



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad – 500043

COMPUTER SCIENCE AND ENGINEERING

List of Laboratory Experiments

BIG DATA AND BUSINESS ANALYTICS LABORATORY								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
ACSB18	Core	L	T	P	C	CIA	SEE	Total
		0	0	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 36			Total Classes:36			
Branch: CSE	Semester: VII	Academic Year: 2021-22			Regulation: R18			
Course overview:								
This course aims to learn working with distribute environment (virtual) in VMWare and Hadoop. It includes the demonstrations on working with Hadoop distributed file system (HDFS), MapReduce programming, Pig Latin and Hive.								
Course objectives:								
The students will try to learn:								
<ol style="list-style-type: none"> 1. Virtual environment setup to perform Big data analytics 2. Working with Hadoop eco system. 3. The MapReduce programing in Hadoop. 4. The concepts of PIG and HIVE in Hadoop eco system. 								
Course outcomes:								
After successful completion of the course, students will be able to:								
CO1 Demonstrate distributed environment and its ecosystem with the help of VMWare and Linux commands.								
CO2 Make use of Hadoop distributed file management modes for handling big data in business analytics.								
CO3 Analyze Big Data using Map-reduce programming in Hadoop framework for memory management and faulty recovery.								
CO4 Implement the Pig Latin scripts in two different modes to perform a particular operation on the data that exists in the HDFS								
CO5 Apply Hive commands for reading, writing and managing large datasets in HDFS.								
WEEK NO	EXPERIMENT NAME							CO
WEEK – I	INSTALL VMWARE							CO1
	Installation of VMWare to setup the Hadoop environment and its ecosystems.							
WEEK – II	HADOOP MODES							CO2
	Perform setting up and Installing Hadoop in its three operating modes. i. Standalone. ii. Pseudo distributed. iii. Fully distributed. Use web based tools to monitor your Hadoop setup.							
WEEK – III	USING LINUX OPERATING SYSTEM							CO1
	Implementing the basic commands of LINUX Operating System – File/Directory creation, deletion, update operations.							
WEEK – IV	FILE MANAGEMENT IN HADOOP							CO1, CO2
	Implement the following file management tasks in Hadoop: i. Adding files and directories ii. Retrieving files iii. Deleting files Hint: A typical Hadoop workflow creates data files (such as log files) elsewhere and copies them into HDFS using one of the above command line utilities.							
WEEK – V	MAPREDUCE PROGRAM 1							CO3
	Run a basic word count Map Reduce program to understand Map Reduce Paradigm.							
WEEK – VI	MAPREDUCE PROGRAM 2							CO3
	Write a Map Reduce program that mines weather data. Hint: Weather sensors collecting data every hour at many locations across							

	the globe gather a large volume of log data, which is a good candidate for analysis with Map Reduce, since it is semi structured and record-oriented.	
WEEK – VII	MAPREDUCE PROGRAM 3	CO3
	Implement matrix multiplication with Hadoop Map Reduce.	
WEEK – VIII	PIG LATIN LANGUAGE - PIG	CO4
	Installation of PIG.	
WEEK - IX	PIG COMMANDS	CO4
	Write Pig Latin scripts sort, group, join, project, and filter your data.	
WEEK - X	PIG LATIN MODES, PROGRAMS	CO4
	Run the Pig Latin Scripts to find Word Count	
	Run the Pig Latin Scripts to find a max temp for each and every year.	
WEEK – XI	HIVE	CO5
	Installation of HIVE.	
WEEK – XII	HIVE OPERATIONS	CO5
	Use Hive to create, alter, and drop databases, tables, views, functions, and indexes.	