C.V. RAMAN GLOBAL UNIVERSITY
BHUBANESWAR, ODISHA, INDIA

EXPERIENTIAL LEARNING OF DATA STRUCTURES

GROUP-2 SUBGROUP-1

3RD SEMESTER

TOPIC- INSERTION SORT WITH DATA STRUCTURES: ARRAY, LINKED LIST, DOUBLY LINKED LIST, ETC. WRITE A COMPREHENSIVE COMPARISON WITH VARIOUS KINDS OF INPUT LIKE POSITIVE INTEGERS, SIGNED INTEGERS, FLOATING POINT NUMBERS, CHARACTERS, STRINGS, ETC.

UNDER THE SUPERVISION OF

DR. DILIP ROUT

ASST. PROFESSOR

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SESSION:-JULY-DEC

BATCH:2022-2026

C. V. RAMAN GLOBAL UNIVERSITY ,
BHUBANESWAR, ODISHA,
INDIA 2023-24

SUBGROUP-1 MEMEBERS

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ACKNOWLEDGMENT

We, SUBGROUP-1, collectively extend our sincere appreciation to Assistant Professor DR. DILIP ROUT for his unwavering guidance and mentorship during our experiential learning program on the topic "Insertion Sort with data structures: Array, Linked List, Doubly Linked List, etc. Write a comprehensive comparison with various kinds of input like positive integers, signed integers, floating point numbers, characters, Strings, etc".This program was conducted as part of the third semester in the academic session from July to December, Batch Number 2022-2026.

Professor DR. DILIP ROUT's expertise and dedication significantly enriched our team's understanding of data structure. His insightful feedback and continuous support played a crucial role in shaping our collective learning experience and deepening our comprehension of our topic.

We also express our gratitude to the department for providing the necessary resources and creating a conducive learning environment, allowing SUBGROUP 1 to engage in hands-on exploration and practical application of theoretical concepts.

This experiential learning opportunity has not only enhanced our technical skills but has also fostered teamwork and collaboration, preparing us to tackle real-world challenges in the field of digital systems.

Once again, thank you, Professor DR. DILIP ROUT, for your inspiring guidance and mentorship.

Sincerely,

SUBGROUP-1
SESSION:-JULY-DEC 2023
BATCH:-2022-2026

CERTIFICATE

This is to certify that Subgroup-1 has successfully completed a case study on the topic "TOPIC- INSERTION SORT WITH DATA STRUCTURES: ARRAY, LINKED LIST, DOUBLY LINKED LIST, ETC. WRITE A COMPREHENSIVE COMPARISON WITH VARIOUS KINDS OF INPUT LIKE POSITIVE INTEGERS, SIGNED INTEGERS, FLOATING POINT NUMBERS, CHARACTERS, STRINGS, ETC."
as part of the Case Study for the 3rd semester for the subject
DATA STRUCTURE

Subgroup-1 exhibited exceptional dedication and a keen interest in the chosen topic, showcasing a commendable level of enthusiasm and curiosity throughout the study. Their collaborative efforts and effective teamwork have been instrumental in the successful exploration and understanding of the complexities involved in designing and implementing their topic.

This certificate is awarded to Subgroup-1 in recognition of their outstanding commitment, keen interest, and exemplary teamwork, which greatly contributed to the successful completion of the case study.

DR. DILIP ROUT
ASSISTANT PROFESSOR
DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

C.V. RAMAN GLOBAL UNIVERSITY
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2023-24

ABSTRACT

This report investigates the behavior and performance of Insertion Sort algorithm across various data structures including arrays, linked lists, and doubly linked lists, when sorting different data types such as integers, floating-point numbers, characters, and strings. The study aims to analyze the efficiency and adaptability of Insertion Sort in different scenarios.

The research delves into the foundational principles of Insertion Sort, providing an overview of its functionality and operation. It examines the impact of different data structures on the algorithm's performance, highlighting the advantages and limitations associated with each structure.

Through comparative analysis, this study evaluates Insertion Sort's efficiency with diverse data types, shedding light on its suitability for practical applications. Considerations include the algorithm's time complexity, space complexity, and performance implications when applied to various input data.

The findings of this study offer valuable insights into the behavior of Insertion Sort, aiding in informed decision-making regarding sorting algorithms for different data sets and applications.