Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
NAAC A++
Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu

Department of Computer Technology

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: To harness the power of artificial intelligence and data science to solve real-world problems and enhance human potential.	**Mission:** To acquire skills through coursework, projects, and internships, while actively engaging in research and collaboration with peers to innovate and apply AI solutions.

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-lL 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.

Prerana Bijekar   30 October 2025
Name and Signature of Student and Date
(Signature and Date in Handwritten)

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Session	2025-26 (ODD)	Course Name	BDH Lab
Semester	7	Course Code	22ADS704
Roll No	11	Name of Student	Prerana Bijekar

Practical Number	8
Course Outcome	**CO1:** Understand big data analytics and its business applications. **CO2:** Analyze the HADOOP and Map Reduce technologies associated with big data analytics. **CO3:** Apply Big Data Analytics Using Pig and Hive.
Aim	Perform Pig Operations: Load & Store Data, Aggregation Operations, Filtering Data and Joining Datasets.
Theory (100 words)	Apache Pig is a data flow scripting platform built on Hadoop that uses Pig Latin for analyzing large datasets. It simplifies complex MapReduce operations with simple commands for loading, transforming, and storing data. Pig allows users to load data from HDFS or local systems, apply filters, perform aggregation functions (like COUNT, SUM, AVG), and join multiple datasets. These operations are internally converted into MapReduce jobs, making Pig an efficient tool for scalable data analysis while maintaining simplicity and flexibility in handling structured and semi-structured data.
Procedure and Execution (100 Words)	Steps of implementation: • Start Hadoop and Pig. • Load data: A = LOAD '/input/data.csv' USING PigStorage(',') AS (id:int, name:chararray, marks:int); • Filter data: B = FILTER A BY marks > 50; • Perform aggregation: C = GROUP B BY name; D = FOREACH C GENERATE group, COUNT(B); • Join datasets: E = JOIN A BY id, Other BY id; • Store output: STORE D INTO '/output/result' USING PigStorage(',');

	Code:
	
	 ```grunt> a = load 'retail_stage1.order_items' using org.apache.hive.hcatalog.pig.HCatLoader();```
	
	 ```grunt> b = group a by order_item_order_id```
	
	 ```grunt> c = foreach b generate group, AVG(a.order_item_product_price)```

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```
grunt> dump c;
```

```
hive> select order_item_order_id, AVG(order_item_product_price)
    > from order_items
    > group by order_item_order_id;
Query ID = cloudera_20160913214646_7a4abeba-4526-4028-8da3-97c5f5e10575
Total jobs = 1
Launching Job 1 out of 1
Number of reduce tasks not specified. Estimated from input data size: 1
In order to change the average load for a reducer (in bytes):
  set hive.exec.reducers.bytes.per.reducer=<number>
In order to limit the maximum number of reducers:
  set hive.exec.reducers.max=<number>
In order to set a constant number of reducers:
  set mapreduce.job.reduces=<number>
```

```
grunt> a = '/user/cloudera/department' using PigStorage(',');
2016-08-29 21:36:27,468 [main] ERROR org.apache.pig.tools.grunt.Grunt
rror, unexpected symbol at or near 'a'
Details at logfile: /home/cloudera/pig_1472530648111.log
```

```
grunt> a = load '/user/cloudera/department' using PigStorage(',');
2016-08-29 21:36:39,833 [main] WARN  org.apache.pig.PigServer - Enc
s).
```

```
grunt> c = filter a by $0 > 4;
```

Output:

```
(68852,50.0)
(68855,199.99000549316406)
(68856,129.99000549316406)
(68858,481.99199905395506)
(68859,699.9899965922037)
(68860,64.98499965667725)
(68861,103.32666905721028)
(68862,331.98400497436523)
(68863,101.9900032043457)
(68865,399.9800109863281)
(68866,119.99000358581543)
(68868,114.9900016784668)
(68869,409.98999786376953)
(68870,59.9900016784668)
(68871,174.99000549316406)
(68873,131.9880027770996)
(68875,1049.9899940490723)
(68878,154.98750591278076)
(68879,419.99000040690106)
(68880,79.860008239746)
(68881,129.99000549316406)
(68882,54.9950008392334)
(68883,1024.9949951171875)
```
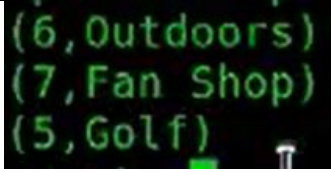
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	(6,Outdoors) (7,Fan Shop) (5,Golf)
Output Analysis	The Pig script runs successfully and outputs processed data stored in HDFS. Results show filtered records, aggregated values, and joined datasets. Each operation generates a corresponding MapReduce job, confirming correct data loading, filtering, and transformation within the Hadoop environment.
Github Link	https://github.com/Prerana-Bijekar/BDH
Conclusion	Performing Pig operations like load, store, aggregation, filtering, and joining demonstrates how Pig simplifies big data processing. These operations efficiently transform and analyze datasets through concise Pig Latin scripts, leveraging Hadoop's distributed framework for large-scale data computation.
Plag Report (Similarity index < 12%)	SmallSEOTools **Plagiarism Scan Report By SmallSEOTools** Report Generated on: Oct 31,2024 — 8.4% Plagiarized Content — 5.3% Exact Plagiarized — 3.1% Partial Plagiarized — 91.6% Unique Content — Total Words: 388 Total Characters: 453 Plagiarized Sentences: 13 Unique Sentences: 113 (91.6%)
Date	30 October 2025