

## Industrial Training Program on Software Development

**BDPS**

TOTAL : 160 DAYS:

### Module 1-Total Days-20

#### **Computer Fundamentals and Computer Networks**

Overview of PC architecture  
Different bus standards (ISA, PCI, PCMCIA)  
Different Add-on Cards like memory, Graphics etc.  
Overview of RAID  
Operating system architecture  
Process Management  
Memory Management  
File system Management  
Introduction to Networking OS  
Basics of Communication Systems, Issues in Computer Networking  
Transmission Media  
OSI ,TCP/IP Models  
Local Area Networks  
Wide Area Networks  
Networking Protocols  
IP addressing & Routing  
Understanding & recognizing TCP, IP, UDP, ICMP, Ethernet Packets  
Internetworking Devices (Hub, Switch, Router etc.)  
Wireless Networks

#### **System Administration**

Windows Operating System  
Introduction to Windows Operating System  
Introduction to the Administrative Tasks and Tools  
Installation and Configuration of the Windows Operating System  
Implementing and Managing the Windows Network Infrastructure  
Disk and File System Management  
Planning, Implementing, and Maintaining a Active Directory Infrastructure  
Configuring the IIS Web Server, Mail Server  
Performance Tuning  
Troubleshooting and Maintenance  
Linux Operating System  
Systems concepts  
Boot Processes on Linux and Solaris  
Installation techniques for different distributions of GNU/Linux  
Initialization and Shutdown concepts  
Linux user administration  
Configurations of APACHE, SAMBA, NFS, DNS  
FTP services and NIS Configuration  
File Systems, Disk Management, print services  
X server configuration  
Performance Tuning

**Module 2-Total Days-30****Introduction to Java:**

History of Java  
Need for Java  
Java versions  
Features/Advantages of Java  
JVM Architecture  
Packages in Java

**Programming in Java:**

Programming Structure  
Variables/Constants  
Data types  
Various operators  
Access Specifiers & Modifiers  
Decision Making & Branching  
Decision Making & Looping

**Methods in Java:**

Introduction to Methods  
Argument passing mechanism  
Pass by value  
Pass by reference  
Arrays  
Wrapper Classes  
Manipulating strings

**OOPS Principle:**

Basic principles of OOPS  
Class & Object  
Access modifiers  
Constructors & destructors  
Static members

**Inheritance & Polymorphism:**

Inheritance & polymorphism  
Overloading methods  
Hiding methods  
Abstract class  
Abstract methods  
Multiple inheritances  
Interfaces  
Method Overriding

**Packages & Exception Handling**

Packages in Java  
Importing packages  
Creating User defined packages  
Exception Handling  
Built-in Exceptions  
User defined Exceptions

**Multithreading in Java**

Multithreading Concept  
Implementing multithreading in Java  
Thread Life Cycle  
Thread Priorities  
Thread Synchronization

**Module 3-Total Days-30****Windows Programming:**

Introduction to GUI Programming  
Introduction to Frames  
Various component classes  
Creating Frames & Components in Java  
Invoking Properties & methods of components  
Overview of awt components

**Swings Programming**

Introduction to Swings  
Layout Managers  
Swings Vs AWT in Java  
GUI Programming using Swings

**I/O Programming**

I/O Introduction  
Byte Streams & Character Streams  
Reading & Writing data  
Object Serialization & Deserialization

**Socket Programming**

Client Server Architecture  
Protocols Overview  
Client Server communication using TCP/IP

**Collections Framework**

Introduction to java.util package  
Various classes & interfaces  
Vector, Stack & Hashtable classes

**JDBC Programming**

JDBC API  
JDBC Architecture  
Classes & Interfaces of JDBC API  
Creating JDBC application  
Managing database transactions

**Advanced JDBC Programming**

Creating applications using PreparedStatement object  
Creating and calling stored procedures in JDBC  
Using Metadata in JDBC  
ResultSetMetaData & DatabaseMetaData interfaces

**Module 4-Total Days-25**

SQL-DDL,DML,DCL

**Using Select Statement**

Use the SELECT statement with logical operators  
Use wildcards  
Use the IS NULL and IS NOT NULL keywords

Use the ORDER BY clause  
Use the TOP keyword  
Use the DISTINCT keyword  
Use aggregate functions in queries  
Group result sets  
Use the COMPUTE and COMPUTE BY clause

**Using functions**

String functions  
Mathematical functions  
Datetime functions

**Using JOINS**

Inner Join  
Outer Join  
Self Join  
Equi Join  
Natural Join  
Cross Join

**Using Subqueries**

Creating subqueries  
Use subqueries with the IN clause  
Use subqueries with the EXISTS clause  
Use nested subqueries  
Use correlated subqueries

**Databases**

Creating database  
Viewing database  
Deleting database  
Renaming database

**Database Tables**

Create tables  
Insert rows into tables  
Delete tables  
Altering tables  
Create user-defined datatype  
List various types of data integrity  
Add the following constraints to tables:  
PRIMARY KEY  
UNIQUE  
FOREIGN KEY  
CHECK  
DEFAULT

**DML Statement**

Maintain data in a table by using  
INSERT statement  
UPDATE statement  
DELETE statement  
Truncate a table

**Implementing Views & Batches**

Create, alter, drop, and rename views  
Update data using views  
Declare variables  
Print messages

Use comments  
Use conditional statements  
Use the iteration statements

**Implementing Stored Procedures**

Create a stored procedure  
Execute a stored procedure  
Pass parameters to a stored procedure  
Modify a stored procedure  
Drop a stored procedure

**Module 5-Total Days-30****Overview of HTML**

HTML Introduction  
HTML Elements & Attributes  
Creating hyperlinks  
Creating Lists & Tables  
HTML Forms & Controls

**J2EE introduction**

J2EE Concept  
J2EE Architecture  
Application Server  
Web & EJB Server  
Configuring J2EE data source

**Servlet Programming**

Introduction to Servlets  
HttpServlets & GenericServlets  
Servlet mapping & configuration  
Inter-Servlet communication  
Security in Web Application  
Session Management

**JSP Programming**

Introduction to JSP  
JSP directives  
JSP Standard actions

**Module 6-Total Days-15**

Project (Web based)  
Web based Project using java and Mysql