

JAVA COURSE CONTENTS

7th Semester Electronics and Telecommunication Engineering

Introduction to HTML Concepts

- Form Elements, DHTML
- Nested Tables

Getting Started

- Describe the key features of Java Technology.
- Write, complete and run a simple Java Technology application.
- Describe the functions of Java Virtual Machine (JVM).
- NOTE: The terms “Java Virtual Machine” and “JVM” means a virtual machine for the Java Platform.
- Define Garbage Collection.
- List the three tasks performed by the Java Platform that handles code security.

Object Oriented Programming

- Define modeling concepts abstraction, Encapsulation and packages.
- Discuss why you can reuse Java Technology Application Code.
- Define class, member, attributer, method, constructor and package.

Use the access modifier private and public as Appropriate for the guidelines of encapsulation.

- Invoke a method on a particular object.
- Use the Java Technology Application Programming Interface (API) online documentation.

Identifiers, Keywords & Types

- Use comments in source program.
- Distinguish between valid and Invalid Identifiers.
- Recognize Java Technology keywords.
- List the eight private types.
- Define literal values for numeric and textual Types.
- Define the terms private variable and Reference Variable.
- Declare Variable of class type.
- Construct an object using new.



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S.S. Selokar
Authorized Signatory

Regd. Office: 15, Muskan – Varsha Apartment, Parekh Layout, Nelco Society Main Road, Trimurti Nagar, Nagpur-22

Website : www.ssinfotech.org Email ID: santosh@ssinfotech.org, ssitnagpur285@gmail.com

Phone: 0712-2226288, Mobile No. : 9146906649

- Describe default initialization.
- Describe significance of a reference Variable.
- State consequence of assigning variables of class types.

Expression & Flow Control

- Distinguish between Instance and Local Variables.
- Describe how to initialize instance variables.
- Identifiers and correct a possible reference before assignment compiler error.
- Recognize, Describe and Use Java Software Operators.
- Distinguish between legal and illegal Assignments of primitive types.
- Identify Boolean Expressions and their Requirements in control; constructs.
- Recognize assignment compatibility and require casts and fundamental types.
- Use if ,switch, for, while and do constructions And the labels forms of broke and continue as flow control structure in a program,

Arrays

- Declare and create arrays of primitive, class or array types.
- Explain why elements of and arrays are Initialized.
- Explain how to initialize the elements of an array.
- Determine the number of elements in an array. Create a multidimensional array.

Class Design

- Define inheritance, polymorphism, overloading and virtual method invocation.
- Use the access modifier protected And the default (package friendly)
- Describe the concept of constructor & method overloading.
- Describe the complete object constructor and Initialization operation.

Advance Class Features

- Create static variables, method, and Initializes.
- Create final classes, methods and Variables.
- Create and use enumerated types.
- Use the static import statement
- Create abstract classes and method.
- Create and use an interface.



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Exceptions

- Define exceptions
- Use try, catch and finally statements.
- Describe exception categories.
- Identify common exception.
- Develop programs to handle your own Exception.
- Use assertions.
- Distinguish appropriate and inappropriate uses of assertions.
- Enable assertions at runtime.

Text-Based Applications

- Write a program that uses command- Line argument and system properties.
- Write a program that reads from standard input.
- Describe the C-type formatted input and output.
- Write a program that can create, Read and write files.
- Describe the basic hierarchy of collections in Java 2 Software Development kit (Java 2 SDK).
- Write a program to iterate over a collection.
- Write a program that uses generic collections.

Building Java GUIs

- Describe the Abstract Windowing Toolkit (AWT) package and its components.
- Define the terms containers, components and layout managers and Describe how they work to get to build a GUI.
- Use layout managers.
- Use the frame and panel containers appropriate.
- Describe how complex layout with nested containers work.

GUI Event Handling

- Define event and event handling.
- Write code to handling events that occurs in a GUI.
- Describe the concepts of adapter Classes, including how and when to use them.
- Determine the user action that originated the event from the event.
- Identify the appropriate listener interface for a verity of event types.
- Create the appropriate event handle methods for the verity of event types.
- Understand the use of inner classes and anonymous classes in event handling.



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GUI- Based Applications

- Identify the key AWT components and the event that day trigger.
- Describe how to construct a menu and menu items in a Java GUI.
- Understand how to change a color and font of a component.

Threads

- Define a thread.
- Create Separated thread in a Java technology program, controlling the cone and data that are used by the thread.
- Control the execution of a thread and write platform independent codes with threads.
- Describe the difficulties that might arise when multiple thread share data.
- Use wait and notify the communicate between threads,
- Use synchronized to protect data from corruption.

Advance U/o Streams

- Describe the main features of the Java to Package.
- Construct node and processing Streams and use the appropriately.
- Distinguish readers and writers from Streams and select appropriately between them.

Networking

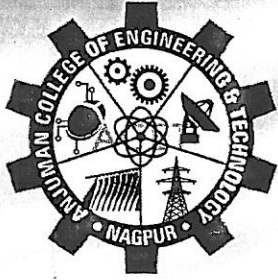
- Develop code to setup the Network Connection.
- Understand the Transmission Control Protocol/ Internet Protocol (TCP/IP).
- Use Server Socket and Socket Classes for implementation of TCP/IP clients and servers.



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*Mr./Ms. MEENAL MAHESH BHUTANI
has successfully completed training programme on Core Java
from 19th June to 29th September, 2017 at Anjuman College
of Engineering & Technology, Nagpur.*

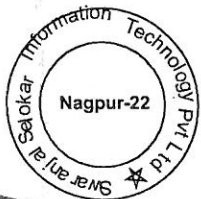
Mr. Santosh Selokar
Director
SSIT Pvt. Ltd. Nagpur

Dr. Sajid Anwar
Principal
ACET, Nagpur

Prof. M. Nasiruddin
HOD, ETC Deptt.
ACET, Nagpur

Prof. Khwaja Ramizuddin
Training Incharge
ACET, Nagpur

Prof. M. Amin Sultan
Training Co-ordinator
ACET, Nagpur



Regd. office : 15, Muskan-Varsha Apartment,
Parekh Layout, Nelco Society Main Road,
Trimurti Nagar, Nagpur-22