

**Manav Rachna International Institute of Research and Studies, Faridabad**

## Faculty of Engineering & Technology Department of Computer Science and Engineering

December 2022

# Certificate

This is to certify that this project report entitled “**ZIPPER – A File Compression Model**” *by* **Riya Chauhan, Yash Sharma (1/19/FET/BCS/006, 1/19/FET/BCS/061),** submitted in partial fulfillment of the requirements for the degree of Bachelor of Technology in **Computer Science and Engineering** under Faculty of Engineering & Technology of Manav Rachna International Institute of Research and Studies, Faridabad, during the academic year2022-23, is a bonafide record of work carried out under my guidance and supervision. I hereby declare that the work has been carried out under my supervision and has not been submitted elsewhere for any other purpose.

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# Acknowledgment

The successful realization of the project is an outgrowth of a consolidated effort of people from disparate fronts. We are thankful to **Ms. Rachna Behl** (Associate Professor) for her variable advice and support extended to us without which we would not be able to complete our project successfully.

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# Declaration

We hereby declare that this project report entitled “**ZIPPER- A File Compression Model**” *by* **Riya Chauhan, Yash Sharma (1/19/FET/BCS/006, 1/19/FET/BCS/061),** being submitted in partial fulfillment of the requirements for the degree of Bachelor of Technology in **Computer Science & Engineering** under Faculty of Engineering & Technology of Manav Rachna International Institute of Research and Studies, Faridabad, during the academic year 2022-23 is a bonafide record of our original work carried out under the guidance of **Ms. Rachna Behl, Associate Professor, FET.**

We further declare that we have not submitted the matter presented in this Project for the award of any other Degree/Diploma of this University or any other University/Institute.

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**ABSTRACT**

The Project “Zipper” is aimed at developing programs that transform a string of characters in some representation (such as ASCII) into a new string (of bits, for example) which contains the same information but whose length is as small as possible. Compression is useful because it helps reduce the consumption of resources such as data space or transmission capacity. The design of data compression schemes involve trade-oﬀ s among various factors, including the degree of compression, the amount of distortion introduced (e.g., when using lossy data compression), and the computational resources required to compress and decompress the data.

Many data processing applications require storage of large volumes of data, and the number of such applications is constantly increasing as the use of computers extends to new disciplines. Compressing data to be stored or transmitted reduces storage and/or communication costs. When the amount of data to be transmitted is reduced, the eﬀect is that of increasing the capacity of the communication channel. Similarly, compressing a ﬁle to half of its original size is equivalent to doubling the capacity of the storage medium. It may then become feasible to store the data at a higher, thus faster, level of the storage hierarchy and reduce the load on the input/output channels of the computer system. Our target is to generate a file compression model for better transmission of data. The fundamental need for text compression is that the combination of compression and decompression mechanisms be lossless otherwise data cannot be restored in the original format. Safe transaction of data can be considered paramount these days, Individuals with malicious intent can catch onto the data being transferred and use it against the entity the data is predominant to. To prevent that from happening we have many methodologies available.

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