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	9
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	Analyzing Various Data Visualization Methods Using R
Theory (100 words)	R is a powerful programming language widely used for statistical computing and data visualization. It provides rich libraries like ggplot2, lattice, and plotly for creating various types of visualizations, including bar charts, histograms, scatter plots, box plots, and line graphs. Data visualization in R helps interpret complex datasets through graphical representations, revealing trends, patterns, and relationships. By analyzing different visualization methods, users can choose the most appropriate plots to effectively communicate insights and make data-driven decisions in research, analytics, and business intelligence.
Procedure and Execution (100 Words)	Steps of implementation: • Install and open R/RStudio. • Import dataset using read.csv() or similar functions. • Use base R plots like plot(), hist(), barplot(). • Install and load ggplot2 package. • Create advanced plots: ggplot(data) + geom_bar(), geom_point(), geom_boxplot(). • Customize plots with titles, labels, and colors. • Optionally use interactive libraries like plotly for dynamic visualizations.
	Code: library(tidyverse) library(palmerpenguins) # Bar Plot penguins |> ggplot(aes(x = species)) + geom_bar(aes(fill = species)) # Scatter Plot penguins |> ggplot(aes(x = body_mass_g, y = flipper_length_mm)) + geom_point()

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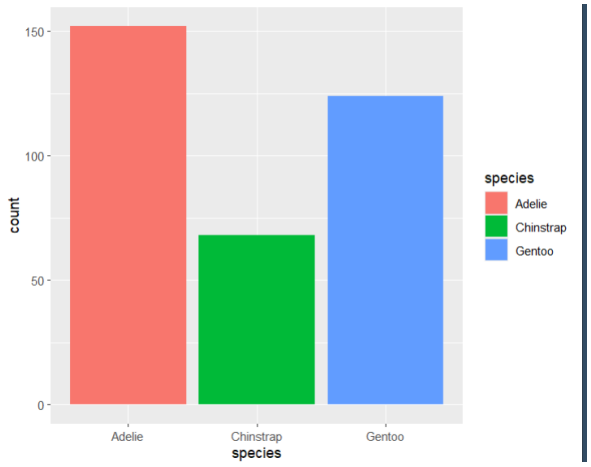
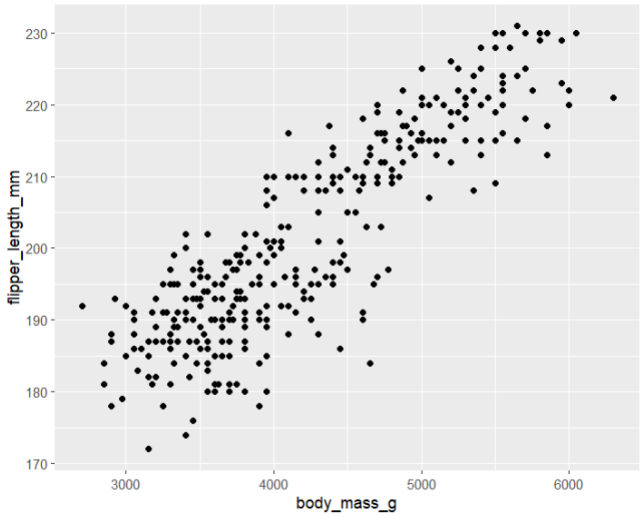
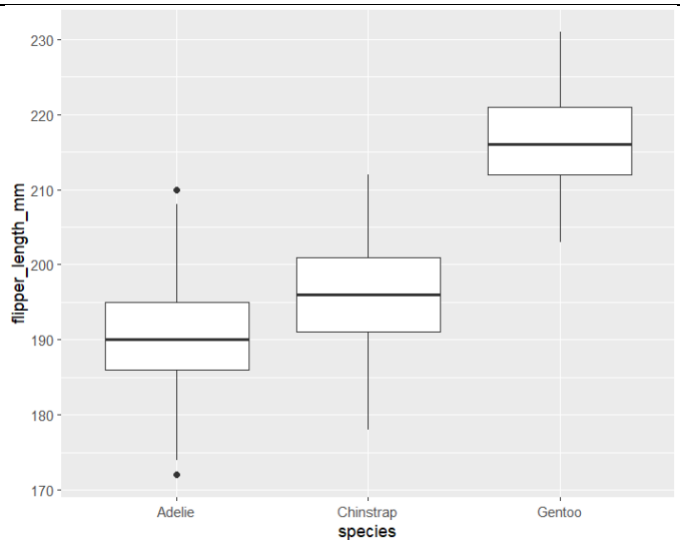
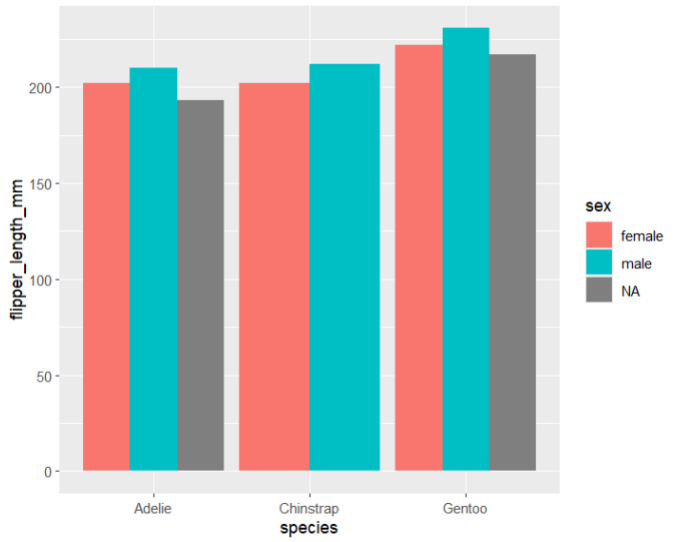
```
# Box Plot
penguins |> ggplot(aes(x = species, y = flipper_length_mm)) +
geom_boxplot()
# Line Plot
penguins |> ggplot(aes(x = body_mass_g, y = flipper_length_mm)) +
geom_line()
# Stacked Bar Plot
ggplot(penguins, aes(fill=sex, y=flipper_length_mm, x=species)) +
geom_bar(position="dodge", stat="identity")
# Histogram Plot
penguins |> ggplot(aes(x = body_mass_g)) + geom_histogram()
```

Output:





	 
Output Analysis	Various graphs such as bar charts, scatter plots, and histograms are successfully generated, visually representing data trends and relationships. Each plot highlights different aspects of the dataset, making analysis clearer and more insightful. The output confirms R's effectiveness in producing high-quality, customizable visualizations.
Github Link	https://github.com/Prerana-Bijekar/BDH
Conclusion	Analyzing data visualization methods in R demonstrates how visual tools enhance understanding of complex datasets. Using libraries like ggplot2 and plotly, R provides flexibility and precision in presenting data, enabling clearer insights and better decision-making through visual analytics.

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Date	30 October 2025