Department: *Information Science and Engineering*	***Course Type: Laboratory***
Course Title*: Big Data Lab*	***Course Code:****18ISL68*
L-T-P:*0-2-2*	***Credits:****2*
Total Contact Hours: 26 *Hrs*	***Duration of SEE:****3 Hrs*
SEE Marks*: 50*	***CIE Marks:*** *50*

Course Outcomes:

Students will be able to:

Cos	Course Outcome Description	Blooms Level
1	Use MongoDB commands to implement given application.	L3
2	Apply commands to perform file operations on HDFS	L3
3	Develop map/reduce programs to perform basic operations on the given data set	L3
4	Use HiveQL to filter and aggregate the given data	L3

Teaching Methodology:

- Black Board Teaching / Power Point Presentation
- Laboratory experiments
- Hands On session
- Video Lecturing

Assessment Methods:

- Rubrics for evaluating laboratory experiments for 30 marks
- LA1 miniproject on Mongodb for 10 Marks
- LA2 Programming assignment on Hadoop for 10Marks (Rubrics Based Evaluation)
- Final examination of 50 Marks will be conducted.

Course Outcome to Programme Outcome Mapping:

Cos	PO1	PO2	PO 3	PO4	PO 5	PO6	PO 7	PO8	PO 9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	3	1	1				2	2	2			3
CO2	3	2	3	1	1				2	2				3
CO3	3	2	3	1	1				2	2	1			3
CO4	3	2	3	1	1				2	2				3
18ISL68	3	2	3	1	1				2	2	1			3

COURSE CONTENT

Execrcise-1: Mongo DB Use The mongo dB database to Exercise NOSQL Queries to Demonstrate the following with an USECASE 1) Create database 2) Basic CRUD operations 3) Aggregate functions 4) Pipeline 5) MapReduce	**CO1**
Execrcise-2: Map/Reduce Job Submission Start by reviewing HDFS. It found that the composition of HDFS is similar to your local Linux file system. Use the ***hadoopfs*** command while interacting with HDFS. 1. Review the commands available for the Hadoop Distributed File System: 2. Copy file foo.txt from local disk to the user's directory in HDFS 3. Get a directory listing of the user's home directory in HDFS 4. Get a directory listing of the HDFS root directory 5. Display the contents of the HDFS file user/fred/bar.txt 6. Move that file to the local disk, named as baz.txt 7. Create a directory called input under the user's home directory 8. Delete the directory input old and all its contents 9. Verify the copy by listing the directory contents in HDFS:	**CO2**
Execrcise-3: Map Reduce (Programs) Use the Hadoop framework to write a custom MapReduce program to perform word count operation on a custom data set .	**CO3**
Execrcise-4: Map Reduce (Programs) Use the Hadoop framework to write a MapReduce program to read a .csv file into a single node Hadoop cluster containing following fields Sl. No. CARD name UserName Amount withdrawn Implement the following, 1. Count the Number of transactions done by each user 2. Find the total amount of money transacted by each user	**CO3**
Execrcise-5: Extract facts using Hive : 1)Create and Drop Databases 2)Create, Alter , Drop Table 3)Built-in Operators 4)Built-in function 5)Views and Index 6)HIVEQL(select where , Select Order by, Select group by , Select Joins)	**CO4**