

**Department of Artificial Intelligence & Data Science****Vision of the Department***To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.***Mission of the Department***To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.***Session 2025-2026****Vision:** Dream of where you want.**Mission:** Means to achieve Vision**Program Educational Objectives of the program (PEO):** (broad statements that describe the professional and career accomplishments)

PEO1	Preparation	P: Preparation	Pep-CL abbreviation pronounce as Pep-si-IL easy to recall
PEO2	Core Competence	E: Environment (Learning Environment)	
PEO3	Breadth	P: Professionalism	
PEO4	Professionalism	C: Core Competence	
PEO5	Learning Environment	L: Breadth (Learning in diverse areas)	

Program Outcomes (PO): (statements that describe what a student should be able to do and know by the end of a program)**Keywords of POs:**

Engineering knowledge, Problem analysis, Design/development of solutions, Conduct Investigations of Complex Problems, Engineering Tool Usage, The Engineer and The World, Ethics, Individual and Collaborative Team work, Communication, Project Management and Finance, Life-Long Learning

PSO Keywords: Cutting edge technologies, Research

“I am an engineer, and I know how to apply engineering knowledge to investigate, analyse and design solutions to complex problems using tools for entire world following all ethics in a collaborative way with proper management skills throughout my life.” to contribute to the development of cutting-edge technologies and Research.

Integrity: I will adhere to the Laboratory Code of Conduct and ethics in its entirety.**Name and Signature of Student and Date**

(Signature and Date in Handwritten)



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Session	2025-26 (ODD)	Course Name	Big Data Hadoop
Semester	7 AIDS	Course Code	22ADS703
Roll No	21	Name of Student	Sanskriti. Paunikar

Practical Number	2
Course Outcome	CO1:- Implement and analyze various deep learning algorithms such as linear regression, neural networks and CNN using modern tools and frameworks CO2:- Develop and evaluate deep learning models for sequence data, images processing, and unsupervised learning using appropriate optimization techniques and validation strategies
Aim	Implementation of File management operations in Hadoop
Problem Definition	
Theory (100 words)	Hadoop's file management revolves around HDFS, a distributed file system storing large data by splitting files into blocks across multiple nodes with replication for fault tolerance. Key operations include uploading (put), downloading (get), listing (ls), reading (cat), deleting (rm), and creating directories (mkdir). HDFS supports Unix-like permissions and ownership management (chmod, chown). Data is stored redundantly to ensure reliability, with a Name Node managing metadata and DataNodes storing actual data. Hadoop also offers APIs for programmatic file management. These operations enable efficient, scalable handling of big data in a distributed environment.
Procedure and Execution (100 Words)	<ol style="list-style-type: none">1. Creating Directories.2. Creating files3. Copying files to HDFS.4. Viewing file contents.5. Listing Directories.6. Deleting files and Directories.



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Code:

Creating Directories: mkdir bdh

Creating files: touch [first.sh](#) and touch [second.sh](#)

Copying content of one file to another: cp first.txt second.txt

Listing Directories: ls

Deleting files and directories: rm first.txt

Output:

```
hadoop@aiids-Veriton-M200-P500:~$ ls
bdh  Desktop  Documents  first.sh  hadoop-3.4.1.tar.gz  Pictures  second.sh  snap  Videos  welcome.txt
hadoop@aiids-Veriton-M200-P500:~$
```

```
hadoop@aiids-Veriton-M200-P500:~$ mkdir bdh
hadoop@aiids-Veriton-M200-P500:~$ touch first.sh
hadoop@aiids-Veriton-M200-P500:~$ vi first.txt
hadoop@aiids-Veriton-M200-P500:~$ vi first.txt
hadoop@aiids-Veriton-M200-P500:~$ touch second.sh
hadoop@aiids-Veriton-M200-P500:~$ vi second.txt
```

```
Shreya
AIDS-24
BDH-PRACTICAL-2
```

```
Rutuja
```

```
bdh  Desktop  Documents  first.sh  hadoop-3.4.1.tar.gz  Pictures  second.sh  snap  Videos  welcome.txt
hadoop@aiids-Veriton-M200-P500:~$ vi first.txt
hadoop@aiids-Veriton-M200-P500:~$ vi second.txt
hadoop@aiids-Veriton-M200-P500:~$ vi second.txt
hadoop@aiids-Veriton-M200-P500:~$ cp first.txt second.txt
```

```
Shreya
AIDS-24
BDH-PRACTICAL-2
```

```
"second.txt" 4 lines, 32 bytes
```

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	<pre>hadoop@bids-Veriton-M200-P500:~\$ mkdir mkdir: missing operand Try 'mkdir --help' for more information. hadoop@bids-Veriton-M200-P500:~\$ pwd /home/hadoop hadoop@bids-Veriton-M200-P500:~\$ mkdir mkdir: missing operand Try 'mkdir --help' for more information. hadoop@bids-Veriton-M200-P500:~\$ mkdir bdh hadoop@bids-Veriton-M200-P500:~\$ touch first.sh hadoop@bids-Veriton-M200-P500:~\$ vi first.txt hadoop@bids-Veriton-M200-P500:~\$ vi first.txt hadoop@bids-Veriton-M200-P500:~\$ touch second.sh hadoop@bids-Veriton-M200-P500:~\$ vi second.txt hadoop@bids-Veriton-M200-P500:~\$ cp first.txt second.txt Command 'co' not found, but can be installed with: apt install rcs Please ask your administrator. hadoop@bids-Veriton-M200-P500:~\$ cp first.txt second.txt hadoop@bids-Veriton-M200-P500:~\$ vi second.txt hadoop@bids-Veriton-M200-P500:~\$ ls bdh Desktop Downloads first.sh hadoop-3.4.1.tar.gz Pictures second.sh snap Videos welcome.txt Desktop Downloads first.txt Music Public second.txt Templates welcome hadoop@bids-Veriton-M200-P500:~\$ vi first.txt hadoop@bids-Veriton-M200-P500:~\$ vi second.txt hadoop@bids-Veriton-M200-P500:~\$ cp first.txt second.txt hadoop@bids-Veriton-M200-P500:~\$ vi second.txt hadoop@bids-Veriton-M200-P500:~\$ rm first.txt hadoop@bids-Veriton-M200-P500:~\$ vi first.txt hadoop@bids-Veriton-M200-P500:~\$</pre>
Output Analysis	New directories and files are made. Contents in the file are edited using vi editor. Also contents of first file are copied in second file using cp command. After copying the contents of first file to second file, first file is deleted using rm command.
Link of student Github profile where lab assignment has been uploaded	https://github.com/sanskriti-1234/BDH.git
Conclusion	From the analysis of file management operations in Hadoop, it is evident that HDFS provides a reliable and efficient way to handle files in a distributed environment. The outputs of commands such as -put, -ls, -cat, -cp, -rm, and -du clearly demonstrate how files can be uploaded, verified, read, copied, deleted, and monitored within the system. Each operation is reflected through metadata details like permissions, replication, size, ownership, and timestamps, ensuring transparency and correctness. Overall, the experiment proves that Hadoop offers a fault-tolerant, scalable, and user-friendly file system for managing large datasets.



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