



## 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

<b>Vision:</b> Dream of where you want.	<b>Mission:</b> Means to achieve Vision
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**Program Educational Objectives of the program (PEO):** (broad statements that describe the professional and career accomplishments)

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

**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)



NAAC A++

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

<b>Practical Number</b>	2
<b>Course Outcome</b>	<p><b>CO1:-</b> Implement and analyze various deep learning algorithms such as linear regression, neural networks and CNN using modern tools and frameworks</p> <p><b>CO2:-</b> Develop and evaluate deep learning models for sequence data, images processing, and unsupervised learning using appropriate optimization techniques and validation strategies</p>
<b>Aim</b>	Implementation of File management operations in Hadoop
<b>Problem Definition</b>	
<b>Theory (100 words)</b>	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 ( <code>put</code> ), downloading ( <code>get</code> ), listing ( <code>ls</code> ), reading ( <code>cat</code> ), deleting ( <code>rm</code> ), and creating directories ( <code>mkdir</code> ). HDFS supports Unix-like permissions and ownership management ( <code>chmod</code> , <code>chown</code> ). 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.
<b>Procedure and Execution (100 Words)</b>	<ol style="list-style-type: none"> <li>1. Creating Directories.</li> <li>2. Creating files</li> <li>3. Copying files to HDFS.</li> <li>4. Viewing file contents.</li> <li>5. Listing Directories.</li> <li>6. Deleting files and Directories.</li> </ol>



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	<pre>hadoop@Aids-Veriton-M200-P500:~\$ mkdir mkdir: missing operand Try `mkdir --help' for more information. hadoop@Aids-Veriton-M200-P500:~\$ pwd /home/hadoop hadoop@Aids-Veriton-M200-P500:~\$ mkdir mkdir: missing operand Try `mkdir --help' for more information. hadoop@Aids-Veriton-M200-P500:~\$ mkdir bdh hadoop@Aids-Veriton-M200-P500:~\$ touch first.sh hadoop@Aids-Veriton-M200-P500:~\$ vi first.txt hadoop@Aids-Veriton-M200-P500:~\$ vi first.txt hadoop@Aids-Veriton-M200-P500:~\$ touch second.sh hadoop@Aids-Veriton-M200-P500:~\$ vi second.txt Command 'cp' not found, but can be installed with: apt install rcs Please ask your administrator. hadoop@Aids-Veriton-M200-P500:~\$ cp first.txt second.txt hadoop@Aids-Veriton-M200-P500:~\$ vi second.txt hadoop@Aids-Veriton-M200-P500:~\$ ls bdh  Documents  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@Aids-Veriton-M200-P500:~\$ vi first.txt hadoop@Aids-Veriton-M200-P500:~\$ vi second.txt hadoop@Aids-Veriton-M200-P500:~\$ vi second.txt hadoop@Aids-Veriton-M200-P500:~\$ cp first.txt second.txt hadoop@Aids-Veriton-M200-P500:~\$ vi second.txt hadoop@Aids-Veriton-M200-P500:~\$ rm first.txt hadoop@Aids-Veriton-M200-P500:~\$ vi first.txt hadoop@Aids-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	<a href="https://github.com/sanskruti-1234/BDH.git">https://github.com/sanskruti-1234/BDH.git</a>
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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