

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B. Tech II - II sem (C.S.E)

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(15A05403) OBJECT ORIENTED PROGRAMMING USING THOUGH JAVA

Course Objectives:

- Study the syntax, semantics and features of Java Programming Language
- Learn the method of creating Multi-threaded programs and handle exceptions
- Learn Java features to create GUI applications & perform event handling

Course Outcomes:

- Ability to solve problems using object oriented approach and implement them using Java
- Ability to write Efficient programs with multitasking ability and handle exceptions
- Create user friendly interface

UNIT I:

The History and Evolution of Java:

Java's Lineage, The Creation of java, how java changed the internet, Java's magic: The byte code, Servlets: java on the server side, java Buzzwords, Evolution of java.

An Overview of Java:

Object Oriented Programming, Two control statements, Using blocks of codes, Lexical issues,
The java class Libraries.

Data Types, Arrays and Variables:

Primitive Types, Integers, Floating-point Types, Characters, Booleans, literals, variables, Type conversion and casting, Automatic Type Promotion in Expressions, Arrays, strings, Pointers.

UNIT II:

Operators:

Arithmetic Operators, The Bitwise Operators, Relational Operators, Boolean Logic operators, The assignment operator, The ? Operator, Operator Precedence, Using Parentheses.

Control Statements:

Java's selection Statements, Iteration statements, Jump Statements.

Introducing Classes:

Class Fundamentals, Declaring Objects, Assuming Object reference Variables, Introducing Methods, Constructors, The this Keyword, Garbage Collection, The Finalize() method, A

Stack class. Overloading Methods, Using Object as Parameter, Argument Passing, Returning Objects, Recursion, Introducing Access control, Understanding static, Introducing Nested and Inner classes, Exploring the String class, Using Command line Arguments, Varargs: variable-Length Arguments.

UNIT III:

Inheritance: Basics, Using super, creating a multi level hierarchy, when constructors are executed, method overriding, dynamic method dispatch, using abstract class, using final with inheritance, the object class.

Packages and Interfaces:

Packages, Access protection, Importing Packages, Interfaces, Default Interfaces, Default interface methods, Use static methods in an Interface, Final thoughts on Packages and interfaces.

Exception Handling:

Exception handling Fundamentals, Exception Types, Uncaught Exceptions, Using try and catch,

Multiple catch clauses, Nested try statements, throw, throws, finally, Java Built-in Exceptions, Creating your own exception subclasses, Chained Exceptions, Three Recently added Exceptions features, Using Exceptions.

UNIT IV:

Multithreaded Programming:

The java Thread Model, The main thread , Creating Thread, Creating Multiple Threads, Using isAlive() and join(), Thread Priorities, Synchronization, Interthread Communication, Suspending, resuming and stopping threads, Obtaining a thread state, Using Multithreading.

I/O, Applets, and Other Topics:

I/O basics, Reading Console input, Writing console Output, The PrintWriter class, Reading and writing files, Automatically closing a file, Applet fundamentals, enumerations type wrappers auto boxing annotations, Generics: The general form of a generics class, creating a generic method, generics interfaces.

UNIT V:

Introduction the AWT: Working with windows, graphics and Text:

AWT classes, window fundamentals, working with frame windows, creating a frame window in a an AWT Based applet, creating a window program, displaying information within a window, Graphics, working with color, setting the paint mode, working with fonts, managing text output using font metrics,.

Using AWT controls, Layout Mangers, and Menus:

AWT control fundamentals, Labels, using buttons, applying check boxes, check box group, choice controls, using lists, Managing scroll bars, using a Text field, Using a Text area, understanding layout managers, Menu bars and Menus, dialog boxes, file dialog, Overriding paint().

TEXT BOOKS:

1."Java The Complete Reference", Herbert Schildt, MC GRAW HILL Education, 9th Edition,2016.

REFERENCE BOOKS:

1. “Programming with Java” T.V.Suresh Kumar, B.Eswara Reddy, P.Raghavan Pearson Edition.
 2. “Java Fundamentals - A Comprehensive Introduction”, Herbert Schildt and Dale Skrien, Special Indian Edition, McGrawHill, 2013.
 3. “Java – How to Program”, Paul Deitel, Harvey Deitel, PHI.
 4. “Core Java”, NageswarRao, Wiley Publishers.
 5. “Thinking in Java”, Bruce Eckel, Pearson Education.
 6. “A Programmers Guide to Java SCJP”, Third Edition, Mughal, Rasmussen, Pearson.
- “Head First Java”, Kathy Sierra, Bert Bates, O’Reilly “SCJP – Sun Certified Programmer for Java Study guide” – Kathy Sierra, Bert Bates, McGrawHill

University Updates