownHook method in
- java multiple task by multiple

thread Garbage Collection

with GC Runnable class and

their methodsSynchronization

in java thread synchronized

method ,block static

synchronization in java

Deadlock situation in thread

Inter-thread Communication with wait notify and notify all

methodsInterrupting Thread with interrupt method.

Input and output

- FileOutputStream & FileInputStream API in java I/O
- ByteArrayOutputStream, SequenceInputStream,

BufferedOutputStream,
BufferedInputStream
- FileWriter & FileReader in java I/O
- CharArrayWriter with their methods.
- Input from keyboard by InputStreamReader, Console,
- Scanner.PrintStream, PrintWriter class
- Compressing and Uncompressing File (zip-unzip

files) Reading and Writing data simultaneously

using threadDataInputStream and

DataOutputStream class.

- ✔ Serialization & Deserialization with file
- ✔ Serialization with IS-A and Has-A inheritance
  relationtransient keyword with serialised object

Networking

- ✔ Socket Programming server and client
- ✔ APIURL class in java
- ✔ Displaying data of a web page using
- ✔ methodsInetAddress class and their
  methods DatagramSocket and
  DatagramPacket in javaTwo way
  communication (server-client)

Reflection API

✔ Reflection API in java

Class class and Object class in java Reflection.
✔ newInstance() ,forname(),.class methods for Determining the class
✔ objectsystem defined javap tool
✔ creating custom javap tool
Accessing private method from outside the class using method class.

Collection

✔ Collection Framework
✔ API ArrayList class in java
✔ LinkedList class java
✔ ListIterator interface in
✔ javaHashSet class in java
✔ LinkedHashSet class in
✔ javaTreeSet class in
collection PriorityQueue
class
Map interface in java
HashMap, LinkedHashMap, TreeMap, Hashtable class

✔ Comparable and Comparator interface in
javaProperties class with properties file

Java New Features 7/8

✔ Assertion, For-each loop, Varargs, Static Import in
✔ javaLambda expression and functional interface
✔ Autoboxing and Unboxing with wrapper
classAnnotation in java

Internationalization

✔ Internationalization in
✔ java ResourceBundle
class in java
I18N with Date,Time,Number,Currency

Regular Expression in java 8

- ✔ Regular Expression API
- ✔ Pattern and Matcher class in
- ✔ javaRegular Expression
  operators

ADVANCE JAVA

JDBC

1. JDBC Drivers Types In Java
2. Steps To Connect To The All Types Of Database.
3. Connectivity With Access Without And With DSN.
4. DriverManager Class In Jdbc.
5. Connection Interface In Jdbc.
6. Statement Interface In Jdbc.
7. ResultSet Interface Jdbc.
8. PreparedStatement In Jdbc.
9. ResultSetMetaData In Jdbc.
10. DatabaseMetaData In Jdbc
11. Storing Image In Jdbc.
12. Retrieving Image In Jdbc.
13. Storing File And Retrieving File Using Jdbc.
14. Stored Procedures And Functions In Plsql Using Java.
15. Transaction Management Tcl Commands.
16. Batch Processing Or Group Command Processing.
17. JDBC New Features In Java.
18. CRUD Mini Project.

INTRODUCTION OF WEBDESIGN

HTML/CSS/JAVASCRIPT Introduction(Hw)

BASICS OF SERVLET

1. Servlet In Java
2. Basics Of Web Pages
3. Servlet API Introduction
4. Servlet Interface In Servlet
5. GenericServlet In Servlet
6. HttpServlet In Servlet
7. Servlet Life Cycle In Java
8. Apache Tomcat Server
9. Steps To Create A Servlet In Tomcat And Connectivity

SERVLET REQUEST

1. ServletRequest Methods In Servlet
2. Registration Example With DB Etc...
3. Servlet Collaboration
4. RequestDispatcher Interface
5. SendRedirect Method
6. ServletConfig
7. ServletConfig Methods
8. ServletConfig Example
9. ServletContext

SERVLET COLLABORATION

1. How To Set, Get And Remove Example With Get Set Methods
2. Session Tracking
3. Cookies Class N Their Methods

4. Hidden Form Field Techniques

5. URL Rewriting In Servlet

6. HttpSession Servlet

7. Event And Listener

8. Event And Listener Examples

9. Filter

10. Filter In Java

11. Authentication Filter With Example

12. FilterConfig With Example

13. ServletInputStream And ServletOutputStream Class Example.

14. Project Development In Servlet.

JSP

1. Basics Of JSP

2. Life Cycle Of JSP Pages

3. JSP API In Java

4. JSP In Netbean

SCRIPTING ELEMENT

1. Scriptlet Tag In Jsp

2. Expression Tag In Jsp

3. Declaration Tag In Jsp

IMPLICIT OBJECT

1. Out Object

2. Request Object

3. Response Object

4. Config Object

5. Application Or Context Object

6. Session Object

7. PageContext Object

8. Page Object

9. Exception Object

DIRECTIVE

1. Page Directive With Their Attribute

2. Include Directive

3. Taglib Directive With Their Attributes

EXCEPTION HANDELING

1. Action Elements.

2. Jsp:Forward Tag

3. Jsp:Include Tag

4. Bean Class Examples

5. Jsp:UseBean Tag

6. Jsp:SetProperty & Jsp:GetProperty Tags

EXPRESSION LANGUAGE

1. Tables Of EL Operators.

JSP MVC

1. Small MVC Project Using Jsp

JSTL

1. Custom Tags

2. Custom Tag Or How To Create User Defined Tags.

3. Custom Tag API In Jsp.

4. Custom Tag Examples.

5. Attributes In Custom Tags.

6. Iteration Or Loops And If Else Statement Tag.

7. Custom URI In Jsp Tag.

INTRODUCTION OF HIBERANATE

1. Example

INTRODUCTION OF SPRING

1. Example

Aptitude syllabus :

Quantitative Aptitude

- ▶ 1 Problems Based on Ages.
- ▶ 2 Test on Divisibility.
- ▶ 3.Addition and Subtraction.
- ▶ 4.Multiplication.
- ▶ 5.Division.
- ▶ 6.Square root and Cube root.
- ▶ 7.BODMAS Rule.
- ▶ 8.Indices
- ▶ 9. Quadratic Equation.
- ▶ 10.Word problems (Simplification with Profit Questions).
- ▶ 11.HCF and LCM.
- ▶ 12.Average and Percentage .
- ▶ 13.Ratio
- ▶ 14.Time and work.
- ▶ 15. Pipes and Cistern
- ▶ 16.Time and Distance.
- ▶ 17. Boat and Stream
- ▶ 18.Problems on Train.
- ▶ 19. Profit and loss.

▸ 20. Probability

Reasoning Aptitude

▸ 1. Test on Alphabet

▸ 2. Coding-Decoding

▸ 3. Letter-Coding

▸ 4. Number Symbol Coding

▸ 5. Deciphering Message Code

▸ 6. Pairs in English Alphabet

▸ 7. Blood Relations

▸ 8. Number Series.

▸ 9. Direction and Distance.

▸ 10. Ordering Test

▸ 11. Sitting Arrangement

▸ 12. Puzzle

▸ 13. Input Output