

ST. ANN'S COLLEGE OF ENGINEERING & TECHNOLOGY: CHIRALA
DEPARTMENT OF COMPUTERSCIENCE & ENGINEERING
LESSON PLAN

Subject: HADOOP AND BIG DATA

Name: J PETER JOHN PAUL

No. of Lectures per week: 4+1* (Tutorial)

Academic Year: 2017-18

Year & Sem/Section: IV-I SEM 'A'

S.No.	Sub Topic Names	No. of Classes required
I	Data structures in Java: Linked List, Stacks, Queues, Sets, Maps; Generics: Generic classes and Type parameters, Implementing Generic Types, Generic Methods, Wrapper Classes, Concept of Serialization	8
II	Working with Big Data: Google File System, Hadoop Distributed File System (HDFS) – Building blocks of Hadoop (Namenode, Datanode, Secondary Namenode, JobTracker, TaskTracker), Introducing and Configuring Hadoop cluster (Local, Pseudo-distributed mode, Fully Distributed mode), Configuring XML files.	8
III	Writing MapReduce Programs: A Weather Dataset, Understanding Hadoop API for MapReduce Framework (Old and New), Basic programs of Hadoop MapReduce: Driver code, Mapper code, Reducer code, RecordReader, Combiner, Partitioner	11
IV	Hadoop I/O: The Writable Interface, WritableComparable and comparators, Writable Classes: Writable wrappers for Java primitives, Text, BytesWritable, NullWritable, ObjectWritable and GenericWritable, Writable collections, Implementing a Custom Writable: Implementing a RawComparator for speed, Custom comparators	9
V	Pig: Hadoop Programming Made Easier Admiring the Pig Architecture, Going with the Pig Latin Application Flow, Working through the ABCs of Pig Latin, Evaluating Local and Distributed Modes of Running Pig Scripts, Checking out the Pig Script Interfaces, Scripting with Pig Latin	6
VI	Applying Structure to Hadoop Data with Hive: Saying Hello to Hive, Seeing How the Hive is Put Together, Getting Started with Apache Hive, Examining the Hive Clients, Working with Hive Data Types, Creating and Managing Databases and Tables, Seeing How the Hive Data Manipulation Language Works, Querying and Analyzing Data	6
Total No. of hours		48

Text Books

1	Big Java 4th Edition, Cay Horstmann, Wiley John Wiley & Sons, INC
2	Hadoop: The Definitive Guide by Tom White, 3rd Edition, O'reilly
3	Hadoop in Action by Chuck Lam, MANNING Publ.
4	Hadoop for Dummies by Dirk deRoos, Paul C.Zikopoulos, Roman B.Melnyk, Bruce Brown, Rafael Coss

References

1	Hadoop in Practice by Alex Holmes, MANNING Publ
2	Hadoop MapReduce Cookbook, Srinath Perera, Thilina Gunarathne

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